

Hornsea Project Three  
Offshore Wind Farm



## Hornsea Project Three Offshore Wind Farm

Environmental Statement:  
Volume 3, Chapter 5 – Historic Environment

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Date: May 2018

**Hornsea 3**  
Offshore Wind Farm

**Orsted**

**Environmental Impact Assessment**

**Environmental Statement**

**Volume 3**

**Chapter 5 – Historic Environment**

**Liability**

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[www.hornseaproject3.co.uk](http://www.hornseaproject3.co.uk)

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Annex 5.7: Historic Environment Visualisations

## Glossary

Term	Definition
Bronze Age	The time period 2,000 - 700BC.
English Heritage	The Historic Buildings and Monuments Commission for England. Now replaced by Historic England
Historic England	The Historic Buildings and Monuments Commission for England.
Landscape Management Plan <sup>a</sup>	A document detailing the proposed onshore landscape planting and landscape enhancement measures.
Light Detection and Ranging	A method used to measure distance using a pulsed laser. The time taken for the laser to be reflected off objects is used to measure distance and so build a digital picture.
List Entry Number	Reference number for entry in National Heritage List.
Medieval	The time period AD410 - AD1540.
Mesolithic	The time period 10,000 - 3,500BC.
Modern	The time period 1901 onwards.
Onshore elements of Hornsea Three	Hornsea Three landfall area, onshore cable corridor, the onshore HVAC booster station, the onshore HVDC converter/HVAC substation and the interconnection with the Norwich Main National Grid substation.
Post Medieval	The time period AD1540 to 1901.
Roman	The time period AD43 - AD410.
Upper Palaeolithic	The time period 30,000 - 10,000BC.
Written Scheme of Investigation	A plan detailing the protocol for any archaeological investigation to be carried out prior to the construction of Hornsea Project Three, including procedures for field survey and watching briefs, as may be required both onshore and offshore.
Zone of Theoretical Visibility	A map, usually digitally produced, showing areas of land within which a development is theoretically visible.

## Acronyms

Acronyms	Description
CEA	Cumulative Effect Assessment
CoCP	Code of Construction Practice
DCMS	Department of Culture, Media and Sport
DCO	Development Consent Order
DEFRA	Department for the Environment, Food and Rural Affairs
DPD	Development Plan Documents
EIA	Environmental Impact Assessment

Acronyms	Description
HDD	Horizontal Directional Drilling
HER	Historic Environmental Record
HLC	Historic Landscape Character
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
LiDAR	Light Detection and Ranging
MHWS	Mean High Water Springs
MLWS	Mean Low Water Spring
NHER	Norfolk Historic Environment Record
NPPF	National Planning Policy Framework
NPS	National Policy Statement
SM	Scheduled Monument
ZTV	Zone of Theoretical Visibility

## Units

Unit	Description
GW	Gigawatt (power)
kV	Kilovolt (electrical potential)
kW	Kilowatt (power)
m	Metre (distance)
m <sup>2</sup>	Metres squared (area)
MW	Megawatt (power)

## 5. Historic Environment

### 5.1 Introduction

- 5.1.1.1 This chapter of the Environmental Statement presents the results of the Environmental Impact Assessment (EIA) for the potential impacts of the Hornsea Project Three offshore wind farm (hereafter referred to as ‘Hornsea Three’) on the historic environment. Specifically, this chapter considers the potential impact of Hornsea Three landward of Mean High Water Springs (MHWS) during its construction, operation and maintenance, and decommissioning phases. Impacts of Hornsea Three seaward of MHWS are assessed in volume 2, chapter 9: Marine Archaeology.
- 5.1.1.2 This chapter includes an assessment of the impact Hornsea Three may have on the setting of heritage assets, however, impacts on landscape and visual receptors are assessed in chapter 4: Landscape and Visual Resources.
- 5.1.1.3 This chapter summarises information from technical reports which are included at volume 6, annex 5.1: Desk Based Assessment, annex 5.2: Fieldwalking Report, annex 5.3: Site Gazetteer, annex 5.4: Screening Assessment – Onshore HVDC Converter/HVAC Substation, annex 5.5: Screening – Onshore HVAC Booster Station, annex 5.6: Onshore Geophysical Survey Report and annex 5.7: Historic Environment Visualisations.

### 5.2 Purpose of this chapter

- 5.2.1.1 The primary purpose of the Environmental Statement is to support the Development Consent Order (DCO) application for Hornsea Three under the Planning Act 2008 (the 2008 Act) and will accompany the application to the Secretary of State for Development Consent.
- 5.2.1.2 It is intended that the Environmental Statement will provide statutory and non-statutory consultees with sufficient information to complete the examination of Hornsea Three and will form the basis of agreement on the content of the DCO.
- 5.2.1.3 In particular, this Environmental Statement chapter:
- Presents the existing environmental baseline established from desk studies, consultation, and site specific surveys;
  - Presents the potential environmental effects on the historic environment arising from Hornsea Three, based on the information gathered and the analysis and assessments undertaken;
  - Identifies any assumptions and limitations encountered in compiling the environmental information; and
  - Highlights any necessary monitoring and/or mitigation measures which could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

### 5.3 Study area

- 5.3.1.1 The historic environment chapter is based on two study areas, namely the:
- Core historic environment study area; and
  - Historic environment study area.
- 5.3.1.2 The Hornsea Three core historic environment study area comprises a 250 m buffer around the onshore elements of Hornsea Three (namely the Hornsea Three landfall, the onshore cable corridor, the onshore HVAC booster station, the onshore HVDC converter/HVAC substation and the interconnection with the Norwich Main National Grid substation) plus the storage areas, compounds and main construction compound. It captures information from the Norfolk Historic Environment Record (NHER) and primarily relates to undesignated heritage assets (designated assets within 250 m are reported within the historic environment study area – see below). Where appropriate, the description of the undesignated assets may extend beyond 250 m to provide the context of key features and this is based on professional judgement. The core historic environment study area is designed to provide baseline characterisation of the historic environment and in particular the archaeology, which may be directly (physically) impacted by the onshore elements of Hornsea Three.
- 5.3.1.3 The Hornsea Three historic environment study area comprises a 1 km buffer around the onshore elements of Hornsea Three plus the storage areas, compounds and main compound. It primarily relates to designated heritage assets, but also includes undesignated assets if appropriate. The historic environment study area around the onshore HVAC booster station and HVDC converter/HVAC substation incorporates wider buffers in order to identify potential impacts on the setting of the designated assets. These wider buffers comprise:
- 5 km around the onshore HVAC booster station and HVDC converter/HVAC substation for designated assets such as Grade II listed buildings, Conservation Areas etc.; and
  - 10 km around the onshore HVAC booster station and HVDC converter/HVAC substation for designated assets of higher significance (i.e. Grade I and II\* listed buildings, registered battlefields, Grade 1 and II\* registered parks and gardens, Scheduled Monuments (SMs) or World Heritage Sites).
- 5.3.1.4 The approach of using wider buffer areas around the onshore HVAC booster station and HVDC converter/HVAC substation was based on recent experience of similar developments (including Hornsea Project One and Hornsea Project Two offshore wind farms). The study area is designed to provide baseline characterisation of the historic environment and in particular, the settings of heritage assets as well as further context on the character of the archaeology which may be directly (physically) impacted by the onshore elements of Hornsea Three.
- 5.3.1.5 The accesses fall within the Hornsea Three core historic environment and historic environment study areas and any impacts from the modifications and use of these accesses have been assessed.
- 5.3.1.6 The core historic environment study area and the historic environment study areas are shown on Figure 5.1.



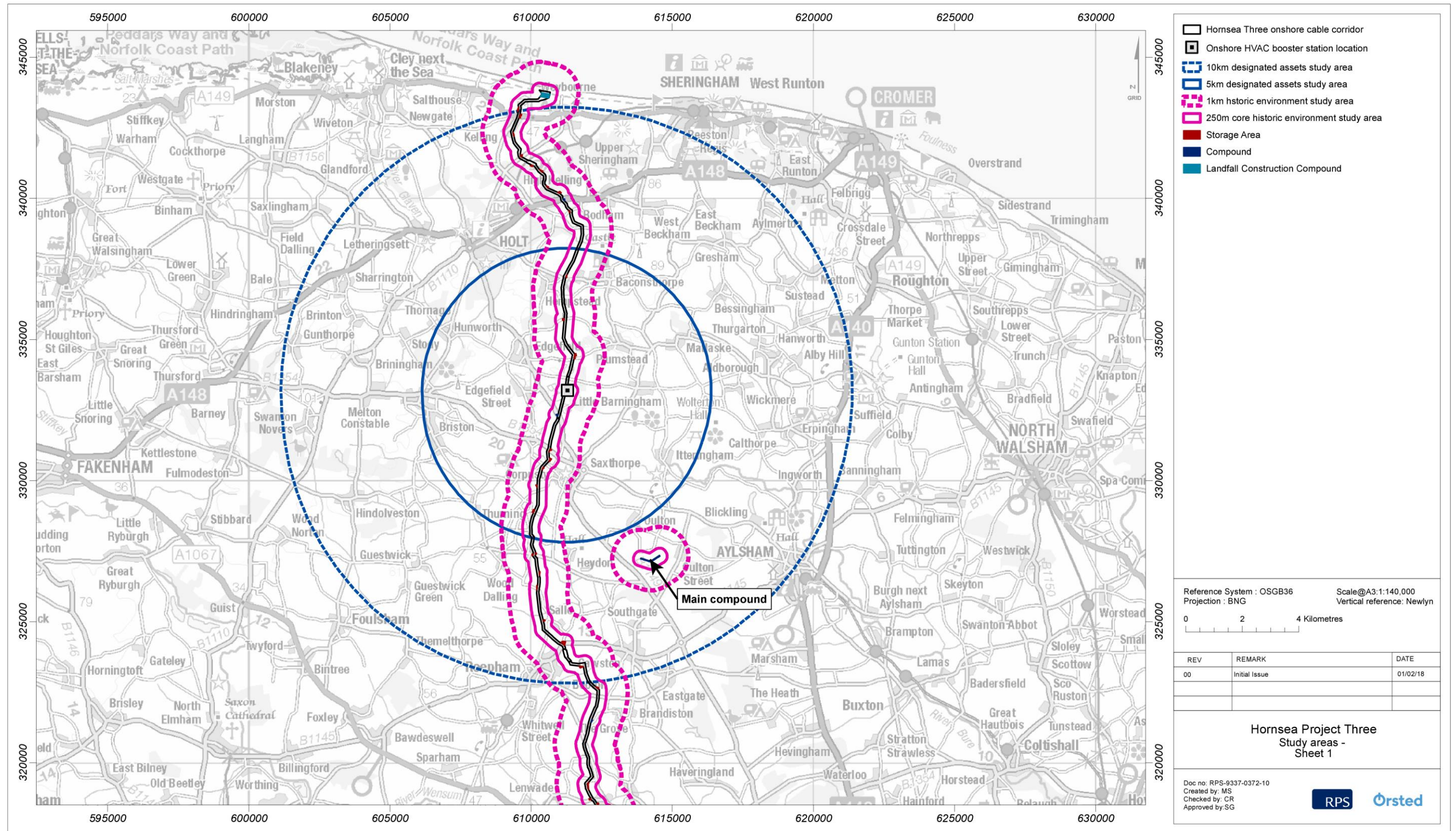


Figure 5.1: Hornsea Three study areas.



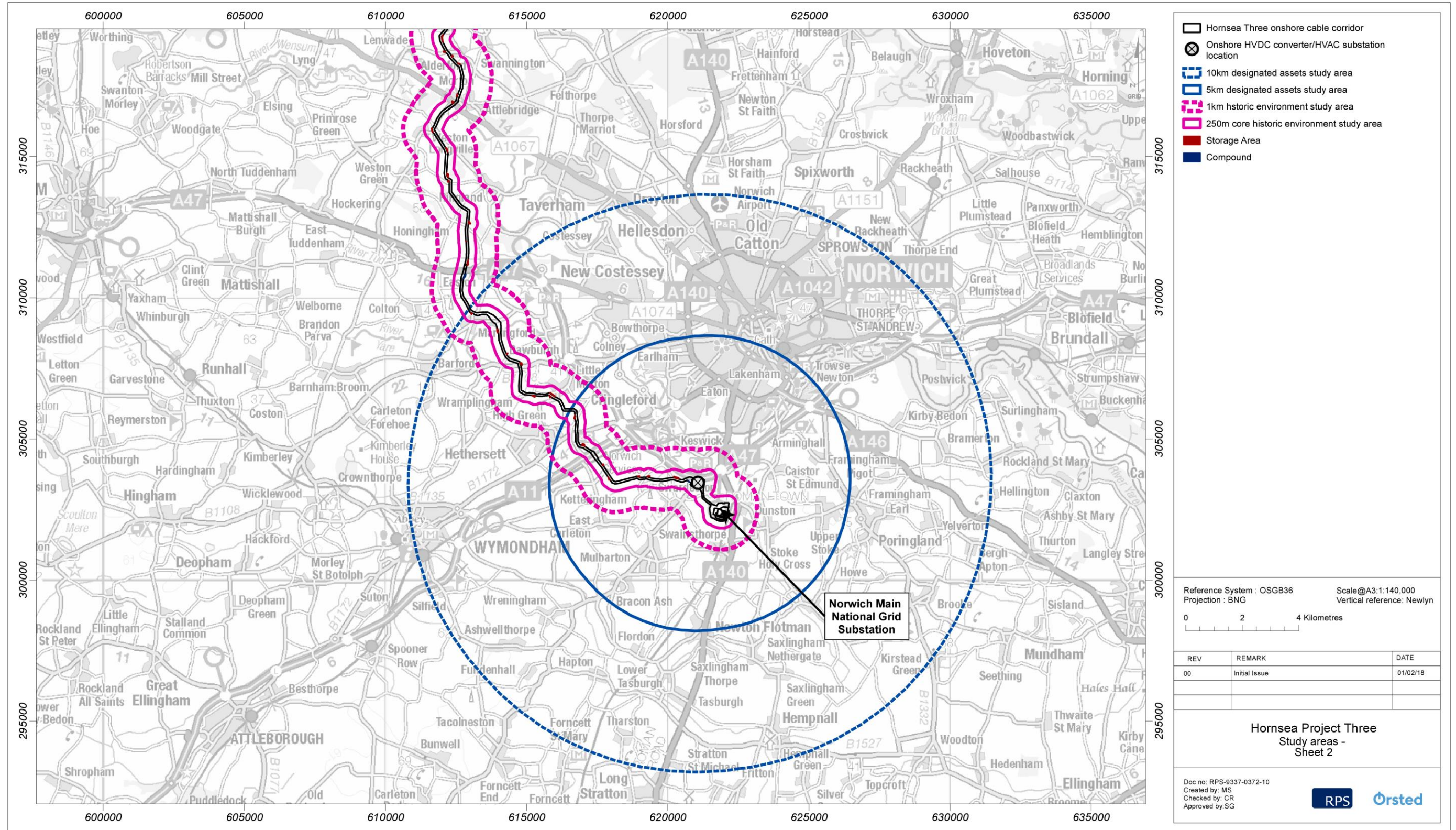


Figure 5.1: Hornsea Three study areas.



## 5.4 Planning policy context

5.4.1.1 Planning policy on offshore renewable energy Nationally Significant Infrastructure Projects, specifically in relation to historic environment, is contained in the Overarching National Policy Statement (NPS) for Energy (EN-1) (Department of Energy and Climate Change, 2011a) and the NPS for Electricity Networks Infrastructure (EN-5) (Department of Energy and Climate Change, 2011b). NPS EN-1 includes guidance on what matters are to be considered in the assessment. These are summarised in Table 5.1.

Table 5.1: Summary of NPS EN-1 provisions relevant to this chapter.

Summary of NPS EN-1 provision	How and where considered in the Environmental Statement
Applicants should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset (paragraph 5.8.8).	The significance of all heritage assets affected by the onshore elements of Hornsea Three is assessed in section 5.11 of this chapter, including the contribution that their setting makes to that significance.
As a minimum the applicant should have consulted the relevant Historic Environment Record (or, where the development is in English or Welsh waters, English Heritage or Cadw) and assessed the heritage assets themselves using expertise where necessary according to the proposed development's impact (paragraph 5.8.8).	All relevant Historic Environment Records have been consulted. See volume 6, annex 5.1: Desk Based Assessment.
Where a development site includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out an appropriate Desk Based Analysis and, where such desk-based research is insufficient to properly assess the interest, a field evaluation (paragraph 5.8.9).	A desk-based assessment has been prepared (see volume 6, annex 5.1: Desk Based Assessment) and a walkover survey (see volume 6, annex 5.2: Fieldwalking Report) and geophysical survey (see volume 6, annex 5.6: Geophysical Survey Report) have been undertaken.
Where proposed development will affect the setting of a heritage asset, representative visualisations may be necessary to explain the impact (paragraph 5.8.9).	Appropriate visualisations have been prepared for above ground structures such as the onshore HVAC booster station and HVDC converter/HVAC substations in order to demonstrate how the proposed works could affect the settings of heritage assets. These are shown in volume 6, annex 5.7: Historic Environment Visualisations.

5.4.1.2 NPS EN-1 also highlights a number of points relating to the determination of an application and in relation to mitigation. These are summarised in Table 5.2.

Table 5.2: Summary of NPS EN 1 and NPS EN-5 policy on decision making relevant to this chapter.

Summary of NPS EN-1 and NPS EN-5 policy on decision making (and mitigation)	How and where considered in the Environmental Statement
In considering applications, the decision-maker should seek to identify and assess the particular significance of any heritage asset that may be affected by the proposed development, including by development affecting the setting of a heritage asset, taking account of: <ul style="list-style-type: none"> <li>evidence provided with the application;</li> <li>any designation records;</li> <li>the Historic Environment Record, and similar sources of information;</li> <li>the heritage assets themselves;</li> <li>the outcome of consultations with interested parties; and</li> <li>where appropriate and when the need to understand the significance of the heritage asset demands it, expert advice.</li> </ul> (paragraph 5.8.11, NPS EN-1).	The evidence outlined in paragraph 5.8.11 of NPS EN-1 is provided in this chapter and annexes (see volume 6, annex 5.1: Desk Based Assessment; annex 5.2: Fieldwalking Report; annex 5.3: Site Gazetteer; annex 5.4: Screening Assessment – Onshore HVDC Converter/HVAC Substation; annex 5.5: Screening Assessment – Onshore HVAC Booster Station; and annex 5.6: Onshore Geophysical Survey Report.
In considering the impact of a proposed development on any heritage assets, the decision-maker should take into account the particular nature of the significance of the heritage assets and the value that they hold for this and future generations. This understanding should be used to avoid or minimise conflict between conservation of that significance and proposals for development (paragraph 5.8.12, NPS EN-1).	An assessment of the significance of those heritage assets which may be affected by Hornsea Three has been made in section 5.11 of this chapter.
The decision-maker should take into account the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution they can make to sustainable communities and economic vitality. The decision-maker should take into account the desirability of new development making a positive contribution to the character and local distinctiveness of the historic environment. The consideration of design should include scale, height, massing, alignment, materials and use. The decision-maker should have regard to any relevant local authority development plans or local impact report on the proposed development (paragraph 5.8.13, NPS EN-1).	Mitigation measures have been proposed where appropriate to ensure that the significance of heritage assets is sustained as far as possible. The locations of the onshore HVDC converter/HVAC substation and onshore HVAC booster station have been carefully selected in order to allow for the minimum visual impact (see volume 1, chapter 4: Site Selection and Consideration of Alternatives). Mitigation measures are identified in Table 5.13. of this chapter.
There should be a presumption in favour of the conservation of designated heritage assets and the more significant the designated heritage asset, the greater the presumption in favour of its conservation should be. Once lost heritage assets cannot be replaced and their loss has a cultural, environmental, economic and social impact. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Loss affecting any designated heritage asset should require clear and convincing justification. Substantial harm to or loss of a Grade II listed building park or garden should be exceptional. Substantial harm to or loss of designated assets of the highest significance, including SMs; registered battlefields; Grade I and II* listed buildings; Grade I and II* registered parks and gardens; and World Heritage Sites, should be wholly exceptional (paragraph 5.8.14, NPS EN-1).	Appropriate visualisations have been prepared for above ground structures such as the onshore HVAC booster station and HVDC converter/HVAC substations in order to demonstrate how Hornsea Three could affect the settings of heritage assets. These are shown in volume 6, annex 5.7: Historic Environment Visualisations.



Summary of NPS EN-1 and NPS EN-5 policy on decision making (and mitigation)	How and where considered in the Environmental Statement
Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset, the greater the justification will be needed for any loss. Where the application will lead to substantial harm to or total loss of significance of a designated heritage asset, the decision-maker should refuse consent unless it can be demonstrated that the substantial harm to or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm (paragraph 5.8.15, NPS EN-1).	Significance of effects on designated heritage assets are included in the section 5.11 of this chapter.
Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. The policies set out in paragraphs 5.8.11 to 5.8.15 (see above) apply to those elements that do contribute to the significance. When considering proposals, the decision-maker should take into account the relative significance of the element affected and its contribution to the significance of the World Heritage Site or Conservation Area as a whole (paragraph 5.8.16, NPS EN-1).	Significance of effects on Conservation Areas are included in section 5.11 of this chapter. There are no World Heritage Sites or elements of in the Hornsea Three historic environment study area.
Where loss of significance of any heritage asset is justified on the merits of the new development, the decision-maker should consider imposing a condition on the consent or requiring the applicant to enter into an obligation that will prevent the loss occurring until it is reasonably certain that the relevant part of the development is to proceed (paragraph 5.8.17, NPS EN-1).	An outline of appropriate mitigation measures is given in Table 5.13 and Table 5.14 of this chapter.
When considering applications for development affecting the setting of a designated heritage asset, the decision-maker should treat favourably applications that preserve those elements of the setting that make a positive contribution to, or better reveal the significance of, the asset. When considering applications that do not do this, the decision-maker should weigh any negative effects against the wider benefits of the application. The greater the negative impact on the significance of the designated heritage asset, the greater the benefits that will be needed to justify approval (paragraph 5.8.18, NPS EN-1).	Effects on designated heritage assets, including effects on their settings are included in section 5.11 of this chapter.
NPS EN-5 notes that developers will be influenced by Schedule 9 to the Electricity Act 1989, which places a duty on all generation, supply, transmission and distribution licence holders, in formulating proposals for new electricity networks infrastructure, to have regard to the desirability of protecting sites, buildings and objects of architectural, historic or archaeological interest (paragraph 2.2.6, NPS EN-5).	The potential impacts of Hornsea Three on the historic environment are outlined in section 5.11. of this chapter.

## 5.4.2 Other relevant policies

5.4.2.1 A number of other policies are relevant to the historic environment including:

- National Planning Policy Framework (NPPF) (Department for Communities and Local Government (DCLG), 2012);

- Web based planning practice guidance is provided by the DCLG: Conserving and enhancing the historic environment (last updated April 2014); and
- Infrastructure Planning (Decisions) Regulations 2010.

5.4.2.2 Key provisions of these policies are set out in Table 5.3 along with details as to how these have been addressed within the assessment.

Table 5.3: Summary of other relevant policies relevant to historic environment.

Summary of provision	How and where considered in the Environmental Statement
<b>National Planning Policy Framework</b>	
Paragraph 128 notes that in determining applications local planning authorities should require an applicant to provide a description of the significance of any heritage assets affected and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage asset and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset.	An assessment of the significance of the impact on heritage assets affected by Hornsea Three, including their setting, is given in section 5.11 in this chapter.
A heritage asset is defined in the NPPF at page 52 as a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage assets include designated heritage assets and assets identified by the local planning authority (including local listing).	A description of the method used to identify heritage assets, including consultation with local planning authorities and Historic England, is included in section 5.6 in this chapter.
Paragraph 132 notes that when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be.	The relative importance of the historic environment assets assessed in this chapter is discussed in section 5.11 in this chapter.
Paragraph 135 notes that the effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement would be required having regard to the scale of any harm or loss and the significance of the heritage asset.	The undesignated heritage assets considered in this chapter are described in detail in volume 6, annex 5.1: Desk Based Assessment. An assessment of the potential impact of Hornsea Three on undesignated heritage assets is laid out in section 5.11 in this chapter.
<b>National Planning Practice Guidance</b>	
On 6 March 2014 DCLG launched the National Planning Practice Guidance as a web-based resource. The guidance includes 'Conserving and enhancing the historic environment' (April 2014) which provides advice on several areas of historic environment practice, including on the assessment of the settings of heritage assets.	How the National Planning Practice Guidance has been used to inform the assessment of setting is outlined in section 5.9.

Summary of provision	How and where considered in the Environmental Statement
<b>Infrastructure Planning (Decisions) Regulations 2010</b>	
<p>It is noted that:</p> <p><i>“(1) When deciding an application which affects a listed building or its setting, the decision maker (a) must have regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses.</i></p> <p><i>(2) When deciding an application relating to a Conservation Area, the decision-maker must have regard to the desirability of preserving or enhancing the character or appearance of that area.</i></p> <p><i>(3) When deciding an application for development consent which affects or is likely to affect a scheduled monument or its setting, the decision-maker must have regard to the desirability of preserving the scheduled monument or its setting.” (paragraph 3)</i></p>	<p>The potential impacts of Hornsea Three on Conservation Areas, listed buildings, SMs, and their settings are considered in section 5.11 in this chapter.</p>

## 5.5 Consultation

- 5.5.1.1 Table 5.4 below summarises the issues raised relevant to historic environment, which have been identified during consultation activities to date. Table 5.4 also indicates either how these issues have been addressed within this Environmental Statement or how the Applicant has had regard to them. Further information on the consultation activities undertaken for Hornsea Three can be found in the Consultation Report (document reference number A5.1) that accompanies the application for Development Consent.
- 5.5.1.2 In addition, Hornsea Three has regularly consulted with the Norfolk County Council Archaeologist and Historic England providing project updates, as well as to discuss and agree scopes for the heritage walkover survey and geophysical survey campaign which are discussed at paragraphs 5.6.3.1.



Table 5.4: Summary of key consultation issues raised during consultation activities undertaken for Hornsea Three relevant to historic environment.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered
December 2016	PINS – Scoping Response	The applicant proposed to scope out effects on buried archaeological remains from the decommissioning of the Hornsea Three landfall area, onshore cable corridor, onshore HVDC converter/HVAC substation and onshore HVAC booster station. The Secretary of State does not consider that there is sufficient information at this stage to scope out these effects	Effects on buried archaeological remains from the decommissioning of the onshore elements of Hornsea Three (including the landfall area, onshore cable corridor, onshore HVDC converter/HVAC substation and onshore HVAC booster station) are considered in section 5.11.
December 2016	PINS – Scoping Response	The Secretary of State notes the intention to include a 1 km buffer around the Hornsea Three onshore cable corridor, increasing this to 10 km buffer around the onshore HVDC converter/HVAC substation site and onshore HVAC booster station site for the impact assessment on designated heritage assets (Grade I and II* listed buildings and SMs). The potential temporary and permanent impact on the setting of other designated heritage assets (Grade II listed buildings and Conservation Areas) will be considered having regard to a 1 km buffer around the Hornsea Three onshore cable corridor and 5 km buffer for the onshore HVDC converter/HVAC substation site and onshore HVAC booster station site is to be used. The appropriate 1 km buffer would appear to be a narrow corridor and therefore the Secretary of State advises that the Zone of Influence should be agreed with the relevant consultees and clearly justified in the Environmental Statement.	The 1 km, 5 km and 10 km buffers have been used as the historic environment study area and have been discussed and agreed with the relevant consultees. A Zone of Theoretical Visibility (ZTV) was generated and heritage assets within the ZTV were screened to identify where significant effects were unlikely to occur. Assessment was undertaken for those assets where potential effects were identified. This approach is set out in volume 6, annex 5.4: Screening Assessment – Onshore HVDC Converter/HVAC Substation and annex 5.5: Screening Assessment – Onshore HVAC Booster Station.
December 2016	PINS – Scoping Response	The Scoping Report (see volume 4, annex 5.5: Scoping Report and PINS Scoping Opinion) goes on to state that in relation to archaeology, a 1 km buffer will be implemented around the Hornsea Three onshore cable corridor with a 'focus on a smaller core area of 250 m'. The Secretary of State, as noted above suggests that the Environmental Statement clarifies what is meant by 'focus on' and ensures that this approach is agreed with relevant consultees and clearly justified in the Environmental Statement.	The 250 m buffer has been used as the Hornsea Three core historic environment study area and primarily considers undesignated assets. The historic environment study area extends to 1 km around the Hornsea Three onshore cable corridor (and up to 10 km around the onshore HVAC booster station and HVDC converter/HVAC substation) and primarily considers designated assets and their settings. Section 5.3 justifies the approach used. The buffers have been discussed and agreed with the relevant consultees.
December 2016	PINS – Scoping Response	The Secretary of State suggests that there should be sufficient cross-referencing within the Environmental Statement to demonstrate that the whole Hornsea Three onshore cable corridor, onshore and offshore, has been considered in relation to impacts on the historic environment. This may be achieved through clear cross referencing.	This chapter considers the potential impact of the onshore cable corridor (and the other onshore elements of Hornsea Three) landward of MHWS, including the historic landscape at the landfall area. Potential impacts associated with offshore cable corridor (i.e. below MHWS) are considered in volume 2, chapter 9: Marine Archaeology. Cross references have been used as appropriate within these chapters.
December 2016	PINS – Scoping Response	Historic England in their response to the Scoping Opinion notes the complex historic landscape at the Hornsea Three landfall area. The Secretary of State encourages the Applicant to consider this response and reflect such matters in the Environmental Statement.	This chapter considers the potential impact of Hornsea Three landward of MHWS, including the historic landscape at the Hornsea Three landfall area. The Hornsea Three landfall area below MHWS is considered in volume 2, chapter 9: Marine Archaeology.
December 2016	PINS – Scoping Response	The Secretary of State recommends that draft versions of the outline Code of Construction Practice (CoCP) (document reference A8.5) and Written Scheme of Investigation (WSI) and landscape planting proposals are submitted with the DCO application and agreed with relevant statutory consultees. The Applicant's attention is drawn to the comments from Historic England in Appendix 3 on the need for a protocol for archaeological discoveries	An outline CoCP (document reference A8.5) and outline Landscape Management Plan (document reference A8.7) are included in the DCO application. A procedure for dealing with unexpected archaeological sites will be agreed with relevant authorities (see Table 5.13).
December 2016	Historic England – Scoping Response	Above the Mean High Water mark, the undesignated terrestrial archaeology would more properly be the province of the Norfolk County Council Historic Environment Service (NHES), and we recommend the applicant consult with the NHES at the earliest opportunity. Similarly, the conservation officers in the various local planning authorities would need to be consulted regarding impacts upon the setting of listed building and parks and gardens, including those listed at Grade II, as well as Conservation Areas and other undesignated heritage assets within their remit.	Consultation with NHES and the local planning authorities is summarised in this table and set out in the Consultation Report (document reference A5.1). NHES has been regularly consulted during the application process.
December 2016	Historic England – Scoping Response	The EIA should determine the impact of the proposed development upon the designated and non-designated heritage assets (and their settings), and assess the level of any resulting benefit, harm or loss to their significance.	The impact of Hornsea Three on designated and undesignated assets (and their settings) has been assessed (see section 5.11).
December 2016	Historic England – Scoping Response	It is important to ensure that the EIA fully identifies and defines the nature, extent and significance of the historic environment which is likely to be affected by the proposed works. This should include the environment within the physical footprint of the development works, as well as areas outside of these sites which could be indirectly impacted by the physical works	Designated and undesignated heritage assets within the core historic environment and historic environment study areas (see section 5.3 ) have been identified and assessed.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered
December 2016	Historic England – Scoping Response	The assessment must also consider any potential impact upon the setting of nearby designated (and non-designated) heritage assets both within, and without, the Hornsea Three onshore cable corridor. This work should include detailed consultation with Historic England, The NHES and the relevant local planning authorities Conservation and Landscape Officers. It would require programmes of desk-based assessment and on-site investigation (in line with agreed and approved specifications). It should be undertaken at the earliest stage possible in order to inform the need for and scope of any mitigation which might be required. Such mitigation could include programme of archaeological works and works to preserve heritage assets in situ or via record. Mitigation may also require substantial changes to the design and location of the proposed developments.	Consultation with relevant stakeholders is summarised in Table 5.4. Designated and undesignated assets are identified in volume 6, annex 5.1: Desk Based Assessment and annex 5.3: Site Gazetteer. Any potential impact upon nearby designated (and non-designated) heritage assets both within, and without, the Hornsea Three onshore cable corridor is assessed in section 5.11.
December 2016	Historic England – Scoping Response	In regards to the onshore historic environment, paragraphs 12.2.4 - 12.2.7 identify the range of resources to be consulted and assessed as part of the desk-based assessment - for example the NHER. We would recommend that this is expanded to include an assessment of the National Record for the Historic Environment and the National Heritage List for England. The desk-based assessment should also consider information from available aerial photographic and LiDAR data, and details from past archaeological and geophysical investigations within the cable corridor.	An assessment of the National Record for the Historic Environment and the National Heritage List for England has been undertaken (see in particular volume 6, annex 5.1: Desk Assessment, annex 5.4: Screening Assessment – Onshore HVDC converter/HVAC substation and annex 5.5: Screening Assessment - Onshore HVAC Booster Station. The desk-based assessment (volume 6, annex 5.1: Desk Assessment) also considers information from available aerial photographs, and details from past archaeological and geophysical investigations.
December 2016	Historic England – Scoping Response	For the onshore works the EIA should fully consider the impact upon both designated and non-designated heritage assets. This should include the impact upon the setting of these assets. It is important to note that, depending upon the location of the proposed works and the asset type, the heritage assets effected by the proposed onshore works could be located outside of the boundaries of the defined Scoping Area (for example heritage assets with important long views across the landscape).	The impact upon both designated and non-designated heritage assets, including the impact upon the setting of these assets is considered in section 5.11. Wider buffers have been applied around the onshore HVAC booster station and HVDC converter/HVAC substation and a ZTV has been applied to identify those assets with long views across the landscape.
December 2016	Historic England – Scoping Response	The EIA should assess nature and extent of the historic environment, identifying those heritage assets likely to be affected by each element of the proposed onshore development works. It should assess and describe the significance of these assets (e.g. what matters and why it is important) including the contribution made by setting to this significance. 'Setting' is not confined to just visual considerations and the EIA must assess all relevant elements of an asset's setting - For the visual assessment photomontages, wireframe models and/or similar techniques should be used to illustrate and assess the impact from elements such as the onshore HVAC booster station and HVDC converter/HVAC substation. The EIA should assess the magnitude of impact upon the assets and the resulting levels of benefit, loss or harm to significance. This is in line with the principles and concepts within the NPPF (e.g. paragraphs 12.2.15 - 12.2.18).	The impact upon both designated and non-designated heritage assets, including the impact upon the setting of these assets is considered in section 5.11. Screening assessments have been undertaken to identify key viewpoints of the onshore HVAC booster station and HVDC converter/HVAC substation. Visualisations, including wireframes and photomontages, have been prepared to aid the assessment (see volume 6, annex 5.7: Historic Environment Visualisations).
December 2016	Historic England – Scoping Response	We note that registered parks and gardens are considered as landscape designations within the Landscape and Visual Impact chapter. We would highlight that these are designated heritage assets (as defined and identified within the NPPF) and should therefore also be considered within the historic environment chapter (with regard and reference to the Landscape and Visual Impact Assessment) and in-line with the relevant criteria and methodology as set out above.	Registered parks and gardens have been identified (see volume 6, annex 5.1: Desk Based Assessment and annex 5.3: Site Gazetteer) and the potential impacts on these assets has been assessed. Cross references to the landscape chapter have been added where appropriate.
December 2016	Historic England – Scoping Response	It is imperative that the EIA fully considers cumulative impact upon the setting of the designated and non-designated heritage assets, as well as cumulative impact from groundworks. It is possible that the impact of a development can effect below ground deposits over a much wider area - for example works may result in hydrological changes which could result in the desiccation and drying of wetland deposits and preserved waterlogged archaeological remains.	The cumulative impact on the settings of designated and non-designated assets is considered in section 5.13. With regard to cumulative impacts from groundwork, consultation with Historic England has indicated that this comment is a general issue and does not directly relate to Hornsea Three. Areas of potential waterlogged soils and the potential impacts on local hydrogeology are identified in chapter 1: Geology and Ground Conditions and volume 6, annex 2.4: Hydrological Characterisation Report.
December 2016	Historic England – Scoping Response	As the final design and specification for the built elements of the scheme have not yet been finalised, the EIA would need to consider the impact from all likely form of foundation design and all other groundworks which might be needed - such as landscaping and attenuation.	The maximum design scenario is detailed in Table 5.8 which sets out the parameters that have been used in the assessment. Further project details are presented in volume 1, chapter 3: Project Description.
December 2016	Historic England – Scoping Response	For onshore heritage the EIA should note that non-designated heritage assets also have a setting (which therefore, needs to be assessed) and that there could be numerous archaeological sites which, although not designated, would be considered to be of national importance and should be afforded similar consideration as SMs. This is considered in the NPPF under paragraph 139.	Undesignated assets and their settings are identified in volume 6, annex 5.1: Desk Based Assessment and their importance and the potential impacts on these assets are assessed in section 5.11.



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December 2016	Historic England – Scoping Response	The Scoping Report (see volume 4, annex 5.5: Scoping Report and PINS Scoping Opinion) proposes to scope out the impact upon below ground and above ground archaeology during the 'decommissioning stage' for all elements of the project (as this would be covered during construction stage) however it should be noted that the demolition of buildings and infrastructure can have an impact greater than that of constructions - for example if grubbing out of foundations or remediation of contaminants is required - and therefore this should be considered as part of the EIA.	The decommissioning of the onshore cable corridor has been scoped out as the cable will remain in-situ post decommissioning with the ends cut and sealed. The impacts from the decommissioning of the onshore HVAC booster station and HVDC converter/HVAC substation are considered in section 5.11.
September 2017	Norfolk County Council – Section 42 Response	<p>The historic environment assessment so far is based only on the known archaeological assets and the potential exists for previously unidentified heritage assets with archaeological interest (yet unestablished significance) to be present along the unevaluated sections of the Hornsea Three onshore cable corridor. Norfolk County Council have previously advised the applicant that further archaeological survey work (including geophysical survey and trial trenching) will be required post-consent along the whole of the onshore cable route which will in turn inform the mitigation measures to be adopted (i.e. to avoid archaeological remains). Consequently, the assessment of the overall impact of the proposals on undesignated heritage assets with archaeological interest can only be provisional at this stage.</p> <p>Orsted and their heritage consultant (RPS) should continue to review the setting of the designated heritage assets affected by the booster station and substation and produce supporting visualisations for the EIA in consultation with Historic England and Norfolk County Council.</p> <p>The Preliminary Environmental Information Report (PEIR) and EIA need to explicitly acknowledge that further archaeological survey work is required on the whole of the onshore cable route before mitigation measures for undesignated heritage assets can be agreed. A clear strategy and programme for this work needs to be agreed with Norfolk County Council and Historic England and be fully set out in the EIA.</p>	<p>The volume 6, annex 5.1: Desk Based Assessment provides a map regression search* on the basis of the onshore elements of Hornsea Three as well as compounds, storage areas and accesses. Visualisations have been prepared where potential significant effects were identified and are included in volume 6, annex 5.7: Historic Environment Visualisations. Measures adopted as part of Hornsea Three are delineated in Table 5.13 and Table 5.14.</p> <p>*A map regression search is a search of historic maps to look for any previously unrecorded remains (i.e. buildings identifiable on an early maps).</p>
September 2017	Planning, South Norfolk Council – Section 42 Response	<p>It is considered that the PEIR underplays the potential impact on Keswick Hall, due to only being a Grade II listed building; however, it is a former country house of some status, by a national architect, with a designed landscape to it south east and importantly directly faces the site with the landscape in between. Larger structures in the backdrop could have a significant adverse impact on these views and the relationship between the house and its designed garden.</p> <p>At the application stage the application requires a separate Heritage Impact Statement that looks into more detail with regard to the impact on the setting of these heritage assets and importantly fully analyses how the landscape setting contributes to the overall significance of those assets, which is not identified in detail in the PEIR.</p> <p>The assessment with the PEIR places significance as the listing status. This does not relate to how setting might contribute to a building, as for example the landscape parkland to the south east of Keswick Hall makes a significant contribution to its setting. Mangreen Hall still architectural terms faces north and although its parkland has degraded and been replaced with agricultural fields, any development to the north of the Hall (as indicated with the orange land) could result in less than substantial but still significance harm to the setting of the heritage asset through removing its rural setting and affecting the important northern aspect of the hall. There are views from the hall looking north and vice versa, looking back from the fields to the hall. Gowthorpe is an earlier moated manor with more of an agricultural setting potentially large structures in the distance could affect its rural isolation in views particularly as there are footpaths around the site and if they are considered structures/buildings that are alien in a rural context and detract from views to and from the heritage assets.</p>	<p>A Heritage Impact Statement is provided within volume 6, annex 5.1: Desk Based Assessment. This examines the setting baseline in some detail.</p> <p>The assessment of the impact, if any, of Hornsea Three on the settings of heritage assets, including Keswick Hall, Mangreen Hall and Gowthorpe has been undertaken in accordance with the steps outlined at paragraph 19 of 'The Setting of Heritage Assets' Historic England GPA 3 2017. Further assessment of the effect of Hornsea Three on Keswick Hall including a visualisation, is provided within this chapter, particularly at paragraph 5.11.1.92 <i>et seq.</i> and in volume 6, annex 5.7: Historic Environment Visualisations.</p>

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September 2017	Planning, South Norfolk Council – Section 42 Response	<p>Mangreen Hall and Associated buildings.</p> <p>To the north of Mangreen Lane historic maps show historic avenue planting which a designed landscape associated with the house. The house has its principal elevation facing north and was purposely designed to be viewed arriving along this avenue from the north. Although this planting has been removed, and there are new buildings to the north of the house as well as screening, there is always the possibility that the historic setting could be reinstated.</p> <p>There are also indications of the deserted medieval village and field workings around the Hall and these need to be taken into account: <a href="http://www.heritage.norfolk.gov.uk/record-details?MNF58680">http://www.heritage.norfolk.gov.uk/record-details?MNF58680</a>. These will all have an impact on the location of buildings and potential screening by landscaping (including bunding/tree planting etc.) Mangreen is not included in the archaeology section, although as para 139 states “Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets”.</p> <p>With PEIR the potential (para 5.10.2.60) that the magnitude of impact of Hornsea Three on the designated assets can be considered to be minor as it will have some impact on setting. A large building has the potential to still result in significant harm to the setting of the Hall, and to some extent, particularly if development takes place in close proximity to the north of the hall. It is agreed that the effect of Hornsea Three on the designated assets is assessed as being moderate adverse, which is significant in EIA terms and at an application stage harm could be harmful.</p> <p>There is some potential to affect the setting of Wattle Cottage (Grade II). Although this is a modest cottage with low eaves and dormers, with a more localised setting than Mangreen Hall, the proximity of the works means it is likely to be highly visible and has the potential to impact on the rural setting of cottage. Although not a high grade of listing, the degree of impact will be moderate adverse.</p>	<p>The historic avenue associated with Mangreen Hall is described in section 1.7 of volume 6, annex 5.1: Desk Based Assessment. The possibility of the new buildings to the north of the house and screening being removed and the avenue being reinstated is noted, but seems unlikely, given the extent of work required and the effect on listed buildings and their settings. Impacts have been assessed against the current baseline as per the methodology set out volume 1, chapter 5: Environmental Impact Assessment Methodology.</p> <p>Consultation with Norfolk County Council Archaeology has not identified an issue with the deserted medieval village at Mangreen Hall but the effect of Hornsea Three on this asset is considered in the paragraphs 5.11.1.61 to 5.11.1.69 of this chapter.</p> <p>An assessment of the impact of Hornsea Three on Wattle Cottage is provided in paragraphs 5.11.1.61 to 5.11.1.69 of this chapter.</p>
September 2017	Planning, South Norfolk Council – Section 42 Response	<p>With regard to Keswick Hall, the landscaped park to the south east of the hall is an important aspect contributing to its setting in terms of views to and from the hall. Although the building was designed by a well-known national architect, William Wilkins, subsequent alterations and extensions to turn the hall into a teacher training college has led to a Grade II listing. Although the hall has seen significant extensions, the principal historic part of the building (i.e. the central 3 storey pedimented classical façade) faces south east towards its historic parkland.</p>	<p>A further baseline description is provided in section 1.7 of volume 6, annex 5.1: Desk Based Assessment.</p> <p>An assessment of the impact of Hornsea Three on Keswick Hall is provided in section 5.11.</p> <p>In addition, a visualisation from a viewpoint at Keswick Hall is included in volume 6, annex 5.7: Historic Environment Visualisations to assess the likely effect of Hornsea Three on the designated asset.</p>
September 2017	Planning, South Norfolk Council – Section 42 Response	<p>Gowthorpe Manor House is a complex of various buildings including the Grade II* Manor House itself. The buildings are some distance to the south and generally face away from the site. The roof tops are visible from Mangreen Lane. Depending on height of the development the isolated setting of the building cluster may be harmed. The isolated nature of this rural cluster is of significance, however there are fields between development and the house. Unlike Keswick or Mangreen, there is no indication of a designed landscape around the house and therefore its setting is characterised both in the modern day and historically by agricultural fields. If structures are visible it may result in a degree of harm and the building cluster needs to be included in a Heritage Impact Statement once it is clearer what structures are actually planned.</p>	<p>A further baseline description is provided in section 1.7 of volume 6, annex 5.1: Desk Based Assessment.</p> <p>An assessment of the impact of Hornsea Three on Gowthorpe Manor House is provided in section 5.11.</p> <p>In addition, a visualisation from a viewpoint at Gowthorpe Manor House is included in volume 6, annex 5.7: Historic Environment Visualisations to assess the likely effect of Hornsea Three on the designated asset.</p>
September 2017	Planning, South Norfolk Council – Section 42 Response	<p>With regard to Caistor Old Hall and St Edmunds the degree of harm is considered to be moderate/adverse. However, with the distance, separation provided by the parkland of Dunston Hall and landscaping provided around the sand and gravel pit, and land levels, it is likely that there will not be any significant impact, if any, on those heritage assets. These should be included in assessment, together with archaeology of Caistor Roman Fort, if only to discount that the Heritage Assets that will be impacted upon.</p>	<p>The likely effect of Hornsea Three on Caistor Hall is considered in paragraphs 5.11.1.71 to 5.11.1.81.</p> <p>A HIA is provided in volume 6, annex 5.1: Desk Based Assessment. St Edmunds Church and Dunston Manor are considered in volume 6, annex 5.4 Screening Assessment – Onshore HVDC Converter/HVAC substation.</p> <p>A visualisation from a viewpoint at Venta Icenorum is included in volume 6, annex 5.7: Historic Environment Visualisations to assess the likely effect of Hornsea Three on the designated assets there.</p>
September 2017	Planning, South Norfolk Council – Section 42 Response	<p>Any heritage assessment should also to cover undesignated heritage assets, in particular Cavell House, which is in close proximity to the site to the south west.</p>	<p>Cavell House is assessed with the designated assets in Swardeston. See paragraph 5.11.1.84 <i>et seq.</i></p>



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September 2017	Historic England – Section 42 Response	We are particularly concerned about the over reliance on tables and matrices for the analysis of significance and determination of impact. Whilst matrices are recognised as a standard tool, they are no substitute for an informed discussion on significance with a detailed narrative and commentary. This narrative needs to reference to the policy tests established by the NPPF and the Environmental Statement would need to provide sufficient information to explore the ideas of benefit, harm and loss (as described in NPPF) and to set out ‘what matters and why’ in terms of the heritage assets and their significance and setting. This is also set out in our Good Practice Advice note 3 ‘The Setting of Heritage Assets’ (see <a href="https://content.historicengland.org.uk/imagesbooks/publications/gpa3-setting-of-heritage-assets/gpa3.pdf">https://content.historicengland.org.uk/imagesbooks/publications/gpa3-setting-of-heritage-assets/gpa3.pdf</a> ).	The impact methodology is in accordance with the DMRB methodology and is consistent with the assessment approach used on similar linear schemes. The assessment presented in this chapter takes into account the requirements of the NPPF and other relevant guidance and professional judgement has been applied. It provides a narrative commentary, whilst seeking to avoid duplication of information from the baseline section and supporting technical annexes. Consultation undertaken post section 42 has resolved these concerns (see the Consultation Report which accompanies the DCO) through the expansion of volume 6, annex 5.1: Desk Based Assessment, which provides further narrative.
September 2017	Historic England – Section 42 Response	In relation to the cable corridor, we note that the only assets to have been fully assessed are those potentially affected by the onshore HVAC booster station at Barningham and the onshore HVDC converter/HVAC substation at Mangreen. There are a number of designated heritage assets that lie along the cable route, and in particular just outside of the main corridor. We accept that the intention would be to restore the landscape along the route once works are complete, and agree that the primary impact from the construction of the cable route would be of a temporary nature. There are however, several highly designated heritage assets that lie close to the corridor route and around the 250 m buffer zone. These include Baconsthorpe Castle, the designated sites at Salle including the Grade I church, the churches at Booton and Little Melton and the Intwood registered landscape.	Assets within the historic environment study area (i.e. 1 km from the onshore elements of Hornsea Three) have been identified and are reported in volume 6, annex 5.1: Desk Based Assessment and annex 5.3: Site Gazetteer. These assets have been considered and assessed in the chapter at section 5.11, in particular the temporary construction impacts on these designated assets.
September 2017	Historic England – Section 42 Response	It would be helpful to understand and clarify the nature of the cabling work at these locations. In particular, the length of construction time, whether vibration is potentially an issue, any possible off-site impacts from the construction and the length of time before the landscape would have fully recovered. The impact of this on the significance of these assets should be considered. We would particularly want to draw your attention to Baconsthorpe Castle and the designated heritage assets at Salle. Part of the significance of Baconsthorpe Castle is with its associated mere and moat, and we would wish to be reassured that the excavations on adjacent land would not result in a change to the hydrology of the area which would change the setting of the asset. At Salle the cable route would run between the listed church and the registered park and garden and the impact on both the individual assets and the relationship between these should be considered, especially in relation to the landscaping.	The nature of the onshore cabling laying activities are described in volume 1, chapter 3: Project Description. The effect, if any on the hydrology along the Hornsea Three onshore cable corridor is described in volume 3, chapter 2: Hydrology and Flood Risk. There would be no effect on the hydrology of the moat at Baconsthorpe Castle. In response to consultation feedback and design refinement, the route of the onshore cable corridor has been altered to run further to the west at Salle so that it does not run between the listed church and the registered park and garden (see volume 3, chapter 4: Site Selection and Consideration of Alternatives).
September 2017	Historic England – Section 42 Response	We note the cable corridor would need to cross a number of small rivers. From experience with other similar projects the archaeological potential of these small wetland environments needs to be recognised. The floodplains have a high potential for the recovery of archaeological finds, and the peat and other wet deposits are of significance in historic environment terms. In our view, these areas would need early identification in the Environment Statement and would require specialist evaluation as part of the project. These areas would need to be identified in the Environment Statement and a strategy for their evaluation would need to be addressed in the WSI.	Assessment is provided in the section 5.11. Mitigation measures already included as part of the design in Hornsea Three are outlined in Table 5.13 and Table 5.14. An onshore WSI will be prepared prior to the commencement of any consented works.
September 2017	Historic England – Section 42 Response	In relation to the onshore HVDC converter/HVAC sub-station, we are pleased to see that the report considers designated heritage assets which are close to the Mangreen substation site. These includes the Roman Town of Venta Icenorum, Gowthorpe Manor and Barn (grade II*), Mangreen Hall, and a number of other associated assets. There are also a number of Conservation Areas, under consideration including those in Norwich to the north.  Gowthorpe is a manor house dating from the sixteenth century and has a number of associated ancillary buildings. The rural setting of these buildings contributes to their significance and there is a concern that this would be eroded by the proposed onshore HVDC converter/HVAC substation to the north. Likewise, Mangreen Hall, grade II*, and surrounding grade II buildings lie to the south of the onshore HVDC converter/HVAC substation. The Hall façade dates from the eighteenth century but conceals an earlier core. It faces north to the direction of the proposed onshore HVDC converter/HVAC substation and the impact on the views from the Hall and erosion of the rural setting would be likely to result in a degree of harm.	Noted and assessed in section 5.11.

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September 2017	Historic England – Section 42 Response	Venta Icenorum (Roman town and associated prehistoric and medieval remains, list entry number 1021463), also known as Caistor Roman town, is a major complex multi period archaeological site that sits within the landscape that also includes a number of associated archaeological sites. Some of these are separately designated. At its heart is the well preserved remains of a large Roman Town, which was a major settlement and one of the regional Roman centre. As well as the Roman remains the site also has evidence for earlier prehistoric settlement as well, as Saxon and medieval remains, which include the separately listed Church of St Edmund (Grade II*). The rural setting of these buildings contributes much to their significance and development within the setting would likely to result in a degree of harm to their significance.	Noted and assessed in section 5.11.
September 2017	Historic England – Section 42 Response	We agree with the conclusion in the DBA that the impact on these assets is likely to be significant in Environmental Impact Assessment terms. The impact of the development on these highly graded assets would need to be fully assessed in the Environmental Statement and further information would need to be provided to illustrate the impacts. This should include a full written analysis and multiple wireframes and/or photomontages, taken at key locations. Following the assessment, the application would need to demonstrate that all efforts have been made to minimise the harm to these assets. This would require integration of the LVIA and heritage chapters. We would welcome the opportunity to advise further on view points and locations for photomontages.	Those assets identified as potentially significantly affected by Hornsea Three in volume 6, annex 5.1: Desk Based Assessment have been further assessed in this chapter. In addition, wireframes and photomontages have been produced for key locations and are provided in volume 6, annex 5.7: Historic Environment Visualisations, with written analysis provided in this chapter.  HE requested that several assets were assessed through wirelines/visualisations. Viewpoints for these wirelines/visualisations were discussed at a meeting with HE in November 2017. The visualisations are presented in volume 6, annex 5.7: Historic Environment Visualisations.
September 2017	Historic England – Section 42 Response	There are a number of other designated heritage assets in the vicinity of the proposed onshore HVDC converter/HVAC substation. The Report does not consider there would be a significant impact on these, but we consider that further assessment of this is required, and needs to be taken forward into the Environmental Statement. These are: <ul style="list-style-type: none"> <li>The medieval parish church of St Mary at Swardeston, Grade II*, lies on the far side of the village from the proposed onshore HVDC converter/HVAC substation. Additional assessment should be provided and, if there is a potential impact, wireframes and/or photomontages would be helpful; and</li> <li>The Grade II* registered landscape at Intwood Hall, nineteenth century park incorporating a sixteenth century garden is also identified in the report. We consider that further assessment would be needed for these assets.</li> </ul>	A screening assessment has been undertaken to identify where settings may be affected (volume 6; annex 5.4: Screening Assessment – Onshore HVDC Converter/HVAC Substation).  The effect of Hornsea Three on the Church of St Mary at Swardeston is assessed in section 5.11.  A visualisation for the Church of St Mary at Swardeston was not prepared because it was difficult to find a representative point from which the substation would be visible due to existing screening  Intwood Hall and associated Church of All Saints are also assessed, along with Intwood Hall registered park and garden. A visualisation is provided from Intwood Hall in volume 6, annex 5.7: Historic Environment Visualisations.
September 2017	Historic England – Section 42 Response	There are five Conservation Areas that have been identified in the area around the onshore HVDC converter/HVAC substation site: Easton, Keswick, Mulbarton, Old Lakenham, Shotesham and Trowse Newton. The report concludes that the impact on all would be minor adverse. However, we are concerned that the assessment for these assets is limited and we recommend a more thorough study is carried forward into the Environmental Statement. Where there are potential impacts, it would be helpful for these to be illustrated with wireframes and/or photomontages.	A screening assessment has been undertaken to identify where settings may be affected (volume 6; annex 5.4: Screening Assessment – Onshore HVDC Converter/HVAC Substation). Visualisations are provided from Eaton, Keswick Mill, Mulbarton, Old Lakenham, Shotesham and Trowse Newton (see volume 6, annex 5.7: Historic Environment Visualisations).
September 2017	Historic England – Section 42 Response	In relation to the onshore HVAC booster station, we have considered the impact of the booster station in relation to Salle Park, a Grade II*, registered landscape which lies to the south. The impact of the development is not considered significant in EIA terms. However, we have raised the issue of the cable route as this runs between Salle Park and the church, and given the report considers the relationship between the Park and the church as significant, we recommend that the significance of these options is reconsidered and that the impact of the proposed development is considered further.	The final alignment of the Hornsea Three onshore cable corridor has been subject to rerouting since the production of the PEIR and now passes 110 m from Salle Park at its nearest point, thus avoiding any effect on the relationship between the church and Salle Park.
September 2017	Historic England – Section 42 Response	The PEIR also does not consider the impact on other registered landscapes which are closer to the station. These include the landscapes at Mannington Hall, Wolterton and Barningham Park. The ZTV shows there would be visibility of the development in areas of these parks and this should be given further consideration in the Environmental Statement.	Visualisations are provided in volume 6, annex 5.5: Screening Assessment – Onshore HVAC Booster Station from Mannington Hall, Wolterton and Barningham Park.
September 2017	Historic England – Section 42 Response	Volume 3, Chapter 5: Historic Environment (terrestrial).  We note that under 5.7.1.10 the report says that 'Within and immediately surrounding Hornsea Three, it is unlikely that there would be any significant potential future changes in baseline conditions when the project is likely to become operational'. We are not convinced by this narrative and would want it recognised that this is a high potential for previously unidentified heritage assets with in the areas of the cable corridor that have not been surveyed.	Section 5.1.1 considers the future baseline. This is intended to indicate that no major changes to development or agricultural practices are envisaged in the area in the future.

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September 2017	Historic England – Section 42 Response	<p>Volume 3, Chapter 5: Historic Environment (terrestrial).</p> <p>Under 5.7.2.1 it states that ‘a comprehensive desk assessment has been undertaken using all available relevant sources (see volume 6, annex 5.1: Desk Based Assessment). On this basis there are no major data limitations relating to the desk study’. We note that this report does not include historic maps, LiDAR or aerial photographs and therefore is only a baseline assessment. The word comprehensive is misleading and should be removed.</p>	<p>Volume 6, annex 5.1: Desk Based Assessment has been updated on the basis of the final route. A historic map search has been undertaken and a review of aerial photographs and some LiDAR has also been undertaken.</p> <p>The historic maps used to inform the baseline are listed in Table 5.5. Aerial photography recording crop marks, and documented in the Norfolk Historic Environment Record have been used to inform volume 6, annex 5.6: Onshore Geophysical Survey Report, which identifies archaeological anomalies included in the historic environment baseline.</p> <p>To avoid confusion, the word “comprehensive” has been removed.</p>
September 2017	Historic England – Section 42 Response	<p>Volume 3, Chapter 5: Historic Environment (terrestrial).</p> <p>Table 5.9 the programme of post-consent archaeological work would commence with field investigation of the currently un-surveyed sections of the onshore cable route (including geophysical survey and trial trenching) and also trial trenching at the sites already subject to geophysical survey. Please note that only once these investigative surveys have been completed can the mitigation measures for the whole route be finalised. This needs to be fully articulated within the WSI and fully discussed with all relevant parties. No pre-commencement work should be undertaken until the mitigation has been fully approved and the WSI agreed.</p>	<p>Mitigation measures are presented in Table 5.13 and Table 5.14. An onshore WSI will be produced prior to the commencement of any consented works.</p>
September 2017	Historic England – Section 42 Response	<p>Volume 3, Chapter 5: Historic Environment (terrestrial).</p> <p>Section 5.10.2.3 sets out the expected impact that the development may have on heritage assets at the Hornsea Three landfall area as well as along the cable corridor. It is stated that the magnitude of the impacts are likely to be moderate (5.10.2.5) and of local rather than regional value (5.10.2.6). However, there is no mention of the potential to impact on deposits dating to the Pleistocene or Palaeolithic periods, such as the Cromer-Forest bed-Formation, which has been identified and investigated at various locations along the Norfolk coastline. These deposits have the potential to preserve evidence that is classed as being of national or even international importance, and if present should be classed as being of high sensitivity. Likewise Holocene deposits have also been recovered at Weybourne. Similar comments can be made for Section 5.12.2.2, 5.12.2.6 and Table 5.13. We would also like to note that any contemporary landscape features that exist adjacent to designated heritage assets such as Weybourne Priory, or Baconsthorpe Castle may be of an equivalent significance (see paragraph 139 of the NPPF), and would need to be considered appropriately.</p>	<p>The assessment has been updated on the final route of the Hornsea Three onshore cable corridor. The Palaeolithic period is considered in volume 6, annex 5.1: Desk Based Assessment and Holocene deposits are covered in volume 5, annex 9.1: Marine Archaeology Technical Report.</p> <p>Weybourne Priory and Baconsthorpe Castle are considered in section 5.7 of this chapter and volume 6, annex 5.1: Desk Based Assessment</p>
September 2017	Historic England – Section 42 Response	<p>Volume 3, Chapter 5: Historic Environment (terrestrial).</p> <p>We would also wish to challenge the statement in paragraph 5.10.2.3 which states that ‘there are a number of assets which have been identified through desk assessment and fieldwork; those which are significant and substantial are outlined in volume 6, annex 5.2: Fieldwalking Report and in Table 5.10 and assessed below’. The approach to desk assessment and field evaluation means that other assets of medium or higher importance are unlikely to be discovered during construction. Other assets of low/negligible importance may be discovered during construction. It is likely that substantial and significant deposits could be discovered within the unsurveyed sections of the corridor, particular sites relating to those periods where evidence is hard to identify through standard survey techniques such as Palaeolithic remains or those of Anglo-Saxon origin.</p>	<p>Noted – the statement in the PEIR chapter concerns probability and is broadly correct. The approach used to identify historic assets is robust and proportionate. The impact of any historic assets not identified during the establishment of the baseline and discovered during the construction of Hornsea Three will be dealt with appropriately through techniques agreed with the relevant consultees and outlined in the WSI produced prior to the commencement of any consented works.</p>
September 2017	Historic England – Section 42 Response	<p>Volume 3, Chapter 5: Historic Environment (terrestrial).</p> <p>We broadly accept the statement as set out in 5.10.2.32 that the impact on the designated assets would be on their setting. We have already set out our thoughts in relation to the individual assets and noted our concerns. We do not however consider it is possible at present to fully accept the level of impact as ‘minor’ and further analysis of the setting of the designated heritage assets would be needed to establish the full extent of the harm to the significance of these assets. We would support the use of mitigation to ameliorate the impact of the development on the setting of the designated heritage assets, however further analysis of the mitigation and if efficacy would need to be considered fully in the Environmental Statement.</p>	<p>Mitigation measures are presented in Table 5.13 and Table 5.14.</p>
September 2017	Historic England – Section 42 Response	<p>Volume 3, Chapter 5: Historic Environment (terrestrial).</p> <p>Sections 5.12.2.2 and 5.12.2.6, and Table 5.13 discuss the sensitivity of the receptors present at the Hornsea Three landfall area to any cumulative impacts. A consideration may need to be made for the presence of deposit dating to the Pleistocene, Palaeolithic or Holocene periods if they are present at the landfall area, as these deposits have the potential to preserve evidence of national, if not international significance.</p>	<p>The Hornsea Three onshore cable corridor is considered in this chapter. The Hornsea Three landfall area below MHWs is considered in volume 2, chapter 9: Marine Archaeology.</p>



Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered
September 2017	Historic England – Section 42 Response	<p>Volume 6, Annexe 5.1: Desk Based Assessment.</p> <p>Section 1.5.1.6 does not include a reference to the Pleistocene which should be added in considering the potential for deposits of this age to be identified in the area towards the Norfolk coastline and at the Hornsea Three landfall area, and as deposits of this age have been mentioned in Section 1.6.1.24.</p>	<p>The Hornsea Three onshore cable corridor is considered in this chapter. The Hornsea Three landfall area below MHWS is considered in volume 2, chapter 9: Marine Archaeology.</p>
December 2017	Norfolk County Council – Further Section 42 Response	<p>The Historic Environmental Planning team have the following additional comments on the route amendments:</p> <ul style="list-style-type: none"> <li>• Online Map 2: Bodham (TF 113 395 area). The amended route passes within 50m of an enclosure cropmark of possible Iron Age to Roman date. Consequently, there is a high potential for associated buried archaeological remains. The route to the north of this enclosure was included within the previous additional geophysical survey area, and this should be extended to include the newly amended route corridor.</li> <li>• Online Map 2: Bodham (TF 115 391 area). Previously unrecorded cropmarks, including boundary/enclosure ditches and a possible ring ditch, are visible in this field on 1999 Google Earth imagery. The presence of these features needs to be acknowledged, although pre-determination survey is not necessarily required.</li> <li>• Online Map 3: No additional comments.</li> <li>• Online Map 4: Oulton Street (TG 146 266). The extended accesses area includes the only surviving aircraft dispersal area associated with former Royal Air Force Oulton Airfield. The surviving Second World War concrete hard-standings should be retained and their form not altered. The same is true of the section of former runway intended for storage.</li> <li>• Online Map 5: No additional comments.</li> <li>• Online Map 6: No additional comments.</li> <li>• Online Map 7: Great Melton / Little Melton (TG 147 070 area). The revised route runs along the line of a parish boundary that is also recorded as a cropmark feature. The presence of a parish boundary may increase the potential for an early Anglo-Saxon cemetery to be present and this needs to be considered in the future mitigation works.</li> <li>• Online Map 8: Hethersett (TG 167 058 area). The amended route passes through an area of Roman finds and consequently there is potential for buried archaeological remains to be present. This will need to be considered in future mitigation works.</li> <li>• Online Map 8: Hethersett (TG 170 050 area). The amended route and proposed storage area will affect the former parkland associated with Thickthorn Hall. Although not a Registered Park and Garden, consideration of the impact on the parkland will be required at the pre-application stage.</li> <li>• Online Map 9: No additional comments.</li> </ul>	<p>Online Map 2 – Bodham (TF113 395): The comment is noted and mitigation proposed in Table 5.14.</p> <p>Online Map 2 – Bodham (TF115 391): The comment is noted and mitigation proposed in Table 5.14.</p> <p>Online Map 4: The comment is noted.</p> <p>Online Map 7: The comment is noted and mitigation proposed in Table 5.14.</p> <p>Online Map 8 – Hethersett (TG 167 058): The comment is noted and mitigation proposed in Table 5.14 .</p> <p>Online Map 8 – Hethersett (TG 170 050). See Table 5.9, below.</p>

## 5.6 Methodology to inform the baseline

### 5.6.1 Desktop study

5.6.1.1 Information on the historic environment within the Hornsea Three historic environment study areas (i.e. core historic environment study area and the historic environment study area) was collected through a detailed desktop review of existing studies and datasets. These are summarised in Table 5.5.

Table 5.5: Summary of key desktop sources.

Title	Source	Year	Author
Historic Environment Record	Norfolk County Council	2016/2017	Norfolk County Council
Records of the National Mapping Programme	Norfolk County Council	2016/2017	Historic England
Records held by the National Record of the Historic Environment	Historic England	2016/2017	Historic England
Historic Ordnance Survey mapping	Groundsure and the National Library of Scotland	2016	Ordnance Survey
Historic mapping (including tithe and enclosure maps)	Norfolk Record Office	2017	Various
1:50,000 scale geological mapping	British Geological Survey (BGS)	2016	BGS
Borehole records for locations in the historic environment study area	BGS	2016	BGS

### 5.6.2 Identification of designated sites

5.6.2.1 All designated sites within the Hornsea Three historic environment study area which could be affected by the construction, operation and maintenance, and decommissioning of Hornsea Three, were identified using the three-step process described below:

- Step 1: All designated sites of international, national and local importance within the Hornsea Three historic environment study area were identified using a number of sources. These were identified through consultation with stakeholders, in particular Historic England and the local planning authorities.
- Step 2: Information was compiled on the relevant historic environment features for each of these sites as follows: name, location and details of relevant features.
- Step 3: Using the above information and expert judgement, sites were included for further consideration if, for example:

- A designated site directly overlaps with Hornsea Three; and
- Sites and associated features were located within the potential Zone of Impact for impacts associated with Hornsea Three.

5.6.2.2 All designated assets identified from the desktop study and included in this assessment are listed in volume 6, annexes 5.1: Desk Based Assessment, 5.3: Site Gazetteer, 5.4: Screening Assessment – Onshore HVDC Converter/HVAC Substation and 5.5: Screening Assessment – Onshore HVAC Booster Station.

### 5.6.3 Site specific surveys

5.6.3.1 In order to inform the EIA, site-specific surveys were undertaken, as agreed with Historic England and NHES (see Table 5.4 and Consultation Report for further details). A summary of the surveys undertaken to date inform the historic environment baseline characterisation is outlined in Table 5.6.

Table 5.6: Summary of site-specific survey data.

Title	Extent of survey	Overview of survey	Survey contractor	Date	Reference to further information
Fieldwalking Survey	29 areas surveyed. Sites identified in volume 6, annex 5.2: Fieldwalking report.	A site visit and walkover survey of those parts of the onshore elements of Hornsea Three believed to have the most significant archaeological potential was undertaken in February 2017, to establish the presence of above ground archaeology, whether or not previously recorded and to verify the settings of the heritage assets surrounding Hornsea Three.	RPS	February 2017	Volume 6, annex 5.2: Fieldwalking Report
Geophysical Survey	20 areas surveyed, many of which correspond to cropmarks previously recorded from aerial photography, and documented in the NHER. Sites identified in volume 6, annex 5.6 Onshore Geophysical Survey Report.	Following consultation and agreement of survey scope with the County Archaeologist, a WSI geophysical survey of a number of areas within the Hornsea Three historic environment study area was undertaken in February and March 2017. A second campaign of geophysical survey was undertaken in October 2017 to target areas from the previous survey which could not be accessed, as well as new areas identified as a result of the refinement of the onshore cable corridor. A report on the findings of the geophysical survey is outlined in section 5.7. Both the County Archaeologist and Historic England have been kept informed of the results to date.	Oxford Archaeology	February/March 2017 and October 2017	Volume 6, annex 5.6: Onshore Geophysical Survey Report
Visualisations	15 areas surveyed, 14 of which became photographic viewpoints (at Swardeston it was very difficult to find a representative point from which the substation would be visible).	Following consultation, in particular Section 42 consultation and a subsequent meeting with Historic England in November 2017, the possible impacts of Hornsea Three on the settings of a number of heritage assets were assessed through site visits, viewpoint photography and the production of wirelines and/or visualisations.	RPS and LDA Design	December 2017	Volume 6, annex 5.7: Historic Environment Visualisations



## 5.7 Baseline environment

### 5.7.1 Designated Assets

5.7.1.1 There are a number of designated assets within the Hornsea Three historic environment study area, however none are located within the areas that will be occupied by the onshore elements of Hornsea Three.

5.7.1.2 A detailed baseline description is provided in volume 6, annex 5.1: Desk Based Assessment and is briefly summarised below. The locations of the heritage assets described below are also presented in Figure 1 of volume 6, annex 5.1: Desk Based Assessment.

#### **World Heritage Sites**

5.7.1.3 There are no World Heritage Sites within the Hornsea Three historic environment study area, or within the county of Norfolk.

#### **Scheduled Monuments**

5.7.1.4 There are nine (SMs) within the Hornsea Three historic environment study area, whose settings may be affected by the proposals (see volume 6, annex 5.1: Desk Based Assessment for detailed description). The title and list entry number of these SMs are listed below:

- Two round barrows near Norwich Lodge, Ketteringham Hall (list entry number 1002888), located c. 517 m from the storage area at its nearest point;
- Round barrow south east of the Lodges (list entry number 1003623), located c. 468 m from the storage area at its nearest point;
- Two tumuli in Big Wood (list entry number 1003977), located c. 845 m northeast of the onshore cable corridor at its nearest point;
- Oval barrow in Bodham Wood, 600 m east-south-east of Warren Farm (list entry number 1013567), located c. 203 m north of the onshore cable corridor at its nearest point;
- Bowl barrow on the north side of Muckleburgh Hill (list entry number 1013584), located c. 206 m from the construction access at its nearest point;
- Bowl barrow on Kelling Heath, south of Holgate Hill (list entry number 1013585), located c. 500 m north of the onshore cable corridor at its nearest point;
- The Roman town of Venta Icenorum and associated prehistoric and medieval remains (list entry number 1013873 and 1021463), located c. 154 m from the access at its nearest point;
- Baconsthorpe Castle moated site with fortified house, gatehouse, courtyards and formal gardens (list entry number 1013093), located c. 342 m east of the onshore cable corridor at its nearest point; and
- Weybourne priory (list entry number 1013096), located c. 588 m from the access at its nearest point.

#### **Listed Buildings**

5.7.1.5 There is a total of 159 listed buildings within the Hornsea Three historic environment study area. Of these, five are listed at Grade I, 25 at Grade II\* and 129 at Grade II (see volume 6, annex 5.1: Desk Based Assessment).

5.7.1.6 Of the above Grade I listed buildings, the closest are the Church of All Saints at Weston Longville (list entry number 1372689) and the Church of St Peter at Easton (list entry number 1305921) are located approximately 300 m to the west and 140 m to the east of the Hornsea Three onshore cable corridor respectively. In addition, the Church of St Peter and Paul at Heydon (list entry number 1309337) is located immediately on the western edge of and adjacent to the registered park and garden at Heydon Hall, itself located some 570 m east of the Hornsea Three onshore cable corridor.

#### **Registered Parks and Gardens**

5.7.1.7 There are four registered parks and gardens within the Hornsea Three historic environment study area. These comprise:

- Salle Park (registered at Grade II, list entry number 1001016), located c. 16 m from the closest storage area;
- Intwood Hall (registered at Grade II\*, list entry number 1000320), located c. 0 m from the onshore cable corridor at its nearest point;
- Heydon Hall (registered at Grade II\*, list entry number 1000187), located c. 570 m from the closest storage area at its nearest point; and
- Voewood (registered at Grade II\*, list entry number 1001428), located c. 245 m from the closest construction access at its nearest point.

#### **Registered Battlefields**

5.7.1.8 There are no Registered Battlefields within the Hornsea Three historic environment study area, or within the county of Norfolk.

#### **Conservation Areas**

5.7.1.9 There are seven Conservation Areas within the Hornsea Three historic environment study area. They are:

- Weybourne located some 530 m west of the onshore cable corridor at its nearest point;
- Kelling, located immediately adjacent to the onshore cable corridor at its nearest point;
- Hempstead, located some 230 m west of the onshore cable corridor at its nearest point, with a small part of the Glaven Valley conservation area to its west;
- Baconsthorpe, located some 350 m east of the onshore cable corridor at its nearest point;
- Blickling, located some 600 m east of the main construction compound at its nearest point;
- Heydon located some 250 m east of the onshore cable corridor at its nearest point; and
- Reepham, located some 350 m west of the onshore cable corridor at its nearest point.

5.7.1.10 These Conservation Areas contain many of the listed buildings in the area.

## 5.7.2 Undesignated Assets

5.7.2.1 The early landscape within the Hornsea Three historic environment study areas, is likely to have been significantly different to the modern version. At the north of the Hornsea Three onshore cable corridor, there has been significant coastal erosion and it must be assumed that the early coastline was further north. The rivers were likely to have been wider and more navigable. The landscape was gradually modified through human activity, particularly during the medieval and post medieval periods. Undesignated assets are described in detail in volume 6, annex 5.1: Desk Based Assessment.

## 5.7.3 Onshore Geophysical Survey Results

5.7.3.1 The onshore geophysical survey was undertaken in the form of a detailed magnetometer survey over approximately 145 ha of mixed arable and pastoral farmland. The survey targeted 20 areas between Weybourne (TG 1181 4319) in the north to Swainsthorpe (TG 2186 0194) in the south. These areas were selected following a walkover survey and consultation with the Norfolk County Council Archaeologist (see volume 6, annex 5.2: Fieldwalking Report).

5.7.3.2 Archaeological anomalies were identified across 12 of the 20 areas surveyed, many of which correspond to cropmarks previously recorded from aerial photography, and documented in the NHER. The location of these area surveyed and the results of the survey are shown in volume 6, annex 5.6: Onshore Geophysical Survey.

## 5.7.4 Baseline Summary

5.7.4.1 Table 5.7 presents the sensitivity of historic assets (i.e. heritage assets (primarily designated assets)) and archaeological assets (undesignated assets) identified in the Hornsea Three historic environment study areas based on the criteria in Table 5.10.

Table 5.7: Sensitivity of heritage and archaeological assets within the Hornsea Three historic environment study areas.

Historic Asset	Covering Legislation and Guidance	Level of Sensitivity
<b>Heritage Assets</b>		
Two round barrows near Norwich Lodge, Ketteringham Hall (list entry number 1002888)Ancient Monuments and Archaeological Areas Act 1979HighRound barrow south east of the Lodges (list entry number 1003623)	Ancient Monuments and Archaeological Areas Act 1979	High
Two tumuli in Big Wood (list entry number 1003977)	Ancient Monuments and Archaeological Areas Act 1979	High
Oval barrow in Bodham Wood, 600 m east-south-east of Warren Farm (list entry number 1013567)	Ancient Monuments and Archaeological Areas Act 1979	High
Bowl barrow on the north side of Muckleburgh Hill (list entry number 1013584)	Ancient Monuments and Archaeological Areas Act 1979	High
Bowl barrow on Kelling Heath, south of Holgate Hill (list entry number 1013585)	Ancient Monuments and Archaeological Areas Act 1979	High
The Roman town of Venta Icenorum and associated prehistoric and medieval remains (list entry number 1013873 and 1021463)	Ancient Monuments and Archaeological Areas Act 1979	High
Baconsthorpe Castle moated site with fortified house, gatehouse, courtyards and formal gardens (list entry number 1013093)	Ancient Monuments and Archaeological Areas Act 1979	High
Weybourne priory (list entry number 1013096)	Ancient Monuments and Archaeological Areas Act 1979	High
5 Grade I listed buildings	Planning (Listed Buildings and Conservation Areas) Act 1990	High
22 Grade II* listed buildings	Planning (Listed Buildings and Conservation Areas) Act 1990 Conservation Area	High
120 at Grade II listed buildings	Planning (Listed Buildings and Conservation Areas) Act 1990 Conservation Area	Medium
Heydon Hall Grade II* Registered Park and Garden (list entry number 1000187)	NPPF and NPS EN-1	High
Intwood Hall Grade II* Registered Park and Garden (list entry number 1000320)	NPPF and NPS EN-1	High
Voewood Grade II* Registered Park and Garden (list entry number 1001428)	NPPF and NPS EN-1	High
Salle Park Registered Park and Garden (Grade II, list entry number 1001016)	NPPF and NPS EN-1	Medium
5 Conservation Areas	Planning (Listed Buildings and Conservation Areas) Act 1990 Conservation Area	Medium
Undesignated Assets	n/a	Low
<b>Archaeological Assets</b>		
Bronze Age ring ditches (Survey Areas GS08, GS12, GS13, GS 17)	n/a	Low to medium
Roman Roads (Survey Areas GS10, GS18)	n/a	Low
Possible medieval building (Survey Area GS02)	n/a	Low to medium
Medieval agricultural remains (Survey Area GS16)	n/a	Low
Possible former churchyard boundary at Salle Church (Survey Area GS09)	n/a	Low



### 5.7.5 Future baseline scenario

- 5.7.5.1 The Infrastructure Planning (EIA) Regulations 2017 requires that “*an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge*” is included within the Environmental Statement.
- 5.7.5.2 No significant changes to the baseline within the Hornsea Three historic environment study areas are anticipated. It is possible that land within the Hornsea Three historic environment study areas may be allocated for future development but such additional future land requirements are not known at this point in time. Any future development would have the potential to change the future baseline by the removal of or damage to archaeological and heritage assets or changing the setting of heritage assets.

### 5.7.6 Data limitations

- 5.7.6.1 A desk assessment has been undertaken using all available relevant sources (see volume 6, annex 5.1: Desk Based Assessment). There is the potential that these sources of information do not identify all the archaeology that is present, however the information provides the context of the historic environment baseline and informs where further investigation may be required. On this basis there are no major data limitations relating to the desk study which would affect the outcomes and conclusions of the assessment presented in this chapter. Notwithstanding this, a chance finds procedure will be implemented during construction to identify any unknown assets.
- 5.7.6.2 Site visits were undertaken where potential impacts on heritage assets/sites were identified. Where assets/sites could not be viewed from publicly accessible locations (e.g. public rights of way) permission was sought from the landowner before entering private land. In some cases, access was not granted (see volume 6, annex 5.2: Fieldwalking Report). Notwithstanding this, it is considered that sufficient baseline information was collected relevant to these sites during the site visit undertaken in September 2016, the walkover survey carried out in February 2017, further site visits in December 2017 and aerial photography. Therefore, there are no limitations which affect the outcomes and conclusions of the assessment presented in this chapter.

## 5.8 Key parameters for assessment

### 5.8.1 Maximum design scenario

- 5.8.1.1 The maximum design scenarios identified in Table 5.8 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 volume 1, chapter 3: Project Description. Effects of greater significance are not predicted to arise should any other development scenario, based on details within the project Design Envelope (e.g. reduced building heights), to that assessed here be taken forward in the final design scheme.

### 5.8.2 Impacts scoped out of the assessment

- 5.8.2.1 On the basis of the baseline environment and the project description outlined in volume 1, chapter 3: Project Description, a number of impacts are proposed to be scoped out of the assessment for historic environment. These impacts are outlined, together with a justification for scoping them out, in Table 5.9.

Table 5.8: Maximum design scenario considered for the assessment of potential impacts on historic environment.

Potential impact	Maximum design scenario	Justification
<b>Construction phase</b>		
Construction of the onshore elements of Hornsea (including any stripping required for storage areas, compounds and accesses) could result in permanent loss of, or damage to, buried archaeological (undesigned) remains.	<p><u>Hornsea Three landfall area</u></p> <p>Open cut at the Hornsea Three landfall area including:</p> <ul style="list-style-type: none"> <li>Up to 42,000 m<sup>2</sup> compound area and up to 1,500 m<sup>2</sup> from transition joint bays (based on 250 m<sup>2</sup> x 6);</li> <li>Up to six cables;</li> <li>Corridor width up to 240 m wide (comprising six cables (with installation area up to 15 m) plus up to 20 m separation between each cable); and</li> </ul> <p>The maximum duration over which works could occur at the landfall would be 5.5 years (assuming a three-year gap between the two phases).</p>	<p>The maximum design scenario for impacts on buried archaeological sites are represented by the HVAC transmission option as this will involve the greatest number of cable trenches and may require the construction of the onshore HVAC booster station. This will lead to the largest area of land-take required for the construction.</p>
Construction works at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could potentially result in temporary impacts on the settings of heritage (designated) assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.		<p>The dimensions of the main buildings at the onshore HVDC converter/HVAC substation represents the maximum design scenario in terms of impacts on settings of heritage assets as this represents the maximum envelope in which buildings could be present.</p> <p>The maximum design scenario in terms of impacts on the settings of heritage assets during construction is represented by the maximum onshore construction period of up to five years (onshore HVAC booster station) and up to six years (onshore HVDC converter/HVAC substation) within a total construction period of eight years as this will be the maximum of the duration of the works.</p>
Construction works at Hornsea Three landfall area, along the onshore cable corridor (including compounds, storage area and accesses) could result in temporary impacts on the settings of heritage (designated) assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.	<p><u>Hornsea onshore cable corridor</u></p> <ul style="list-style-type: none"> <li>Up to 1,650,000 m<sup>2</sup> (5 m x 55,000 m x 6) from installation of up to six cable trenches;</li> <li>On average 0.6 m stabilised backfill in each 2 m deep trench;</li> <li>Up to 99,000 m<sup>2</sup> from jointing bays (based on 440 jointing bays (each jointing bay is 9 m x 25 m));</li> <li>Up to 3,960 m<sup>2</sup> from link boxes (based on 440 link boxes (each link box: is 3 m x 3 m)). Link boxes are permanent sub surface structures;</li> <li>Up to 396,000 m<sup>2</sup> from installation of temporary haul road/accesses (6 m x 66,000 m per phase);</li> <li>Up to 120 HDD locations per phase (up to 105 minor HDDs and 15 major HDDs per phase), up to 54,000 m<sup>2</sup> from major HDD compounds (based on 15 HDD compounds (each compound is 60 m x 60 m);</li> <li>Up to five secondary compounds; Up to 55 storage areas; and</li> <li>The haul road would be surfaced with aggregate on geotextile and would be removed at the end of each construction phase.</li> </ul> <p>The maximum duration over which construction could occur would be 5.5 years incorporating two phases (assuming a three-year gap between the two phases). The work in each phase is expected to progress along the Hornsea Three onshore cable corridor with a typical active construction works duration of three months at any particular location.</p>	<p>The maximum design scenario in terms of impacts on the settings of heritage assets during construction is represented by the maximum onshore construction period of up to eight years as this will be the maximum of the duration of the works.</p> <p>Impacts on the settings of heritage assets during construction will be at their maximum where the duration of the works is extended.</p>
Construction works at the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.	<p><u>Onshore HVAC booster station</u></p> <p>Up to 30,407 m<sup>2</sup> for permanent area of site plus a temporary works area up to 25,000 m<sup>2</sup>.</p> <p>Maximum building footprint of 9,000 m<sup>2</sup> (based on single building scenario (120 m length and 75 m width) and height up to 12.5 m).</p> <p>Up to 30,000 m<sup>3</sup> excavated for basement (based on 5 m deep and area of 6,000 m<sup>2</sup>).</p> <p>The maximum duration of construction for the onshore HVAC booster station is two years, this therefore means that the maximum duration over which construction could occur would be five years incorporating two phases (assuming a three-year gap with no active construction activity between the two phases).</p>	<p>The dimensions of the main buildings at the onshore HVDC converter/HVAC substation represents the maximum design scenario in terms of impacts on the overall historic landscape as this represents the maximum envelope in which buildings could be present.</p> <p>The maximum design scenario in terms of impacts on the overall historic landscape during construction is represented by the maximum onshore construction period of up to five years (onshore HVAC booster station) and up to six years (onshore HVDC converter/HVAC substation) within a total construction period of eight years as this will be the maximum of the duration of the works.</p>

Potential impact	Maximum design scenario	Justification
	<p><u>Onshore HVDC converter/HVAC substation</u></p> <p>Up to 149,302 m<sup>2</sup> for permanent area of site (including an area which may be used for landscaping) plus a temporary works area of 91,000 m<sup>2</sup>.</p> <p>Maximum building dimensions: up to 220 m length, 75 m width and 25 m height for main buildings</p> <p>The maximum duration of construction for the onshore HVDC converter/HVAC substation is three years, therefore the maximum duration over which construction could occur would be six years incorporating two phases (assuming a three-year gap with between the two phases).</p> <p><u>Construction programme</u></p> <p>Total duration of onshore construction programme is up to eight years long with up to two phases with a maximum gap of three years between the construction of the two phases.</p>	
<p>Construction works at Hornsea Three landfall area, along the onshore cable corridor (including compounds, storage areas and side accesses) could result in temporary impacts on the overall historic landscape.</p>	<p><u>Hornsea Three landfall area</u></p> <p>Open cut at the Hornsea Three landfall area including:</p> <ul style="list-style-type: none"> <li>• Up to 60,000 m<sup>2</sup> working area including compound and up to 1,500 m<sup>2</sup> from transition joint bays (based on 250 m<sup>2</sup> x 6);</li> <li>• Up to six cables;</li> <li>• Corridor width up to 240 m wide (comprising six cables (with installation area up to 15 m) plus up to 20 m separation between each cable); and</li> </ul> <p>The maximum duration over which works could occur at the landfall would be 5.5 years (assuming a three-year gap between the two phases).</p> <p><u>Hornsea onshore cable corridor</u></p> <ul style="list-style-type: none"> <li>• Up to 1,650,000 m<sup>2</sup> (5 m x 55,000 m x 6) from installation of up to six cable trenches;</li> <li>• On average 0.6 m stabilised backfill in each 2 m deep trench;</li> <li>• Up to 99,000 m<sup>2</sup> from jointing bays (based on 440 jointing bays (each jointing bay is 9 m x 25 m));</li> <li>• Up to 3,960 m<sup>2</sup> from link boxes (based on 440 link boxes (each link box: is 3 m x 3 m)). Link boxes are permanent sub surface structures;</li> <li>• Up to 396,000 m<sup>2</sup> from installation of temporary haul road/accesses (6 m x 66,000 m per phase);</li> <li>• Up to 120 HDD locations per phase (up to 105 minor HDDs and 15 major HDDs per phase), up to 54,000 m<sup>2</sup> from major HDD compounds (based on 15 HDD compounds (each compound is 60 m x 60 m));</li> <li>• Up to five secondary compounds; Up to 55 storage areas; and</li> <li>• The haul road would be surfaced with aggregate on geotextile and would be removed at the end of each construction phase.</li> </ul> <p>The maximum duration over which construction could occur would be 5.5 years incorporating two phases (assuming a three-year gap between the two phases). The work in each phase is expected to progress along the Hornsea Three onshore cable corridor with a typical active construction works duration of three months at any particular location.</p>	<p>The maximum design scenario in terms of impacts on the overall historic landscape during construction is represented by the maximum onshore construction period of up to eight years as this will be the maximum of the duration of the works.</p>



Potential impact	Maximum design scenario	Justification
<b>Operation and Maintenance phase</b>		
The operation and maintenance of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in long-term reversible impacts on the settings of heritage (designated) assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.	Onshore HVAC booster station maximum building dimensions: 120 m long x 75 m wide x 12.5 m high. Onshore HVDC converter/HVAC substation maximum building dimensions: 220 m long x 75 m wide x 25 m high for main buildings.	The HVAC transmission option presents the maximum design scenario as this may require the operation of an onshore HVAC booster station (which would not be required in the HVDC transmission option) and therefore impacts on the settings of heritage assets would be greater. The dimensions of the main buildings at the onshore HVDC converter/HVAC substation represents the maximum design scenario in terms of impacts on settings of heritage assets as this represents the maximum envelope in which buildings could be present
The operation and maintenance of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in long-term impacts on the overall historic landscape.	Onshore HVAC booster station maximum building dimensions: 120 m long x 75 m wide x 12.5 m high. Onshore HVDC converter/HVAC substation maximum building dimensions: 220 m long x 75 m wide x 25 m high for main buildings.	The HVAC transmission option presents the maximum design scenario as this may require the operation of an onshore HVAC booster station (which would not be required in the HVDC transmission option) and therefore impacts on the overall historic landscape would be greater and therefore impacts on the settings of heritage assets would be greater. The dimensions of the main buildings at the onshore HVDC converter/HVAC substation represents the maximum design scenario in terms of impacts on the overall historic landscape as this represents the maximum envelope in which buildings could be present
<b>Decommissioning phase</b>		
Decommissioning works at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the settings of heritage (designated) assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.	Removal of the following (above and below ground): <u>Onshore HVAC booster station</u> Maximum area of site is 30,407 m <sup>2</sup> <u>Onshore HVDC converter/HVAC substation</u> Maximum area of site is assumed at 149,302 m <sup>2</sup> (excluding area which may be used for landscaping)	The maximum design scenario for disturbance during decommissioning is the removal of the onshore HVDC converter/HVAC substation and onshore HVAC booster station as this presents the greatest disturbance. The maximum design scenario in terms of impacts on the settings of heritage assets during decommissioning is represented by the maximum onshore decommissioning period (which is similar to the duration of the construction period) as this will be the maximum of the duration of the works.
Decommissioning works at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.	<u>Decommissioning programme</u> Will be similar to the construction programme.	The maximum design scenario in terms of impacts on the overall historic landscape during decommissioning is represented by the maximum onshore decommissioning period (which is similar to the duration of the construction period) as this will be the maximum of the duration of the works.

Table 5.9: Impacts scoped out of the assessment for historic environment.

Potential impact	Justification
<b>Construction phase</b>	
Construction of the onshore elements of Hornsea Three (including any stripping required for storage areas, compounds and accesses) could result in permanent impacts to the settings of archaeological (undesigned) assets.	Any effect resulting from changes within the settings of undesigned assets would be temporary (i.e. would occur only during cable-laying operations in the area) and are fully reversible. For this reason, any effect on the settings of these undesigned assets is unlikely to be significant and has not been assessed in detail. These assets include the parkland at Thickthorn Hall, referred to in consultation with Norfolk County Council and detailed at Table 5.4. No undesigned assets have been identified where there is likely to be an impact on their setting from the development of the onshore HVAC booster station and/or onshore HVDC converter/HVAC substation resulting in a significant overall effect and no further assessment is warranted.
Construction of the onshore elements of Hornsea (including any stripping required for storage areas, compounds and accesses) could result in direct permanent loss of, or damage to designated heritage assets (including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens) .	The desktop study did not identify any heritage assets within the footprint of the onshore elements of Hornsea Three (and compounds, storage areas and accesses) and therefore, there would be no direct impacts on these assets from permanent loss or damage.
Construction works at Hornsea Three offshore area could result in temporary loss of or damage to the settings of onshore designated or undesigned heritage assets.	Given the geographical separation, there would be no physical impact on onshore designated or undesigned heritage assets caused by offshore infrastructure and any impact would be on settings. Due to the temporary nature of the construction work, any impacts on heritage assets would not be permanent, and therefore are unlikely to be significant and have not been assessed in detail.
<b>Operation and maintenance phase</b>	
Operation of the offshore HVAC booster station(s) could result in permanent loss of or damage to the settings of onshore heritage (designated) assets.	Impacts on onshore heritage assets caused by offshore infrastructure of Hornsea Three have been considered. These include effects on the registered park and garden at Sheringham Hall (list entry number 1001020). There would be no physical impact on onshore heritage assets caused by offshore infrastructure and any impact would be on settings of heritage assets. The turbines would not be visible from the onshore area. The offshore HVAC booster station(s) may be visible from the onshore area but would be a minimum distance of 35.3 km from the nearest point on the shoreline. Volume 5, annex 4.7 – Effects of the Offshore HVAC Booster Station contains two visualisations from viewpoints located on relatively high ground allowing panoramic views offshore and where the coast lies close to the offshore HVAC booster station search area. These two locations have been selected to illustrate the maximum potential visibility and effects for land based receptors. It is unlikely that any effects on these assets would be significant and the issue has not been assessed in detail.
Operation and maintenance of the onshore cable corridor could result in long-term impacts on the settings of heritage assets and the overall historic landscape.	The onshore cable corridor will be buried underground and there are no routine operation and maintenance activities that would cause an impact to the setting of heritage assets or the overall historic landscape.
<b>Decommissioning phase</b>	
Decommissioning of the Hornsea Three landfall could result in permanent loss of or damage to the setting of archaeological (undesigned) assets.	Any effect resulting from changes within the settings of undesigned assets would be temporary and are fully reversible. For this reason, any effect on the settings of these undesigned assets is unlikely to be significant and has not been assessed in detail.
Decommissioning of the onshore cable corridor could result in temporary impacts on the settings of heritage assets or the permanent loss or damage to archaeological assets.	The decommissioning of the onshore cable corridor will comprise the cutting and sealing of the cables and the removal (and making safe) of the surface features of link boxes. The effect on the settings of heritage assets and archaeological assets is unlikely to be significant.

## 5.9 Impact assessment methodology

### 5.9.1 Overview

5.9.1.1 The historic environment EIA has followed the methodology set out in volume 1, chapter 5: Environmental Impact Assessment Methodology. Specific to the historic environment EIA, the following guidance documents have also been considered:

- Scheduled Monuments and Nationally Important but non-scheduled Monuments (Department of Culture, Media and Sport, 2013);
- Code of Conduct (Chartered Institute for Archaeologists, 2014);
- Design Manual for Roads and Bridges, Volume 11, Section 3, Part 2 (HA 208/7) (Highways Agency, 2007);
- Standard and Guidance for Historic Environment Desk Based Assessment (Chartered Institute for Archaeologists, 2014);
- Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (Drury, P. and McPherson, 2008); and
- Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (Historic England, 2015).

5.9.1.2 In addition, the historic environment EIA has considered the legislative framework as defined by:

- The Ancient Monuments and Archaeological Area Act (1979); and
- The Planning (Listed Buildings and Conservation Areas Act (1990)).

#### Setting

5.9.1.3 The Historic England guidance “*Historic Environment Good Practice Advice*” in “*Planning Note 3: The Settings of Heritage Assets*” (Historic England, 2015) provides specific advice on the definition of setting and the general principles of setting in the context of strategic planning and development control.

5.9.1.4 Paragraph 2 advises applicants that the information required in support of applications for planning permission and listed building consents should be no more than is necessary to reach an informed decision, and those activities to conserve or invest need to be proportionate to the significance of the heritage assets affected and the impact on the significance of those heritage assets.

5.9.1.5 Paragraph 12 provides the following broad approach to assessment, undertaken as a series of steps that apply proportionately to complex or more straightforward cases:

- Step 1: identify which heritage assets and their settings are affected;
- Step 2: assess whether, how and to what degree these settings make a contribution to the significance of the heritage asset(s);

- Step 3: assess the effects of the proposed development, whether beneficial or harmful, on that significance;
- Step 4: explore the way to maximise enhancement and avoid or minimise harm; and
- Step 5: make and document the decision and monitor outcomes.

5.9.1.6 Although assessments of changes within the settings of heritage assets can involve non-visual issues such as noise, it is more often the visual aspects of a development that form the major part of the assessment. To this end the ZTV is a useful tool in assessing in general terms the assets which are likely to be impacted by Hornsea Three (Historic England, 2015: paragraph 14). The ZTV figures are provided in volume 3, chapter 4: Landscape and Visual Resources.

5.9.1.7 An assessment of visual impacts on the heritage assets and their settings needs to take into account a wide variety of factors. These include the location of the asset within the physical landscape, its relationship with contemporary and non-contemporary features within that landscape and the location, size and character of the project in relation to these factors. The assessment then needs to balance the impact of these various considerations on the basis of informed professional judgment.

5.9.1.8 An assessment of the visual impacts of Hornsea Three has been undertaken in accordance with the procedures expressed in the Guidelines for Landscape and Visual Impact Assessment (The Landscape Institute and the Institute of Environmental Management and Assessment, 2013). The findings of the landscape and visual assessment are presented in chapter 4: Landscape and Visual Resources. These findings have been taken into account in considering the impact on the setting of heritage assets in this chapter. Where there is the potential for changes within the setting of heritage assets due to noise or other impacts, these have been considered within this chapter using appropriate procedures and professional judgement.

5.9.1.9 There should also be consideration of the sensitivity to change of the setting of a heritage asset. This requires examination of the current setting with regard to identifying elements that contribute to the significance of the asset, elements that make a neutral contribution to the significance of the asset and elements that make a negative contribution (i.e. detract from) the significance of the asset.

### 5.9.2 Impact assessment criteria

#### Sensitivity of the receptors

5.9.2.1 In order to reach an understanding of the likely effect that a project may have on a heritage asset, it is necessary to understand the significance (referred to in this chapter as sensitivity and as importance at paragraph 5.8.8 of NPS EN-1 and at paragraph 128 of NPPF) of that asset.

5.9.2.2 Establishing the sensitivity of a heritage asset is principally a means of identifying the extent to which the asset should be valued. For example, whether is it important at a national level or at a local level.



5.9.2.3 Sensitivity can primarily be understood through examination of why a structure, site or area should be considered as a heritage asset. In the NPPF the significance of an asset is defined as:

*“The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset’s physical presence, but also from its setting.”* (DCLG, 2012; Annex 2 and cross-referenced in National Policy Statement EN-1).

5.9.2.4 These levels of interest broadly tie in with previous guidance from Historic England expressed in the document Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (Drury and McPherson, 2008). This provides guidance on understanding heritage values and includes a section which advises how to assess heritage significance.

5.9.2.5 According to the guidance published by English Heritage (now replaced by Historic England) (Drury and McPherson, 2008), heritage values fall into four inter-related groups:

- Evidential value – the potential of a place to yield evidence about past human activity;
- Historical value – this derives from the ways in which past people, events and aspects of life can be connected through a place to the present. This value tends to be illustrative (providing insights into past communities and their activities) or associative (association with a notable family, person, event or movement);
- Aesthetic value – this derives from the ways in which people draw sensory and intellectual stimulation from a place; and
- Communal value – this derives from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory.

5.9.2.6 The most recent guidance from any national agency regarding cultural heritage and EIA is from the Highways Agency and is expressed in Guidance Note 208/07 that now forms part of the Design Manual for Roads and Bridges, Volume 11, Section 3, Part 2 (HA 208/7) (Highways Agency, 2007).

#### Assessment of Asset Sensitivity - Archaeological Assets

5.9.2.7 There are no national government guidelines for evaluating the sensitivity of heritage assets. For archaeological assets, the Department of Culture, Media and Sport (DCMS) has adopted a series of recommended (i.e. non-statutory) criteria for use in the determination of national importance when scheduling ancient monuments. These are expressed in the document *“Scheduled Monuments and Nationally Important but non-scheduled Monuments”* (DCMS, 2013). The criteria include period, rarity, documentation/finds, group value, survival/condition, fragility/vulnerability, diversity and potential, and can be used as a basis for the assessment of the importance of historic remains and archaeological sites. However, the document also states that these principles *“should not be regarded as definitive; but as indicators which contribute to a wider judgement based on individual circumstances”*.

5.9.2.8 The criteria described above may also be used as a basis for the assessment of the importance of archaeological assets of less than national importance. However, the categories of regional and district/local importance are less clearly established than that of national and implicitly relate to local, district and regional priorities, which themselves vary within and between regions. Where available, local, district and regional research agenda, and local or structure plans may assist in this process.

5.9.2.9 It is noted that a high degree of professional judgement is required in the identification of sensitivity for archaeological assets and this approach has been applied to this assessment, guided by acknowledged standards, designations and priorities. It is also important to recognise that buried archaeological remains may not always be well-understood at the time of assessment and can therefore be of uncertain sensitivity.

#### Assessment of Asset Sensitivity - Historic Buildings

5.9.2.10 For historic buildings, assessment of sensitivity is usually based on the designations used in the Listed Building process. Where historic buildings are not listed, or where the listing Grade may be in need of updating, professional judgement has been used.

5.9.2.11 The criteria used in establishing the sensitivity of historic buildings within the Listed Building process include architectural interest, historic interest, close historic association (with nationally important people or events) and group value. Age and rarity are also taken into account. In general (where surviving in original or near-original condition), all buildings of pre-1700 date are listed, most of 1700 to 1840 date are listed, those of 1840 to 1914 date are more selectively listed, and thereafter even more selectively. Specific criteria have been developed for buildings of 20th century date. Further details are provided in the document Principles of Selection for Listed Buildings (DCMS, 2010). At a local level, buildings may be valued for their association with local events and people or for their role in the community.

#### Assessment of Asset Sensitivity - Historic Landscapes

5.9.2.12 The sub-topic of Historic Landscape is recognised as having significant overlaps with other topics, such as landscape and townscape and therefore a multi-disciplinary approach to assessment has been adopted. This is to avoid double counting and duplication of effort. There are also significant overlaps with the other cultural heritage sub-topics of archaeological remains and historic buildings. The elements that are considered within those two sub-topics can make significant contributions to the historic landscape. This latter sub-topic has therefore concentrated on the overall Historic Landscape Character (HLC) and its value, rather than the individual elements within it.

5.9.2.13 All landscapes have some level of historic significance, as all of the present appearance of the urban and rural parts of England is the result of human or human-influenced activities overlain on the physical parameters of climate, geography and geology.

5.9.2.14 A number of designations can apply to historic landscapes, including World Heritage Sites (inscribed for their historic landscape value), Registered Parks and Gardens, Registered Battlefields and Conservation Areas. Some local plans include locally designated Historic Landscape Areas and Historic Parks and Gardens (or similar).

5.9.2.15 A model has been produced by the Council for British Archaeology (Rippon, 2004), whereby the historic landscape can be divided up into units that are scaled from smallest to largest, as follows:

- Elements - individual features such as earthworks, structures, hedges, woods etc.;
- Parcels - elements combined to produce, for example farmsteads or fields;
- Components - larger agglomerations of parcels, such as dispersed settlements or straight-sided field systems;
- Types - distinctive and repeated combinations of components defining generic historic landscapes such as ancient woodlands or parliamentary enclosure;
- Zones - characteristic combinations of types, such as Anciently Enclosed Land or Moorland and Rough Grazing;
- Sub-regions - distinguished on the basis of their unique combination of interrelated components, types and zones; and
- Regions - areas sharing an overall consistency over large geographical tracts.

5.9.2.16 The model described above can be used as the principal part of the overall assessment usually known as HLC. However, although HLC has been undertaken for much of England, there is no specific guidance or advice regarding the attribution sensitivity to identified HLC types.

**Sensitivity criteria**

5.9.2.17 The criteria for defining sensitivity in this chapter are outlined in Table 5.10.

**Table 5.10: Definition of terms relating to the sensitivity of the receptor.**

Sensitivity	Definition used in this chapter
Very High	World Heritage Sites, including standing buildings described as being of universal importance as World Heritage Sites and World Heritage Sites described for their historic landscape qualities. Assets of acknowledged international importance. Assets that can contribute significantly to acknowledged international research objectives. Buildings of recognised international importance. Historic landscape of international sensitivity, whether designated or not. Extremely well-preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s).

Sensitivity	Definition used in this chapter
High	Scheduled Monuments. Grade I and II* listed buildings. Grade I and Grade II* Registered Parks and Gardens. Registered Battlefield. Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association not adequately reflected in the listing Grade. Conservation Areas containing very important buildings. Undesignated structures of clear national importance. Designated historic landscapes of outstanding interest. Undesignated landscapes of outstanding interest. Undesignated landscapes of high quality and importance, and of demonstrable national sensitivity. Well-preserved historic landscapes exhibiting exceptional coherence, time-depth, or other critical factor(s).
Medium	Designated or undesignated heritage assets that contribute to regional research objectives. Grade II listed buildings. Grade II Registered Parks and Gardens. Historic (unlisted) buildings that can be shown to have exceptional qualities in their fabric or historical association. Conservation Areas containing important buildings. Historic Townscape or built-up areas with historic integrity in their buildings, or built settings (e.g. including street furniture and other structures). Designated special historic landscapes. Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional sensitivity. Averagely well preserved historic landscapes with reasonable coherence, time-depth, or other critical factor(s).
Low (or lower)	Undesignated heritage assets of local importance. Assets compromised by poor preservation and/or poor survival of contextual associations. Assets of limited value, but with potential to contribute to local research objectives. 'Locally listed' buildings. Historic (unlisted) buildings of modest quality in their fabric or historical association. Historic Townscape or built-up areas of limited historic integrity in their buildings, or built settings (e.g. including street furniture and other structures). Robust undesignated historic landscapes. Historic landscapes with specific and substantial importance to local interest groups, but with limited sensitivity. Historic landscapes whose sensitivity is limited by poor preservation and/or poor survival of contextual associations.
Negligible	Assets with very little or no surviving archaeological interest. Buildings of no architectural or historic note; buildings of an intrusive character. Landscapes with little or no significant historical interest.

**Magnitude of the impact**

Assessment of Impact Magnitude – Archaeological Assets

5.9.2.18 The magnitude of an impact is assessed without regard to the value of the heritage asset. In considering the magnitude of impact, the principle established in section 12 of the NPPF that preservation of the asset is preferred, and that total physical loss of the asset is least preferred, has been taken into account.

5.9.2.19 It is not always possible to assess the physical impact in terms of percentage loss and therefore it can be important in such cases to try to assess the capacity of the heritage asset to retain its character and significance following any impact. Similarly, impacts resulting from changes within the settings of buried archaeological assets may also be more difficult to assess as they do not involve physical loss of the resource and may be reversible.

Assessment of Impact Magnitude – Historic Buildings

5.9.2.20 As for archaeological assets, the magnitude of impact in relation to historic buildings is assessed without regard to the value of the asset, so the total loss of an insignificant historic building has the same degree of magnitude of impact as the total loss of a high value historic building. Determination of the magnitude of impact is based on the principle that preservation of the asset and its setting is preferred and that total physical loss of the asset and/or its setting is the least preferred.

5.9.2.21 Changes within the settings of historic buildings may result from vibration, noise and lighting issues as well as visual impacts, and may be reversible. Additional methodology regarding the assessment of changes within settings is provided paragraphs 5.9.1.3 to 5.9.1.5.

Assessment of Impact Magnitude – Historic Landscapes

5.9.2.22 Historic landscapes cannot be destroyed or damaged but impacts on them can change their character. Impacts are assessed using evaluated HLC units, not the elements/parcels/components that contribute towards the character. There may be impacts resulting from changes within the settings of identified units, especially with regard to designated historic landscapes. Additional methodology regarding the assessment of changes within settings is provided at paragraph 5.9.1.3.

Magnitude criteria

5.9.2.23 The criteria for defining magnitude in this chapter are outlined in Table 5.11.

Table 5.11: Definition of terms relating to the magnitude of an impact.

Magnitude of impact	Definition used in this chapter
Major	For adverse, change to most or all key archaeological and/or historic building elements, such that the asset is totally altered and much of its significance is lost. Substantial change within the setting leading to considerable loss of significance of the asset. Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to HLC unit and complete loss of significance.
	For beneficial, as definition above but with positive changes to significance.
Moderate	For adverse, changes to many key archaeological and/or historic building elements, such that the asset is clearly modified and there is some loss of significance. Change within the setting leading to some loss of significance of the asset. Changes to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to HLC and some loss of significance.
	For beneficial, as definition above but with positive changes to significance.
Minor	For adverse, changes to key archaeological and/or historic building elements, such that the asset is slightly altered and there is a slight loss of significance. Slight change within the setting leading to a slight loss of significance of the asset. Changes to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access; resulting in limited changes to HLC and slight loss of significance.
	For beneficial, as definition above but with positive changes to significance.
Negligible	For adverse, very minor changes to key archaeological and/or historic building elements or within the setting that hardly affect the significance of the asset. Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to HLC and very little loss of significance.
	For beneficial, as definition above but with positive changes to significance.
No change	No substantive change to key archaeological elements and/or historic building fabric or within the setting. No substantive change to elements, parcels or components; no substantive visual or audible changes; no substantive changes arising from amenity or community factors.



**Significance of effect**

- 5.9.2.24 The significance of the effect upon historic environment is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 5.12. Where a range of significance of effect is presented in Table 5.12 the final assessment for each effect is based upon expert judgement. The effects on heritage assets resulting from change within their settings may be adverse or beneficial.
- 5.9.2.25 For the purposes of this assessment, any effects with a significance level of minor or less have been concluded to be not significant in terms of the EIA Regulations.

**Table 5.12: Matrix used for the assessment of the significance of the effect.**

		Magnitude of impact				
		No change	Negligible	Minor	Moderate	Major
Sensitivity of receptor	Negligible	Negligible	Negligible	Negligible or minor	Negligible or minor	Minor
	Low	Negligible	Negligible or minor	Negligible or minor	Minor	Minor or moderate
	Medium	Negligible	Negligible or minor	Minor	Moderate	Moderate or major
	High	Negligible	Minor	Minor or moderate	Moderate or major	Major or substantial
	Very high	Negligible	Minor	Moderate or major	Major or substantial	Substantial
	Very high	Negligible	Minor	Moderate or major	Major or substantial	Substantial

**5.10 Measures adopted as part of Hornsea Three**

- 5.10.1.1 As part of the project design process, a number of designed-in measures have been proposed to reduce the potential for impacts on the historic environment (see Table 5.13). As there is a commitment to implementing these measures, they are considered inherently part of the design of Hornsea Three and have therefore been considered in the assessment presented in section 5.11 below (i.e. the determination of magnitude and therefore significance assumes implementation of these measures). These measures are considered standard industry practice for this type of development.

**Table 5.13: Designed-in measures adopted as part of Hornsea Three.**

Measures adopted as part of Hornsea Three	Justification
<b>Construction Phase</b>	
Cables will be buried rather than above ground.	This reduces or nullifies any long-term effect on the settings of heritage assets.
A programme of advance archaeological investigation following consent will focus on identified sites that will be adversely affected by Hornsea Three. Targeted geophysical survey and trial trenching will be undertaken in other areas of the onshore cable corridor as appropriate. A WSI will be agreed with the relevant authorities prior to commencement of the consented works.	To offset any loss of, or damage to, buried archaeological assets.
Investigation of unexpected archaeological sites encountered during construction will be undertaken in line with procedures (e.g. a chance find procedure) agreed in advance with the relevant authorities (see outline CoCP (document reference A8.5)).	To offset any loss of, or damage to, buried archaeological assets
Restoration of hedges and hedge banks (for more detail see chapter 3: Ecology and Nature Conservation). Landscape planting scheme around onshore HVAC booster station and HVDC converter/HVAC substation (see Outline Landscape Management Plan, document reference A8.7).	This reduces any long-term effects on the settings of heritage assets and the historic landscape.

- 5.10.1.2 A number of assets have been discovered during the EIA process. Detailed mitigation measures for specific sites are described in Table 5.14. For the locations of the sites, see volume 6, annex 5.2: Fieldwalking Report.

**Table 5.14: Detailed measures adopted as part of Hornsea Three with respect to the recording of undesignated heritage assets.**

Mitigation measures adopted as part of Hornsea Three	Justification
<b>Construction Phase</b>	
Site GS2 - Baconsthorpe: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	The Hornsea Three onshore cable corridor passes between the two recorded heritage assets just west of Baconsthorpe Castle. Potential that previously unrecorded archaeological remains continue through this area.
Site GS5 - Barningham Green, onshore HVAC booster station: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	No recorded or known archaeology, including from the geophysical survey (see volume 6, annex 5.6: Onshore Geophysical Survey Report). However, given the impact of the proposed permanent structures a programme of mitigation works is judged to be appropriate.

Mitigation measures adopted as part of Hornsea Three	Justification
Site GS6 - Corpusty: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	A small number of discrete and linear responses of uncertain origin have been identified through the geophysical survey (see volume 6, annex 5.6: Onshore Geophysical Survey Report). Metal detecting within these fields has produced significant quantities of Roman and early Anglo-Saxon artefacts indicating a high potential for associated buried archaeological remains.
Site GS7 – Saxthorpe: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Significant quantities of medieval finds suggest medieval settlement.
Site GS10 - Booton: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	St Michael and All Angels' Church, medieval coin finds and Roman road.
Site GS 11 – Alderford: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Cropmarks of ditches of possible Iron Age to Roman date and finds including tesserae.
Site GS12 - Attlebridge/Morton on the Hill: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Cropmarks of Bronze Age round barrow cemetery.
Site GS13 – Ringland: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Site of probable Bronze Age barrow.
Site GS14 – Easton: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	High potential for significant buried archaeological deposits relating to Anglo-Saxon to medieval settlement.
Site GS15 - Broom Farm: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	The cropmarks of an area of enclosures and fields of probable Roman date.
Site GS16 - Little Melton: Area subject to geophysical survey now outside Hornsea Three project boundary. However, trenching/soil stripping would be undertaken as appropriate within a nearby part of the onshore cable corridor in advance of construction and/or monitoring of soil stripping during construction (and see Site GS23).	High potential for significant buried archaeological deposits relating to Anglo-Saxon to medieval settlement.
Site GS17 – Ketteringham: Area subject to geophysical survey now outside Hornsea Three project boundary. However, trenching/soil stripping would be undertaken as appropriate within a nearby part of onshore cable corridor in advance of construction and/or monitoring of soil stripping during construction.	Cropmark of Bronze Age ring ditch.
Site GS18 - Mangreen South: Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Historic Environmental Record (HER) records cropmarks of an undated rectangular enclosure at the proposed onshore HVDC converter/HVAC substation. Permanent structures and relatively large area of high impact.
Site GS19 – Mangreen Hall – geophysical survey as appropriate of areas within the Hornsea Three project boundary in advance of construction.	High potential for significant buried archaeological deposits relating to Anglo-Saxon to medieval settlement.

Mitigation measures adopted as part of Hornsea Three	Justification
Site GS24 – Edgefield - – geophysical survey as appropriate of areas within the Hornsea Three project boundary in advance of construction.	Cropmarks of a ring ditch and linear features (possible enclosures).
Reroute Online Map 2 - Bodham (TF 113 395 area): Geophysical survey and/ or trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Presence of an enclosure cropmark of possible Iron Age to Roman date within 50 m of onshore cable corridor. Consequently, there is a high potential for associated buried archaeological remains.
Reroute Online Map 2 - Bodham (TF 115 391 area) Geophysical survey and/ or trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Previously unrecorded cropmarks, including boundary/enclosure ditches and a possible ring ditch, are visible in this field on Google Earth imagery from 1999.
Site GS23 Reroute Online Map 7 - Great Melton/Little Melton (TG 147 070 area): Further geophysical survey and/or trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction (and see Site GS16).	A small number of discrete and linear responses of uncertain origin have been identified through the geophysical survey (see volume 6, annex 5.6: Onshore Geophysical Survey Report). The onshore cable corridor runs along the line of a parish boundary that is also recorded as a cropmark feature. The presence of a parish boundary may increase the potential for an early Anglo-Saxon cemetery to be present and this needs to be considered in the future mitigation works.
Reroute Online Map 8 - Hethersett (TG 167 058 area): Geophysical survey and/ or trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	The onshore cable corridor passes through an area of Roman finds and consequently there is potential for buried archaeological remains to be present.
<b>Operation and Maintenance Phase</b>	
None.	All mitigation completed prior to/ during the construction phase.
<b>Decommissioning Phase</b>	
None.	All mitigation completed prior to/ during the construction phase.

## 5.11 Assessment of significance

### 5.11.1 Construction phase

5.11.1.1 The impacts of the onshore construction of Hornsea Three have been assessed on the historic environment. The potential impacts arising from the construction of Hornsea Three are listed in Table 5.8 along with the maximum design scenario against which each construction phase impact has been assessed.

5.11.1.2 A description of the potential effect on historic environment receptors caused by each identified impact is given below.

**Construction of onshore elements of Hornsea Three (including any stripping required for storage, compounds and accesses) could result in permanent loss of or damage to, buried archaeological remains.**

- 5.11.1.3 There are a number of archaeological assets which have been identified through desk assessment and fieldwork; those which are significant and substantial are outlined in volume 6, annex 5.2: Fieldwalking Report and in Table 5.14 and assessed below. The approach to desk assessment and field evaluation means that other archaeological assets of medium or higher sensitivity are unlikely to be discovered during construction. Other assets of low/negligible sensitivity may be discovered during construction, though this risk will be controlled through the measures outlined in Table 5.13 (e.g. a chance find procedure).

*Magnitude of impact*

- 5.11.1.4 Although the full extent of the archaeological assets have not always been determined, because site-specific surveys have taken place largely within the Hornsea Three onshore cable corridor, many of the assets can be seen to cover a relatively wide area and construction would only impact upon part of these assets. In the cases of ring ditches, they may be entirely removed through the construction of the Hornsea Three onshore cable corridor. There would be changes to many key archaeological elements, such that the assets are clearly modified and there is some loss of significance. Impacts are predicted to be of local spatial extent, of permanent duration, of continuous occurrence and not reversible. It is predicted that any impact may affect the receptors directly. With the implementation of the measures set out in Table 5.13 and Table 5.14 the magnitude of impact is, therefore, considered to be minor.

*Sensitivity of receptor*

- 5.11.1.5 These archaeological assets may represent settlement and/or funerary and/or agricultural activity and detailed investigation is more likely to make a significant contribution to local rather than regional research objectives and the assets are of low to medium sensitivity.

*Significance of the effect*

- 5.11.1.6 Overall, the assets are of low to medium sensitivity and the magnitude of impact is deemed to be minor. The effect will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

**Construction works at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could potentially result in temporary impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.**

- 5.11.1.7 In line with the maximum design scenario set out in Table 5.8, the tallest proposed structure at the onshore HVDC converter/HVAC substation is up to 25 m in height and this has been modelled within the ZTV for this location. The tallest structure at the onshore HVAC booster station is up to 12.5 m in height (as the maximum design scenario (see Table 5.8) and this has been modelled within the ZTV for this location. Figures for the ZTVs are provided in chapter 4: Landscape and Visual Resources.

**Scheduled Monuments – onshore HVAC booster station**

- 5.11.1.8 Screening (see volume 6, annex 5.5: Screening Assessment – Onshore HVAC Booster Station) has indicated that there are no SMs located within the Hornsea Three historic environment study area which fall within the ZTV of the proposed onshore HVAC booster station. As such no significant effects are anticipated and no further assessment is required.

**Scheduled Monuments onshore HVDC converter/HVAC substation**

- 5.11.1.9 Screening (see volume 6, annex 5.4: Screening Assessment – Onshore HVDC Converter/HVAC substation) has indicated that there are seven SMs located within the Hornsea Three historic environment study area (outside the built development of Norwich), which fall within the ZTV of the onshore HVDC converter/HVAC substation. The potential impact on the setting of these SMs was assessed and the need for further assessment was identified and is discussed below.

Scheduled monument discovered by air photography at Markshall (list entry number 1002887)

- 5.11.1.10 The SM discovered at Markshall (list entry number 1002887) is located approximately 2.4 km north east of the onshore HVDC converter/HVAC substation. The SM comprises an area of probable Late Neolithic and/or Bronze Age activity, with a possible henge monument and D-shaped enclosure (NHER number 9582).

*Magnitude of impact*

- 5.11.1.11 Hornsea Three would have no physical impact on the SM and therefore the potential impact is limited to an impact on its setting. The SM lies within the ZTV of the onshore HVDC converter/HVAC substation.

- 5.11.1.12 There would be, at most, very minor changes to the setting of the designated asset through minor changes in views from the SM and the magnitude of impact of Hornsea Three on the SM is assessed as being negligible.

*Sensitivity of receptor*

- 5.11.1.13 The heritage values of this SM are as follows:
- Evidential and Historical – The evidential value of the SM derives from the likelihood of the survival of buried remains relating to the SM. The historical value is largely illustrative;
  - Aesthetic – The remains of the SM are buried and there is little aesthetic value; and
  - Communal – The value derives from its symbolic value as part of the local community.

- 5.11.1.14 Based on the above, the SM is deemed to be of high sensitivity. The setting of the SM, between two railways and a major road makes a minor contribution to the sensitivity of the SM, although the proximity of the river, which presumably lays on a roughly similar location during the lifetime of the SM, adds to this contribution.



5.11.1.15 The setting of the SM largely comprises the nearby surrounding open ground of the Yare Valley. The SM is divided from the onshore HVDC converter/HVAC substation by the A47 road, which in effect provides the southern boundary of its setting.

*Significance of the effect*

5.11.1.16 Overall, the sensitivity of the asset is considered to be high and the magnitude of impact is deemed to be negligible. The effect of Hornsea Three on the SM will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

Two round barrows near Norwich Lodge, Ketteringham Hall (list entry number 1002888)

5.11.1.17 The SM comprising two round barrows near Ketteringham Hall (list entry number 1002888) is located approximately 3.2 km west of the onshore HVDC converter/HVAC substation.

*Magnitude of impact*

5.11.1.18 Hornsea Three would have no physical impact on the SM (list entry number 1002888) and therefore the potential impact is limited to an impact on its setting. The SM lies within the ZTV of the onshore HVDC converter/HVAC substation.

5.11.1.19 There would be, at most, very minor changes to the setting of the designated assets through minor changes in views from the barrows and the magnitude of impact of Hornsea Three on the SM is assessed as being negligible.

*Sensitivity of receptor*

5.11.1.20 The heritage values of this SM are as follows:

- Evidential and Historical – The evidential value of the SM derives from the fabric and upstanding remains of the SM itself and from the likelihood of the survival of buried remains relating to the SM. The historical value is largely illustrative;
- Aesthetic – The value derives from the earthwork remains of the SM; and
- Communal – The value derives from its symbolic value as part of the local community.

5.11.1.21 Based on the above, the SM is deemed to be of high sensitivity. Setting makes a large contribution to the sensitivity of the SM, although there are numerous modern intrusions, including to the north and north east of the designated asset which detract from this contribution.

5.11.1.22 The setting of the SM largely comprises the surrounding open ground of the Yare Valley, with the woodland of Ketteringham Park immediately to the west and the built development of a council depot to the north. The latter does not make a positive contribution to the sensitivity of the designated asset. There are views towards other contemporary monuments in the vicinity, including towards the two barrows in Big Wood, located approximately 1.6 km to the north east, recorded as list entry number 1003977.

*Significance of the effect*

5.11.1.23 Overall, the sensitivity of the asset is considered to be high and the magnitude of impact is deemed to be negligible. The effect of Hornsea Three on the SM will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

Anglo-Saxon cemetery (list entry number 1003163)

5.11.1.24 The SM is assessed with Venta Icenorum (list entry number 1021463).

Arminghall, sites discovered by air photographs (list entry number 1003620)

5.11.1.25 The SM at Arminghall (list entry number 1003620) is located approximately 3.5 km north east of the onshore HVDC converter/HVAC substation. Most of the SM is divided from the onshore HVDC converter/HVAC substation by the A47 road, which in effect provides the southern boundary of its setting. The small element of the SM located to the south of the A47 road faces north west, towards the River Yare and away from the onshore HVDC converter/HVAC substation. There would be no significant effect on the SM and it is therefore not considered further.

Roman sites outside town walls (list entry number 1003954)

5.11.1.26 The SM is assessed with Venta Icenorum (list entry number 1021463).

'Woodhenge', Arminghall (list entry number 1003985)

5.11.1.27 'Woodhenge' at Arminghall (list entry number 1003985) is located approximately 3.6 km north east of the onshore HVDC converter/HVAC substation. The SM is divided from the onshore HVDC converter/HVAC substation by the A47 road, which in effect provides the southern boundary of its setting. There would therefore be no impact on the SM or its setting and is therefore not considered further.

Venta Icenorum: Roman town and associated prehistoric and medieval remains (list entry number 1021463), Roman sites outside town walls (list entry number 1003954) and Anglo-Saxon cemetery (list entry number 1003163)

5.11.1.28 Venta Icenorum, a Roman town and associated prehistoric and medieval remains (list entry number 1021463) is located immediately to the east of the mainline railway, approximately 1.6 km east of the onshore HVDC converter/HVAC substation. Roman sites outside town walls (list entry number 1003954) is located to the north east of Caistor Hall Hotel, approximately 2.4 km north east of the onshore HVDC converter/HVAC substation and approximately 450 m north east of the scheduled element of Venta Icenorum. The Anglo-Saxon cemetery (list entry number 1003163) which is located on a gently sloping site overlooking the valley of the River Yare approximately 2.2 km east of the onshore HVDC converter/HVAC substation and approximately 200 m east of the scheduled element of Venta Icenorum.

*Magnitude of impact*

5.11.1.29 Hornsea Three would have no physical impact on the SM and therefore any potential impact would be on its setting. The SM lies within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint on the east side of the SM at Venta Icenorum (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the SM, which includes the church of St Edmund, listed at Grade II\* (list entry number 1373145, see 5.11.1.71). The proposed view would include glimpses of the upper part of the onshore HVDC converter/HVAC substation, seen through the prism of modern infrastructure, principally existing electricity cables. Given the wooded nature of the area (for example along the west side of the A140 road and at Dunston Hall) from where in combination views of the designated asset and the onshore HVDC converter/HVAC substation might be had, in practice these would be difficult to obtain.

5.11.1.30 There would be slight changes to the setting of the designated assets, for example the visualisation shows the roofline of the building and the magnitude of impact of Hornsea Three on the SMs is assessed as being minor.

*Sensitivity of receptor*

5.11.1.31 The Romano-British town of Venta Icenorum, was founded in c. 60 AD and occupied throughout the Roman period. The archaeological remains of this town cover a wide area.

5.11.1.32 The ramparts and ditch of the defended area of the Romano-British town survive well for most of the circuit with some standing 3<sup>rd</sup> century walling also surviving in places.

5.11.1.33 The list entry notes that Venta Icenorum was the largest and most important Roman town in northern East Anglia and is one of only three civitas capitals to survive in a wholly greenfield location in England. The town is documented in the Roman period and the results of limited archaeological excavation and evaluation, as well as non-intrusive investigation provide a sound evidence base for assessing the sensitivity of the town. The circuit of the upstanding town wall provides an impressive visual feature and although none of the buildings within or beyond the walls survive above ground, the diversity of buried archaeological deposits such as masonry foundations, tessellated floors, roads and defensive ditches are known from excavation, geophysical survey and aerial photographic evidence to survive well below ground. The known, continued survival of important public buildings such as the amphitheatre, forum and basilica and bath complex adds considerably to the sensitivity of the monument as does the crop mark evidence of the Late Iron Age settlement. As the site was not comprehensively resettled in the post-Roman period, the extensive survival of archaeological deposits has the potential to increase understanding on the pre-Roman settlement, the foundation and development of the civitas capital and the decline of urban Roman life in the province. The evidence for continued occupation into the early medieval period adds significantly to the sensitivity of the monument on a less well understood period of our history. Venta Icenorum comprises a palimpsest of multi-period settlement with considerable group value.

5.11.1.34 The Roman site's outside town walls (list entry number 1003954) would have formed part of the hinterland of the Roman town, while the Anglo-Saxon cemetery (list entry number 1003163) represents early medieval activity in a location where the existence of the Roman settlement was probably understood. The heritage values of the SMs are as follows:

- Evidential and Historical – The evidential value of the SM derives from the fabric and upstanding remains of the SMs themselves and from the likelihood of the survival of buried remains relating to the SM. The historical value is largely illustrative;
- Aesthetic - This value derives from the earthwork remains of Venta Icenorum in particular; and
- Communal - This value derives from their symbolic value as part of the local community.

5.11.1.35 The SMs are of high sensitivity. Setting makes a significant contribution to the sensitivity of the SMs in that in general they retain their rural surroundings, albeit with a number of modern intrusions.

*Significance of the effect*

5.11.1.36 Overall, the sensitivity of the assets is considered to be high and the magnitude of impact on their setting is deemed to be minor (i.e. there would be no physical impact on the SMs but an impact on views when looking in the direction of the onshore HVDC converter/HVAC substation). The effect of Hornsea Three on the SMs will, therefore be of **moderate adverse** significance, which is significant in EIA terms. It is noted that the effect would be at the lowest end of that scale and that Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary compounds, which may further mitigate impacts.

**Listed Buildings – onshore HVAC booster station**

5.11.1.37 Screening (see volume 6, annex 5.5: Screening Assessment - Onshore HVAC Booster Station) has indicated that there are no Grade I or Grade II listed buildings located within the Hornsea Three historic environment study area, within the ZTV of the onshore HVAC booster station and which require further detailed assessment.

5.11.1.38 However, the screening process has indicated that there is one Grade II\* Listed Building located within the Hornsea Three historic environment study area, within the ZTV of the onshore HVAC booster station and which required further assessment. This is Salle Park which is discussed below.

Salle Park (list entry number 1170353)

5.11.1.39 Salle Park (listed at Grade II\*, list entry number 1170353) is located to approximately 8.5 km to the south of the onshore HVAC booster station and is the principal building within the landscaped park and garden at Salle Park (a registered park and garden (registered at Grade II, list entry number 1001016), which is located approximately 16 m from the storage area at its nearest point.

*Magnitude of impact*

5.11.1.40 Hornsea Three would have no physical impact on the designated asset and any impact would be on their setting. The listed building lies within the ZTV of the onshore HVAC booster station and the Hornsea Three onshore cable corridor runs nearby to the west.

5.11.1.41 The principal house at Salle Park will benefit from a degree of screening provided by adjacent vegetation within the park and outside it. The registered park and garden is bounded by trees and woodland to its north and north west and therefore will be afforded similar screening.

5.11.1.42 Given the distance of the designated assets from the onshore HVAC booster station and the existing year round screening, the magnitude of impact of Hornsea Three on the designated assets is minor on the registered park and garden and negligible on the Grade II\* listed principal building.

*Sensitivity of receptor*

5.11.1.43 The principal building comprises a country house in the domestic Palladian style, which was built for Edward Base in 1761. The building is of red brick and black pantiles. The double pile structure is of 2.5 storeys, with two, two- storey service blocks linked by single storey wings. The north (entrance) facade, and the south (garden) façade are of seven bays with three bay pediments.

5.11.1.44 The registered park and garden appears to have 18th century origins, although the proximity of the medieval Salle Church to its west may indicate earlier origins. The park is well wooded and has avenues running roughly north east to south west and north west to south east running through an axis formed by the principal building.

5.11.1.45 The heritage values of the designated assets are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the listed building, the upstanding elements of the registered park and garden and the potential for associated buried archaeological remains. The historical value is largely illustrative, although there are associations with named individuals;
- Aesthetic - The value derives from the design value of the listed building in terms of its expression of the development of the Palladian architecture from the end of the mid-18th century. The value of the parkland derives from its design value as an 18th century and later landscaped park; and
- Communal – The value of the designated assets derives from their symbolic value as part of the local community.

5.11.1.46 The designated assets are of medium and high (high in the case of the principal building) sensitivity. Setting makes a significant contribution to the sensitivity of the listed building in that it remains within its surrounding parkland. Setting makes a significant contribution to the sensitivity of the registered park and garden in that it retains its rural setting.

5.11.1.47 The setting of the listed building is primarily the landscape park and garden in which it is located. The setting of the registered park and garden comprises the surrounding fields. The relationship with the nearby Salle Church to the west is significant.

*Significance of the effect*

5.11.1.48 Overall, the sensitivity of the assets is considered to be medium and high and the magnitude of impact on their setting would be minor and negligible respectively (i.e. there would be no physical impact on the designated assets). The effect of Hornsea Three on both designated assets at Salle Park will therefore be of **minor adverse** significance, which is not significant in EIA terms.

**Listed Buildings - onshore HVDC converter/HVAC substation**

5.11.1.49 Screening (see volume 6, annex 5.4: Screening Assessment – Onshore HVDC Converter/HVAC substation) has indicated that there are no Grade I listed buildings located within the Hornsea Three historic environment study area, outside the built development of Norwich, that fall within the ZTV of the onshore HVDC converter/HVAC substation and which require further assessment.

5.11.1.50 Screening has indicated that there are three Grade II\* listed buildings located within the Hornsea Three historic environment study area that fall within the ZTV of the onshore HVDC converter/HVAC substation and which require further assessment. These are Gowthorpe Manor House (list entry number 1050515), Barn c. 40 m west of Gowthorpe Manor House (list entry number 13566141) and Mangreen Hall (list entry number 13566150) which are discussed in turn below.

Gowthorpe Manor House (list entry number 1050515) and Barn c. 40 m west of Gowthorpe Manor House (list entry number 13566141)

5.11.1.51 Gowthorpe Manor House (listed at Grade II\*, list entry number 1050515) is located adjacent to and associated with the following listed structures: Gazebo c. 10 m south of Gowthorpe Manor House (list entry number 1050516), Cowshed c. 10 m north west of Barn at Gowthorpe Manor House (list entry number 1050517) and Garden Walls and Gate Piers immediately south west of Gowthorpe Manor House (list entry number 1170357). Slightly further away is Barn c. 40 m West of Gowthorpe Manor House (listed at Grade II\*, list entry number 1366141). The group of designated assets are located to the east of Swardeston and approximately 850 m to the south of the onshore HVDC converter/HVAC substation.



*Magnitude of impact*

5.11.1.52 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. The designated assets lie within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint in the grounds to the north of Gowthorpe Manor (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the grounds of the listed buildings. The existing view shows the garden to the north of Gowthorpe Manor, with existing modern farm buildings to the west. The proposed view indicates that the onshore HVDC converter/HVAC substation would be largely hidden from view by landform and vegetation.

5.11.1.53 Both Gowthorpe Manor House and the Barn 40 m to its west, each listed at Grade II\* will benefit from the degree of screening provided by adjacent modern buildings and vegetation.

5.11.1.54 The magnitude of impact of Hornsea Three on the designated assets is minor, as evidence in part by the visualisation.

*Sensitivity of receptor*

5.11.1.55 Gowthorpe Manor House is a house, of the 16th and 17th centuries with additions and alterations of 1908, for the Styward (Steward) family. The building comprises two storeys with an attic, of brick, with a partly encased timber frame. The building has a plain tiled roof, with crowstepped gables.

5.11.1.56 The Barn c. 40 m west of Gowthorpe Manor House, which now houses grain silos, dates from the early 17th century and is constructed of brick, with crowstepped gables; the roof retiled with pantiles. The remaining designated assets are ancillary buildings and structures to the principal building.

5.11.1.57 The heritage values of the designated assets are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the listed buildings and the potential for associated buried archaeological remains. The historical value is largely illustrative, although there are associations with the Styward (Steward) family and other named individuals;
- Aesthetic – The value derives from the design value of the listed buildings in terms of their expression of the development of the local vernacular architecture from the end of the medieval period onwards; and
- Communal – The value of the listed buildings derives from their symbolic value as part of the local farming community.

5.11.1.58 The designated assets are of medium and high (high in the case of Gowthorpe Manor House) sensitivity. Setting makes a significant contribution to the sensitivity of the designated assets in that they retain their rural setting.

5.11.1.59 The setting of the designated assets is primarily each other and the yard and grounds in which they are located, with the associated farm buildings, and the surrounding fields. The listed buildings face away from the onshore HVDC converter/HVAC substation.

*Significance of the effect*

5.11.1.60 Overall, the sensitivity of the assets is considered to be medium and high and the magnitude of impact on their setting is deemed to be minor (i.e. there would be no physical impact on the designated assets). The effect of Hornsea Three on the designated assets will, therefore be of **moderate adverse** significance, which is significant in EIA terms.

Mangreen Hall (list entry number 1366150)

5.11.1.61 Mangreen Hall (listed at Grade II\*, list entry number 1366150) is located adjacent to and associated with Mangreen Lodge c. 50 m east of Mangreen Hall (list entry number 1050518), Wattle Cottage at TG 2130 0308 c. 230 m west-north-west of Mangreen Hall (list entry number 1050519) and Barn at Hall Farm with attached Cattle Shelters (list entry number 1170403), located on the south side of Mangreen Lane. Each of these buildings is listed at Grade II. The group of designated assets are located approximately 280 m south east of the onshore HVDC converter/HVAC substation on Mangreen Lane.

*Magnitude of impact*

5.11.1.62 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. The designated assets lie within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint on the public right of way to the north west of Mangreen Hall (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from this location, close to but outside the western edge of the area of informal parkland to the north of the listed building. The existing view shows agricultural fields and hedgerows, with a line of electricity pylons on the horizon. Mangreen Hall itself cannot be seen from this location, which is at a gap in the otherwise dense hedgerow. The proposed view would clearly show the buildings of the onshore HVDC converter/HVAC substation (see volume 6, annex 5.7: Historic Environment Visualisations).

5.11.1.63 Both Mangreen Hall and Mangreen Lodge to its east will benefit from a degree of screening provided by adjacent modern buildings and vegetation, as will the Barn at Hall Farm to a greater extent, while Wattle Cottage to the north west of the other structures will be screened to a degree by vegetation.

5.11.1.64 As indicated in part by the visualisation, the magnitude of impact of Hornsea Three on the designated assets is minor.

*Sensitivity of receptor*

5.11.1.65 Mangreen Hall is thought to originally have been a medieval moated site, possibly with an associated hamlet (HER number 52134). The principal building has a facade of c. 1700 with additions including a central 18th century classical doorway, all on an earlier core. Further additions were made in c. 1910. A tree lined avenue is shown leading north from the hall on early maps, but this has been removed. The building is of brick in Flemish bond with coloured headers with a plain tiled roof. Mangreen Lodge comprises the former stables to Mangreen Hall and similarly dates to c. 1700. The building now comprises two residential dwellings. Wattle Cottage comprises a house, formerly an early 16th century open hall, while the barn at Hall Farm comprises an early 19th century barn.

5.11.1.66 The heritage values of the designated assets are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the listed buildings and the potential for associated buried archaeological remains, some of which are recorded in the HER. The historical value is largely illustrative;
- Aesthetic - The value derives from the design value of the listed buildings in terms of their expression of the development of the local vernacular architecture from the end of the medieval period into the polite architecture of the early 18th century onwards; and
- Communal – The value of the listed buildings derives from their symbolic value as part of the local community.

5.11.1.67 The designated assets are of medium and high (in the case of Mangreen Hall) sensitivity. Setting makes a significant contribution to the sensitivity of the designated assets in that they retain their rural setting.

5.11.1.68 The setting of the designated assets is primarily each other and the grounds and yard in which they are located, with the associated farm buildings, and the surrounding fields. The principal building faces north towards the onshore HVDC converter/HVAC substation, although adjacent buildings and planting provide a high degree of screening to views in its direction from the listed building.

*Significance of the effect*

5.11.1.69 Overall, the sensitivity of the designated assets is considered to be medium and high, and the magnitude of impact on their setting is deemed to be minor (i.e. there would be no physical impact on the designated assets). The effect of Hornsea Three on the designated assets will, therefore be of **moderate adverse** significance, which is significant in EIA terms.

The Old Hall (list entry number 1050563)

5.11.1.70 Old Hall is assessed with Church of St Edmund (listed at Grade II\*, list entry number 1373145), below.

Church of St Edmund (list entry number 1373145)

5.11.1.71 The Church of St Edmund (listed at Grade II\*, list entry number 1373145) is located approximately 1.9 km east of the onshore HVDC converter/HVAC substation at Caistor St Edmund and is surrounded by the scheduled area of Venta Icenorum: Roman town and associated prehistoric and medieval remains (list entry number 1021463), although it does not form part of the SM. The Old Hall (list entry number 1050563) is located approximately 400 m north of the Church of St Edmund.

5.11.1.72 The group of buildings at Caistor St Edmund also includes Queen Anne Cottage (list entry number 1050559), The Old Rectory (list entry number 1050561), Caistor Hall (list entry number 1050562) and Barn about 120 m West South West of Old Hall (list entry number 1241166). Each of these buildings is listed at Grade II.

*Magnitude of impact*

5.11.1.73 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. The designated assets lie within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint at Venta Icenorum (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from within the SM at Venta Icenorum (and see 5.11.1.28 *et seq* above), with the Church of St Edmund to the south of the viewpoint and the group of listed buildings at Caistor St Edmund further north and east. The existing view shows the fields and landscape towards the proposed HVDC converter/HVAC substation. The proposed view shows the buildings of the proposed HVDC converter/HVAC substation on the horizon.

5.11.1.74 Both Queen Anne Cottage and Caistor Hall will benefit from a degree of screening provided by adjacent vegetation, while The Old Hall will be screened to a degree by the adjacent buildings.

5.11.1.75 There would be slight changes to the setting of the designated assets, for example the visualisation shows the roofline of the building and the magnitude of impact of Hornsea Three on the designated assets is minor.

*Sensitivity of receptor*

5.11.1.76 The Church of St Edmund comprises a parish church, of the early 14th century and later. The building is of uncoursed broken flint, mainly rendered, with stone and brick dressings under a slate roof. The west tower, nave and chancel are in one under two roofs separated by a gable parapet. There is reused Roman material in parts of the structure.

5.11.1.77 The Old Hall is a house, dated 1612, built for Thomas Pettus. The building is of two storeys, with an attic and cellar to the front. The rear has a central stair turret and there are two storeyed wings to the left and right. The structure is of uncoursed broken flint with brick dressings, black glazed pantiles to the roof. The principal facade is to the south east.

5.11.1.78 The buildings represent a group of village structures of the medieval period and later. The heritage values of the listed buildings are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the listed buildings and the potential for buried archaeological remains associated with them. The historical value is largely illustrative;
- Aesthetic - The value derives from the design value of the listed buildings in terms of their expression of the local vernacular architecture and the ecclesiastical architecture of the medieval period; and
- Communal – The value of the listed buildings derives from their symbolic value as part of the local village and farming community.

5.11.1.79 The designated assets are of medium and high (in the cases of Old Hall and the Church of St Edmund) sensitivity. Setting makes a significant contribution to the sensitivity of the designated assets in that they retain their rural setting.

5.11.1.80 The setting of the designated assets is primarily each other and the grounds and hamlet in which they are located, with the associated (mostly former) farm and village buildings, and the surrounding fields. The Old Hall faces south east, away from the onshore HVDC converter/HVAC substation.

*Significance of the effect*

5.11.1.81 Overall, the sensitivity of the designated assets is considered to be medium and high, and the magnitude of impact on the setting is deemed to be minor (i.e. there would be no physical impact on the designated assets and any impact would be on their setting). The effect of Hornsea Three on the designated assets will, therefore be of **moderate adverse** significance, which is significant in EIA terms.

Church of St Mary (list entry number 1050556) and other Listed Buildings at Swardeston

5.11.1.82 The Church of St Mary (list entry number 1050556, listed at Grade II\*) is located approximately 1.1 km south west of the onshore HVDC converter/HVAC substation.

5.11.1.83 There are eight further listed buildings within and adjacent to the built development of Swardeston. The listed buildings are: the Croft at TG 2003 0251 (list entry number 1050514), The Old Rectory and Attached Garden Wall (list entry number 1050557), The Old Forge (list entry number 1050701), Old Cavell Vicarage (list entry number 1170259), Milestone No 4 at TG 2011 0251 (list entry number 1170428), The Garden House (list entry number 1306115), The Dog Public House (list entry number 1373165), Swardeston Farmhouse (list entry number 1378628) and Swardeston War Memorial (list entry number 1440669). Each of these buildings is listed at Grade II. In addition, Cavell house, located off The Common at the north end of the village is an undesignated asset.

*Magnitude of impact*

5.11.1.84 Hornsea Three would have no physical impact on the designated assets or on Cavell House and any impact would be on their setting. The designated assets lie within the ZTV of the onshore HVDC converter/HVAC substation.

5.11.1.85 The Church of St Mary is screened from the onshore HVDC converter/HVAC substation by vegetation in the forms of trees and bushes surrounding the churchyard, while the remaining listed buildings are largely screened by surrounding built development.

5.11.1.86 Given that the Church of St Mary is screened from the onshore HVDC converter/HVAC substation, the magnitude of impact would therefore be negligible. The overall magnitude of impact of Hornsea Three on the remaining designated assets is minor.

*Sensitivity of receptor*

5.11.1.87 The Church of St Mary is a parish church of the 11th and 14th centuries. The building is of roughly coursed flint with stone dressings under a lead roof. The west tower, nave and chancel in are one.

5.11.1.88 The buildings represent a group of village structures of the medieval period and later. The heritage values of the listed buildings are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the listed buildings and the potential for buried archaeological remains associated with them. The historical value is largely illustrative;
- Aesthetic - The value derives from the design value of the listed buildings in terms of their expression of the local vernacular architecture and the ecclesiastical architecture of the medieval period; and
- Communal – The value of the listed buildings derives from their symbolic value as part of the local village and farming community.

5.11.1.89 The designated assets are of medium and high sensitivity. Setting makes a significant contribution to the sensitivity of the designated assets and Cavell House in that they retain their village setting.

5.11.1.90 The setting of the designated assets and Cavell House is primarily each other and the village in which they are located, with the associated (mostly former) farm and village buildings, and the surrounding fields.

*Significance of the effect*

5.11.1.91 Overall, the sensitivity of the designated assets is considered to be medium and the magnitude of impact on their setting is deemed to be minor (i.e. there would be no physical impact on the designated assets). The Church of St Mary is screened from the onshore HVDC converter/HVAC substation and the magnitude of impact would be negligible. The effect of Hornsea Three on the designated assets will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

Keswick Hall (list entry number 1306331)

5.11.1.92 Keswick Hall (list entry number 1306331) is located within parkland on the north side of the A47 road, approximately 550 m north west of the onshore HVDC converter/HVAC substation.



*Magnitude of impact*

5.11.1.93 Hornsea Three would have no physical impact on the designated asset and any impact would be on its setting. The designated asset lies within the ZTV of the onshore HVDC converter/HVAC substation. The designated asset is divided from the onshore HVDC converter/HVAC substation by the A47 road, which in effect provides the southern boundary of its setting. It is considered further here because of the proximity of the designated asset to the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint within the parkland to the south east of the designated asset (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the designated asset. A further visualisation from a viewpoint on Low Road at, to the north of the parkland at Keswick Hall is included in chapter 4: Landscape and Visual Resources (Landscape Viewpoint 6). Existing views show the parkland being partly wooded at its boundary with the A47 road. Proposed views show the buildings of the proposed HVDC converter/HVAC substation. From within the parkland these are partly screened by trees, although the proposed HVDC converter/HVAC substation would be visible from Low Road. This view would not contain the designated asset.

5.11.1.94 The designated asset benefits from a high degree of screening provided by vegetation in the parkland. This screening is year-round, and is particularly high in summer.

5.11.1.95 The magnitude of impact of Hornsea Three on the designated asset is minor as indicated in part by the visualisations.

*Sensitivity of receptor*

5.11.1.96 Keswick Hall comprises a house of 1817, with additions of c. 1839, designed by William Wilkins for Richard Hudson Gurney. The structure is of Gault brick with stone and rendered dressings under a slate roof.

5.11.1.97 The heritage values of the listed building are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the listed building. The historical value is partly illustrative, but there are also clear associations with named individuals;
- Aesthetic - The value derives from the design value of the listed building in terms of its expression of the classical architecture of the late Georgian period; and
- Communal – The value of the listed building derives from its symbolic value as part of the local community.

5.11.1.98 The designated asset is of medium sensitivity. Setting makes a significant contribution to the sensitivity of the designated asset in that it retains its parkland setting, although road noise is very intrusive when within the parkland to the south and south east of the listed building and in the areas of hardstanding to its north.

*Significance of the effect*

5.11.1.99 Overall, the sensitivity of the designated asset is considered to be medium and the magnitude of impact on its setting is deemed to be minor (i.e. there would be no physical impact on the designated asset). The effect of Hornsea Three on the designated asset will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

**Conservation Areas – onshore HVAC booster station**

5.11.1.100 Screening (see volume 6, annex 5.5: Screening Assessment - Onshore HVAC Booster Station) has indicated that there are no Conservation Areas located within the Hornsea Three historic environment study area, that fall within the ZTV of the onshore HVAC booster station and which require further assessment.

**Conservation Areas - onshore HVDC converter/HVAC substation**

5.11.1.101 Screening (see volume 6, annex 5.4: Screening Assessment - Onshore HVDC Converter/HVAC Substation) has indicated that there are six Conservation Areas located within the Hornsea Three historic environment study area, outside the built development of Norwich that fall within the ZTV of the onshore HVDC converter/HVAC substation. They are discussed below.

Eaton Conservation Area

5.11.1.102 Eaton Conservation Area is located approximately 2.2 km north west of the onshore HVDC converter/HVAC substation at its nearest point.

*Magnitude of impact*

5.11.1.103 Hornsea Three would have no physical impact on the Conservation Area and any impact would be on its setting. A visualisation from a viewpoint on Cringleford Bridge, within the Conservation Area and itself a SM (list entry number 1003981, (see volume 6, annex 5.7: Historic Environment Visualisations)) has been prepared. This shows the existing and proposed views from the Conservation Area and the SM. The onshore HVDC converter/HVAC substation would not be visible from this viewpoint, nor in practice is it likely to be from most other locations within the Conservation Area. Given the visualisation and the change to the setting of the designated asset (described below at paragraph 5.11.1.107), the magnitude of impact is assessed as being minor.

*Sensitivity of receptor*

5.11.1.104 The Conservation Area contains a total of 13 listed buildings of which three (Cringleford Bridge (List Entry Number 1050565), Church of St Andrew (List Entry Number 1206191) and Red Lion Public House (List Entry Number 1372802)) are listed at Grade II\* and the remainder (list entry numbers 1051261, 1051262, 1051263, 1051264, 1051327, 1051763, 1206627, 1372758, 1372800, and 1372801) are listed at Grade II.

5.11.1.105 A Conservation Area appraisal has been undertaken (Norwich City Council 2008a). This notes that the settlement has been subsumed within the suburban growth of Norwich, which has significantly altered the setting and rural character of the settlement. The village core remains a strong focal point, but is now dominated by traffic. The river and its environs, although not visible from much of the Conservation Area, provide an important landscaped area to the west (Norwich City Council 2008).

5.11.1.106 The heritage values of the Conservation Area are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the buildings, and structures within the Conservation Area. The historical value is largely illustrative;
- Aesthetic - The value derives from the design value of the Conservation Area in terms of its expression of settlement architecture; and
- Communal – The value of the Conservation Area derives from its symbolic value as part of the local community.

5.11.1.107 The Conservation Area is of medium sensitivity. The setting of the listed buildings within the Conservation Area is primarily their relationship with each other and the Conservation Area itself. The setting of the Conservation Area is formed primarily by its relationship with the built development of Norwich.

*Significance of the effect*

5.11.1.108 Overall, the sensitivity of the asset is considered to be medium and the magnitude of impact (as a result of slight visual changes to the setting) is deemed to be minor. The effect of Hornsea Three on the Conservation Area will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

Keswick Mill Conservation Area

5.11.1.109 Keswick Mill Conservation Area is located approximately 1.4 km north of the onshore HVDC converter/HVAC substation at the River Yare.

*Magnitude of impact*

5.11.1.110 Hornsea Three would have no physical impact on the Conservation Area and any impact would be on its setting. A relatively small part of the Conservation Area lies within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint in the southern part of the Keswick Mill Conservation Area (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the Conservation Area. The onshore HVDC converter/HVAC substation would not be visible from this viewpoint, nor in practice from most other locations within the Conservation Area. The magnitude of impact is assessed as being negligible.

*Sensitivity of receptor*

5.11.1.111 The Conservation Area contains three listed buildings (list entry numbers 1050546, 1306307 and 1373138), each listed at Grade II and forming part of the complex of 18th century mill buildings. No Conservation Area appraisal has been undertaken.

5.11.1.112 The heritage values of the Conservation Area are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the buildings and structures within the Conservation Area. The historical value is largely illustrative, but there are associations with named individuals;
- Aesthetic - The value derives from the design value of the Conservation Area in terms of its expression of the architecture of milling; and
- Communal – The value of the Conservation Area derives from its symbolic value as part of the local community.

5.11.1.113 The Conservation Area is of medium sensitivity. The setting of the listed buildings within the Conservation Area is primarily their relationship with each other and the Conservation Area itself. The setting of the Conservation Area is formed primarily by its relationship with the built development of Norwich.

*Significance of the effect*

5.11.1.114 Overall, the sensitivity of the asset is considered to be medium and the magnitude of impact (as a result of almost no perceptible changes to the setting) is deemed to be negligible. The effect of Hornsea Three on the Conservation Area will, therefore be of **negligible** significance which is not significant in EIA terms.

Mulbarton Conservation Area

5.11.1.115 Mulbarton Conservation Area is located approximately 2 km south west of the onshore HVDC converter/HVAC substation at its nearest point.

*Magnitude of impact*

5.11.1.116 Hornsea Three would have no physical impact on the Conservation Area and any impact would be on its setting. A relatively small part of the Conservation Area lies within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the Conservation Area. The onshore HVDC converter/HVAC substation would not be visible from this viewpoint, nor in practice is it likely to be from most other locations within the Conservation Area. The magnitude of impact is assessed as being minor.

*Sensitivity of receptor*

5.11.1.117 The Conservation Area contains a total of 12 listed buildings of which one Church of St Mary Magdalen (List Entry Number 1172267) is listed at Grade II\* and the remainder (list entry numbers 1050653, 1050700, 1050702, 1050703, 1172271, 1172291, 1172399, 1305179, 1305214, 1373057 and 1373058) are listed at Grade II. No Conservation Area appraisal has been undertaken.

5.11.1.118 The heritage values of the Conservation Area are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the buildings and structures within the Conservation Area. The historical value is largely illustrative;
- Aesthetic - The value derives from the design value of the Conservation Area in terms of its expression of settlement architecture; and
- Communal – The value of the Conservation Area derives from its symbolic value as part of the local community.

5.11.1.119 The Conservation Area is of medium sensitivity. The setting of the listed buildings within the Conservation Area is primarily their relationship with each other and the Conservation Area itself, in particular the Common in the centre of the Conservation Area, around which it is arranged. The setting of the Conservation Area is formed primarily by its relationship with the built development of the modern settlement of Mulbarton to its south and the surrounding fields.

*Significance of the effect*

5.11.1.120 Overall, the sensitivity of the asset is considered to be medium and the magnitude of impact (as a result of slight visual changes to the setting) is deemed to be minor. The effect of Hornsea Three on the Conservation Area will therefore be of **minor adverse** significance, which is not significant in EIA terms.

Old Lakenham Conservation Area

5.11.1.121 Old Lakenham Conservation Area is located on either side of the River Yare, approximately 3 km north east of the onshore HVDC converter/HVAC substation.

5.11.1.122 The Conservation Area contains a total of four listed buildings of which one, Church of St John and All Saints (List Entry Number 1372796), is listed at Grade II\* and the remainder (list entry numbers 1051198, 1051198, 1210544 and 1219018) are listed at Grade II. A Conservation Area appraisal has been undertaken (Norwich City Council 2008b).

*Magnitude of impact*

5.11.1.123 Hornsea Three would have no physical impact on the Conservation Area and any impact would be on its setting. A relatively small part of the Conservation Area lies within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint to the south of the railway bridge (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the Conservation Area. The onshore HVDC converter/HVAC substation would not be visible from this viewpoint, nor in practice is it likely to be from most other locations within the Conservation Area. The magnitude of impact on the Conservation Area is assessed as being minor.

*Sensitivity of receptor*

5.11.1.124 The Conservation Area appraisal notes that suburban expansion of Norwich has significantly altered the setting of the settlement, surrounding the area to the north and leading to a significant amount of infill development. Despite this, the rivers still provide an important landscaped backdrop, particularly in the area around the two bridges where the relationship between the river and historic buildings has been maintained (Norwich City Council, 2008).

5.11.1.125 The heritage values of the Conservation Area are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the buildings, and structures within the Conservation Area. The historical value is largely illustrative;
- Aesthetic - The value derives from the design value of the Conservation Area in terms of its expression of settlement architecture; and
- Communal – The value of the Conservation Area derives from its symbolic value as part of the local community.

5.11.1.126 The Conservation Area is of medium sensitivity. The setting of the listed buildings within the Conservation Area is primarily their relationship with each other and the Conservation Area itself. The setting of the Conservation Area is formed primarily by its relationship with the built development of Norwich. The Conservation Area is divided from the onshore HVDC converter/HVAC substation by the A47 road, which in effect provides the southern boundary of its setting. A very small part of the Conservation Area lies within the ZTV of the onshore HVDC converter/HVAC substation.

*Significance of the effect*

5.11.1.127 Overall, the sensitivity of the asset is considered to be medium and the magnitude of impact (as a result of slight visual changes to the setting) is deemed to be minor.

5.11.1.128 The effect of Hornsea Three on the Conservation Area will, therefore be of **minor adverse** significance, which is not significant in EIA terms.



#### Shotesham Conservation Area

5.11.1.129 Shotesham Conservation Area is located on the east side of the A140 road, approximately 3.8 km south east of the onshore HVDC converter/HVAC substation at its nearest point.

#### *Magnitude of impact*

5.11.1.130 Hornsea Three would have no physical impact on the Conservation Area and any impact would be on its setting. A relatively small part of the Conservation Area lies within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint at the junction of Norwich Road and Eastells Lane (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the Conservation Area. The onshore HVDC converter/HVAC substation would not be visible from this viewpoint, nor in practice is it likely to be from most other locations within the Conservation Area. The magnitude of impact is assessed as being minor.

#### *Sensitivity of receptor*

5.11.1.131 The Conservation Area contains a total of 32 listed buildings. Many of the listed buildings, including The Hall, listed at Grade I and Dairy Farmhouse Barn, listed at Grade II\* are either outside the ZTV or have been screened out for other reasons.

5.11.1.132 The heritage values of the Conservation Area are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the buildings, and structures within the Conservation Area. The historical value is largely illustrative;
- Aesthetic - The value derives from the design value of the Conservation Area in terms of its expression of settlement architecture; and
- Communal – The value of the Conservation Area derives from its symbolic value as part of the local community.

5.11.1.133 The Conservation Area is of medium sensitivity. The setting of the listed buildings within the Conservation Area is primarily their relationship with each other and the Conservation Area itself. The setting of the Conservation Area is formed primarily by its relationship with the surrounding open land.

#### *Significance of the effect*

5.11.1.134 Overall, the sensitivity of the asset is considered to be medium and the magnitude of impact (as a result of slight visual changes to the setting) is deemed to be minor. The effect of Hornsea Three on the Conservation Area will therefore be of **minor adverse** significance which is not significant in EIA terms.

#### Trowse Newton Conservation Area

5.11.1.135 Trowse Newton Conservation Area is located on either side of the River Yare, approximately 4.1 km north east of the onshore HVDC converter/HVAC substation at its nearest point.

#### *Magnitude of impact*

5.11.1.136 Hornsea Three would have no physical impact on the Conservation Area and any impact would be on its setting. A relatively small part of the Conservation Area lies within the ZTV of the onshore HVDC converter/HVAC substation. A visualisation from a viewpoint on the north side of Bracondale (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the Conservation Area and indicates that the onshore HVDC converter/HVAC substation would be almost entirely screened by landform and woodland. The magnitude of impact is assessed as being minor.

#### *Sensitivity of receptor*

5.11.1.137 The Conservation Area contains a total of six listed buildings of which one Church of St Andrew (List Entry Number 1050444) is listed at Grade I and the remainder (list entry numbers 1169781, 1169788, 1306380, 1373213 and 1423347) are listed at Grade II.

5.11.1.138 A Conservation Area appraisal has been undertaken (South Norfolk Council, 2012).

5.11.1.139 The Conservation Area appraisal notes that “Trowse is situated on the outskirts of Norwich, from which it is separated by the river Yare. The presence of low-lying meadows along the valley and resistance by the Crown Point Estate to new development prevented the village from being engulfed by the City’s suburban sprawl...on the slopes of the valley sides, the open view southwards across agricultural land has now been cut off by the new road embankment” (South Norfolk Council, 2012).

5.11.1.140 The heritage values of the Conservation Area are as follows:

- Evidential and Historical – The evidential value derives primarily from the fabric of the buildings, and structures within the Conservation Area. The historical value is largely illustrative;
- Aesthetic - The value derives from the design value of the Conservation Area in terms of its expression of settlement architecture; and
- Communal – The value of the Conservation Area derives from its symbolic value as part of the local community.

5.11.1.141 The Conservation Area is of medium sensitivity. The setting of the listed buildings within the Conservation Area is primarily their relationship with each other and the Conservation Area itself. The setting of the Conservation Area is formed primarily by its relationship with the built development of Norwich and the open land to the east. The Conservation Area is divided from the onshore HVDC converter/HVAC substation by the A146 road, which in effect provides the southern boundary of its setting.

*Significance of the effect*

5.11.1.142 Overall, the sensitivity of the asset is considered to be medium and the magnitude of impact (as a result of slight visual changes to the setting) is deemed to be minor. The effect of Hornsea Three on the Conservation Area will therefore be of **minor adverse** significance (at most), which is not significant in EIA terms.

**Registered Parks and Gardens – onshore HVAC booster station**

5.11.1.143 Onshore HVAC booster station screening (see volume 6, annex 5.5: Screening Assessment - Onshore HVAC Booster Station) has indicated that there are no registered parks and gardens located within the Hornsea Three historic environment study area, that fall within the ZTV of the onshore HVAC booster station and which require further assessment.

**Registered Parks and Gardens - onshore HVDC converter/HVAC substation**

5.11.1.144 There are two registered parks and gardens located within the Hornsea Three historic environment study area, outside the built development of Norwich that fall within the ZTV of the onshore HVDC converter/HVAC substation. They are discussed below.

Crown Point

5.11.1.145 Crown Point (list entry number 1001480) registered park and garden is located approximately 4.8 km north east of the onshore HVDC converter/HVAC substation. The registered park and garden is located at the edge of Norwich City. The designated asset comprises gardens designed in the mid-19th century by William Broderick Thomas and altered at the beginning of the 20th century by Edward Boardman, set in a late 18th to early 19th century park. The registered park and garden contains three listed buildings, two of which (list entry numbers 1376816 and 1376817 are listed at Grade II and one, list entry number 1373212, Whitlingham Hospital Blocks 04, 05, 06, is listed at Grade II\*.

*Magnitude of impact*

5.11.1.146 Hornsea Three would have no physical impact on the registered park and garden and any impact would be on its setting. A visualisation from a viewpoint on the north side of Bracondale (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from a point some 500 m west of the registered park and garden and shows that the onshore HVDC converter/HVAC substation would be almost entirely screened by landform and woodland. In practice, in the direction of the proposed onshore HVDC converter/HVAC substation there is significant screening from vegetation and buildings and there would be few if any views.

5.11.1.147 The magnitude of impact on the designated assets at the registered park and garden, including the registered park and garden itself, is assessed as being at most minor.

*Sensitivity of receptor*

5.11.1.148 The registered park and garden comprises a 19th century park. The heritage values of the registered park and garden are as follows:

- Evidential and Historical – The value derives from the fabric of the designed landscape. The historical value is partly illustrative, but there are associations with architects and garden designers as well as patrons;
- Aesthetic - The value derives from the layout of the designed landscape, largely planned; and
- Communal - This value derives from its symbolic value as part of the local community.

5.11.1.149 The registered park and garden is of high sensitivity. Setting makes a significant contribution to the sensitivity of the registered park and garden. The registered park and garden comprises the setting of the designated assets contained therein.

5.11.1.150 The registered park and garden lies to the east of the village of Trowse Newton and is bounded to the south west by Kirby Road, to the north east and north by Whitlingham Lane, and to the east by farmland. The A47 southern bypass runs south of the mansion, isolating the southern corner of the park. The designated asset lies on high ground, the generally level park falling away to the north and north east towards the valley of the River Yare.

*Significance of the effect*

5.11.1.151 Overall, the sensitivity of the asset is considered to be high and the magnitude of impact (as a result of at most slight visual changes to the setting of the designated assets at the registered park and garden, including the registered park and garden itself) would be minor. The effect of Hornsea Three on the registered park and garden will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

Intwood Hall

5.11.1.152 Intwood Hall (list entry number 1000320), located approximately 1.2 km west of the onshore HVDC converter/HVAC substation. The registered park and garden contains four listed buildings, three of which (list entry numbers 1050543, 1306353 and 1373137 are listed at Grade II and one, list entry number 1373136, the Church of All Saints, is listed at Grade II\*. A further Grade II listed building, 1306366, is located approximately 250 m west of Intwood Hall and is assessed with the registered park and garden. The registered park and garden is registered at Grade II\*.

*Magnitude of impact*

5.11.1.153 Hornsea Three would have no physical impact on the registered park and garden and any impact would be on its setting. A visualisation from a viewpoint on Intwood Road, within the registered park and garden and some 50 m south of the Church of All Saints (see volume 6, annex 5.7: Historic Environment Visualisations) has been prepared. This shows the existing and proposed views from the registered park and garden and shows that the onshore HVDC converter/HVAC substation would be almost entirely screened by landform and woodland. In addition, views from the Church of All Saints would be screened by vegetation. The magnitude of impact on the designated assets at the registered park and garden, including the registered park and garden itself, is assessed as being minor.

*Sensitivity of receptor*

5.11.1.154 The registered park and garden comprises a 19th century park, incorporating a garden dating from the 16th century onwards. The principal building is unlisted. The list entry description notes that the road which cuts through the park is hidden behind a hedge and beyond it the ploughed section of the park is backed by enclosing plantations which terminate the view from the Hall.

5.11.1.155 The heritage values of the registered park and garden are as follows:

- Evidential and Historical – The value derives from the fabric of the designed landscape. The historical value is partly illustrative, but there are associations with architects and garden designers as well as patrons;
- Aesthetic - The value derives from the layout of the designed landscape, largely planned; and
- Communal - This value derives from its symbolic value as part of the local community.

5.11.1.156 The registered park and garden is of high sensitivity. Setting makes a significant contribution to the sensitivity of the registered park and garden. The registered park and garden comprises the setting of the designated assets contained therein.

*Significance of the effect*

5.11.1.157 Overall, the sensitivity of the asset is considered to be high and the magnitude of impact (as a result of slight visual changes to the setting of the designated assets at the registered park and garden, including the registered park and garden itself) is deemed to be and minor. The effect of Hornsea Three on the registered park and garden will therefore be of **minor adverse** significance, which is not significant in EIA terms.

**Construction works at Hornsea Three landfall area and along the onshore cable corridor (including compounds, storage areas and accesses) could result in temporary impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.**

5.11.1.158 There are a number of designated heritage assets within the Hornsea Three historic environment study area, along the onshore cable corridor. Many of these lie within the 5 km and 10 km buffer used for the onshore HVAC booster station and HVDC converter/HVAC substation. These include Baconsthorpe Castle, the designated assets at Salle, the churches at Little Melton and the Intwood Hall registered park and garden. Those assets are assessed in the section on the onshore HVAC booster station and the onshore HVDC converter/HVAC substation from paragraph 5.11.1.3 et seq above. These assessments include the impact if any, of the proposed Hornsea Three onshore cable corridor on the setting of these assets.

5.11.1.159 Designated heritage assets within the Hornsea Three historic environment study area along the onshore cable corridor or compound areas that do not lie within the 5 km and 10 km buffer used for the onshore HVAC booster station and HVDC converter/HVAC substation include: Round barrow south east of the Lodges (list entry number 1003623), a SM, the Church of All Saints Including Boundary Wall to Churchyard, Weston Longville (List entry number 1372689), the church of St Peter, Easton (list entry number 1305921) each listed at Grade I, Church of St Michael And All Angels, Booton (list entry number 1342776), Church of St Faith, Little Witchingham (list entry number 1342803), Church of St John The Baptist, Alderford (list entry number 1076888), Great Witchingham Hall (list entry number 1076861), Church of St Andrew, Attlebridge (list entry number 1372661) and Church of St Margaret, Morton on the Hill (list entry number 1051548), each listed at Grade II\* and Blickling conservation area.

*Magnitude of impact*

5.11.1.160 Although there may be a degree of visibility of the proposed construction work (including the main compound) from some of those designated heritage assets within the Hornsea Three historic environment study area, the impacts on the settings of these heritage assets is predicted to be of local spatial extent, medium term duration, continuous and with full reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be negligible.

*Sensitivity of receptor*

5.11.1.161 The assets affected are nationally designated as SMs, as at Grade II, Grade II\* and Grade I listed buildings, as Registered Parks and Gardens and as conservation areas and on this basis, are deemed to be of low to medium vulnerability, low recoverability and medium to high value. The sensitivity of the receptor is therefore, considered to be medium to high.



*Significance of Effect*

5.11.1.162 Overall, the sensitivity of the receptor is considered to be medium to high and the magnitude of impact is deemed to be negligible. The effect will, therefore, be of **negligible to minor adverse** significance, which is not significant in EIA terms.

**Construction works at the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.**

*Magnitude of impact*

5.11.1.163 Given the wide-ranging nature of the historic landscape, the impact is predicted to be of local spatial extent, short term duration, continuous and reversible, and would affect the receptor directly. The magnitude is, therefore, considered to be minor.

*Sensitivity of receptor*

5.11.1.164 The areas in which the onshore HVAC booster station and onshore HVDC converter/HVAC substation are located have seen field boundary removal since the 19th century and the historic landscape is now rather degraded. On this basis, the historic landscape is considered to be of low sensitivity.

*Significance of the effect*

5.11.1.165 Overall, the sensitivity of the historic landscape is considered to be low and the magnitude of impact is deemed to be minor. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

**Construction works at Hornsea Three landfall area, along the Hornsea Three onshore cable corridor (including compounds, storage areas and accesses) could result in temporary impacts on the overall historic landscape.**

5.11.1.166 For the Hornsea Three landfall area and the onshore cable corridor, any impacts on the overall historic landscape would be negligible, short to medium term and reversible. On this basis, the effects are unlikely to be significant and a detailed assessment is not considered to be warranted.

*Magnitude of impact*

5.11.1.167 Given the wide-ranging nature of the historic landscape, the impact is predicted to be of local spatial extent, short term duration, continuous and reversible, and would affect the receptor directly. The magnitude is, therefore, considered to be minor.

*Sensitivity of receptor*

5.11.1.168 The areas in which the landfall area and onshore cable corridor are located have seen field boundary removal since the 19th century and the historic landscape is now rather degraded. On this basis, the historic landscape is considered to be of low sensitivity.

*Significance of the effect*

5.11.1.169 Overall, the sensitivity of the historic landscape is considered to be low and the magnitude of impact is deemed to be minor. The effect will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

**Future monitoring**

5.11.1.170 Given the measures outlined in Table 5.13 and Table 5.14, no historic environment monitoring during the construction phase is considered necessary.

**5.11.2 Operation and maintenance phase**

5.11.2.1 The impacts of the onshore operation and maintenance of Hornsea Three have been assessed on the historic environment. The environmental impacts arising from the operation and maintenance of Hornsea Three are listed in Table 5.8 along with the maximum design scenario against which each operation and maintenance phase impact has been assessed. Those operation and maintenance phase impacts on the settings of heritage assets are a continuation of those which arise during the construction phase, rather than a new impact arising.

5.11.2.2 A description of the potential effect on historic environment receptors caused by each identified impact is given below.

**The operation and maintenance of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in long-term reversible impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.**

5.11.2.3 Impacts during the operation and maintenance phase of the Hornsea Three onshore cable corridor, the onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect the setting of cultural heritage features. Such impacts and effects would be of a very similar nature to those described and assessed under construction effects although during operation all proposed the restoration of hedgerows and landscape planting will have been completed (see paragraphs 5.11.1.7 to 5.11.1.157 and the summary in Table 5.17). The effect of the operation and maintenance phase of Hornsea Three will, therefore be of **moderate adverse** significance, which is significant in EIA terms.

The operation and maintenance of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in long-term impacts on the overall historic landscape.

- 5.11.2.4 Impacts during the operation and maintenance phase of the onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect the character of the overall historic landscape. Such impacts and subsequent effects would be of a very similar nature to those described and assessed under construction effects, although during operation all proposed restoration of elements of the historic landscape (backfilling of cable trenches, restoration of hedgerows etc), would have been completed (see summary in Table 5.17). The effect of the operation and maintenance phase of Hornsea Three will, therefore be of **minor adverse** significance, which is not significant in EIA terms.

**Future monitoring**

- 5.11.2.5 No historic environment monitoring during the operation and maintenance phase is considered necessary.

**5.11.3 Decommissioning phase**

- 5.11.3.1 The impacts of the onshore decommissioning of Hornsea Three have been assessed on the historic environment. The environmental effects arising from the decommissioning of Hornsea Three are listed in Table 5.8 along with the maximum design scenario against which each decommissioning phase impact has been assessed.
- 5.11.3.2 A description of the potential effect on historic environment receptors caused by each identified impact is given below.

Decommissioning works at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and registered parks and gardens.

- 5.11.3.3 Impacts during the decommissioning phase of the onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect the setting of heritage features. Such impacts would be of a very similar nature to those described and assessed under construction effects (see paragraphs 5.11.1.7 to 5.11.1.165 and the summary in Table 5.17) and would include the presence of plant and machinery during the decommissioning process. However, these impacts would be restricted to localised and short to medium term temporary views of demolition activity. The primary effects on heritage assets arising from Hornsea Three would derive from the permanent onshore HVAC booster station and HVDC converter/HVAC substation, therefore greater focus is placed on effects arising during construction, in particular at the end of that process when the structures are built. Therefore, the effect of the decommissioning phase of Hornsea Three will therefore, be of **negligible** to **minor adverse** significance, which is not significant in EIA terms.

Decommissioning works at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.

- 5.11.3.4 Impacts during the decommissioning phase of the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect the character of the overall historic landscape. Such impacts and subsequent effects would be of a very similar nature to those described and assessed under construction effects (see summary in Table 5.17) and would include the presence of plant and machinery during the decommissioning process. The primary effects on heritage assets arising from Hornsea Three would derive from the permanent onshore HVAC booster station and therefore greater focus is placed on effects arising during construction, in particular at the end of that process when the structures are built. Therefore, the effect of the decommissioning phase of Hornsea Three will, be of **negligible** significance, which is not significant in EIA terms.

**Future monitoring**

- 5.11.3.5 No historic environment monitoring during the decommissioning phase is considered necessary.

**5.12 Cumulative Effect Assessment methodology**

**5.12.1 Screening of other projects and plans into the Cumulative Effect Assessment**

- 5.12.1.1 The Cumulative Effect Assessment (CEA) takes into account the impact associated with Hornsea Three together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise undertaken as part of the 'CEA long list' of projects (see volume 4, annex 5.2 and 5.3: Cumulative Effects Screening Matrix and Location of Cumulative Schemes). Each project on the CEA long list has been considered on a case by case basis for scoping in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.
- 5.12.1.2 In undertaking the CEA for Hornsea Three, it is important to bear in mind that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside Hornsea Three. For example, relevant projects and plans that are already under construction are likely to contribute to cumulative impact with Hornsea Three (providing effect or spatial pathways exist), whereas projects and plans not yet approved or not yet submitted are less certain to contribute to such an impact, as some may not achieve approval or may not ultimately be built due to other factors. For this reason, all relevant projects and plans considered cumulatively alongside Hornsea Three have been allocated into 'Tiers', reflecting their current stage within the planning and development process. This allows the CEA to present several future development scenarios, each with a differing potential for being ultimately built out. Appropriate weight may therefore be given to each Tier in the decision making process when considering the potential cumulative impact associated with Hornsea Three (e.g. it may be considered that greater weight can be placed on the Tier 1 assessment relative to Tier 2). An explanation of each tier is included below:

- Tier 1: Hornsea Three considered alongside:
  - Those with consent, and, where applicable (i.e. for low carbon electricity generation projects), that have been awarded a Contract for Difference but have not been implemented; and/or
  - Those currently operational that were not operational when baseline data was collected, and/or those that are operational but have an on-going impact.
- Tier 2: All projects/plans considered in Tier 1, as well as:
  - Those project/plans that have consent but, where relevant (i.e. for low carbon electricity generation projects) have no Contract for Difference; and/or
  - Submitted but not yet determined.
- Tier 3: All projects/plans considered in Tier 2, as well as those on relevant plans and programmes likely to come forward but have not yet submitted an application for consent (the PINS programme of projects and the adopted development plan including supplementary planning documents are the most relevant sources of information from the relevant planning authorities regarding planned major works being consulted upon, but not yet the subject of a consent application). Specifically, this Tier includes all projects where the developer has advised PINS in writing that they intend to submit an application in the future, those projects where a Scoping Report is available and/or those projects which have published a PEIR.

5.12.1.3 It is noted that offshore wind farms seek consent for a maximum design scenario and the as built offshore wind farm will be selected from the range of consented scenarios. In addition, the maximum design scenario quoted in the application (and the associated Environmental Statement) are often refined during the determination period of the application. For example, it is noted that the Applicant for Hornsea Project One considered a maximum of 332 turbines within the Environmental Statement, but has gained consent for 240 turbines. Similarly, Hornsea Project Two has gained consent for an overall maximum number of turbines of 300, as opposed to 360 considered in the Environmental Statement and the as built number of turbines is likely to be less than this. A similar pattern of reduction in the project envelope from that assessed in the Environmental Statement, to the consented envelope and the 'as built' project is also seen across other offshore wind farms of relevance to this CEA. This process of refinement can result in a reduction to associated project parameters, for example, the number of cable trenches or the height of onshore substations. The CEA presented in this historic environment chapter has been undertaken on the basis of information presented in the Environmental Statements for the other projects, plans and activities. Given that this broadly represents a maximum design scenario, the level of impact on the historic environment would likely be reduced from those presented here.

5.12.1.4 The specific projects scoped into this CEA and the tiers into which they have been allocated, are outlined in Table 5.15. The projects included as operational in this assessment have been commissioned since the baseline studies for Hornsea Three were undertaken and as such were excluded from the baseline assessment.

5.12.1.5 No Tier 1 projects have been identified and therefore, only Tier 2 and 3 assessments have been undertaken.



Table 5.15: List of other projects and plans considered within the CEA.

Tier	Hornsea Three Phase	Project/Plan	Distance from Hornsea Three	Details	Date of Construction (if applicable)	Overlap of construction phase with Hornsea Three construction phase	Overlap of operation phase with Hornsea Three operation phase
2	Construction/Operation and Maintenance/Decommissioning	C/7/2014/7030	0 m	(I) For a southern extension to Mangreen Quarry and ancillary works with progressive restoration to agriculture and nature conservation by the importation of inert restoration materials; (II) Retention of existing consented facilities at Mangreen Quarry; (III) Establishment of crossing point over Mangreen Lane; and (IV) Proposed variation to approved restoration scheme at Mangreen Quarry.  Approved 2 October 2015	2019 to 2024	Yes	Yes
	Construction/Operation and Maintenance	2014/2611	21 m	The erection of 890 dwellings; the creation of a village heart to feature an extended primary school, a new village hall, a retail store and areas of public open space; the relocation and increased capacity of the allotments; and associated infrastructure including public open space and highway works.  Approved 1 November 2016	2018 to 2018	Yes	Yes
	Construction/Operation and Maintenance/Decommissioning	20170789	55 m	Erection of Grain Store (Revised Proposal)  Approved 19 July 2017	2020	Yes	Yes
	Construction/Operation and Maintenance	2011/1804/O	0 m	Residential led mixed use development of 1196 dwellings and associated uses including Primary School, Local Services (up to 1,850 sq. mtrs (GIA) of A1, A2, A3, A4, A5, D1 & B1 uses) comprising shops, small business units, community facilities/doctors' surgeries, sports pitches, recreational space, equipped areas of play and informal recreation spaces. Extension to Thickthorn Park and Ride including new dedicated slip road from A11 Approved 22 July 2013  Reserved matters (2017/0151) following outline planning permission 2011/1804/O - proposed residential development (phase A1-B) comprising 91 dwellings including 20% affordable housing and associated open space and infrastructure.  Approved 30 August 2016	Present to 2026	Yes	Yes
3	Construction/Operation and Maintenance/Decommissioning	EN010079	0 m	Norfolk Vanguard is a proposed offshore windfarm with an approximate capacity of 1800 MW off the coast of Norfolk.  Pre-application stage PEIR October 2017	2020 to 2024	Yes	Yes

## 5.12.2 Maximum design scenario

5.12.2.1 The maximum design scenarios identified in Table 5.16 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative impact presented and assessed in this section have been selected from the details provided in the Hornsea Three project description (volume 1, chapter 3: Project Description), as well as the information available on other projects, plans and activities, in order to inform a 'maximum design scenario'. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the project Design Envelope (e.g. different onshore HVDC converter/HVAC substation parameters), to that assessed here be taken forward in the final design scheme.

**Table 5.16: Maximum design scenario considered for the assessment of potential cumulative impacts on historic environment.**

Potential impact	Maximum design scenario	Justification
<b>Construction phase</b>		
Construction of the onshore elements of Hornsea Three (including any stripping required for storage, compounds and accesses) could result in cumulative permanent loss of, or damage to buried archaeological remains.	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered
Construction works at the site of the onshore HVAC booster station and HVDC converter/HVAC substation could potentially result in temporary cumulative impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered
Construction works at Hornsea Three landfall area, along the onshore cable corridor (including compounds, storage areas and accesses) could result in temporary cumulative impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered

Potential impact	Maximum design scenario	Justification
Construction works at the onshore HVAC booster station and HVDC converter/HVAC substation could result in temporary cumulative impacts on the overall historic landscape	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered
Construction works at the Hornsea Three landfall area, along the onshore cable corridor (including compounds and construction site accesses) could result in temporary cumulative impacts on the overall historic landscape.	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered
<b>Operation and maintenance phase</b>		
The operation and maintenance of the onshore HVAC booster station and HVDC converter/HVAC substation could result in long-term reversible cumulative impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered
The operation and maintenance of the onshore HVAC booster station and HVDC converter/HVAC substation could result in long-term cumulative impacts on the overall historic landscape	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered
<b>Decommissioning phase</b>		
Decommissioning of the onshore HVAC booster station and HVDC converter/HVAC substation could result in temporary impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered

Potential impact	Maximum design scenario	Justification
Decommissioning of the onshore HVAC booster station and HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape	Tier 2 <ul style="list-style-type: none"> <li>• C/7/2014/7030</li> <li>• 2014/2611</li> <li>• 2015/2630</li> <li>• 20170789</li> </ul> Tier 3 <ul style="list-style-type: none"> <li>• EN010079</li> </ul>	Outcome of the CEA will be greatest when the greatest number of other schemes, present or planned, is considered

## 5.13 Cumulative Effect Assessment

5.13.1.1 A description of the significance of cumulative effects upon the historic environment receptors arising from each identified impact is given below.

### 5.13.2 Construction phase

**Construction works of the onshore elements of Hornsea Three (including any stripping required for storage areas, compounds and accesses) could result in cumulative permanent loss of or damage to, buried archaeological remains.**

#### Tier 2

##### Magnitude of impact

5.13.2.1 The cumulative impact arising from permanent loss of or damage to, buried archaeological remains is most likely to arise from the consented southern extension to Mangreen Quarry (C/7/2014/7030). This and impacts from the other Tier 2 developments would not differ significantly from that of Hornsea Three because they may involve the removal of archaeological remains which are adjacent to one another (i.e. once the asset has been affected by one development then subsequent developments are unlikely to increase the impact further). The impact is predicted to be of local spatial extent, medium term duration, continuous and with no reversibility. It is predicted that the impact will affect the receptors directly. The magnitude is therefore, considered to be moderate.

##### Sensitivity of receptor

5.13.2.2 Assets may represent settlement and/ or funerary and/ or agricultural activity and detailed investigation is more likely to make a significant contribution to local rather than regional research objectives. The assets are deemed to be of low to medium vulnerability, low recoverability and low to medium value. The sensitivity of the receptor is therefore, considered to be low to medium.

##### Significance of Effect

5.13.2.3 Overall, the sensitivity of the receptor is considered to be low to medium and the magnitude is deemed to be moderate. The cumulative effect will, therefore, be of **minor** or **moderate adverse** significance, which is significant in EIA terms.

#### Tier 3

##### Magnitude of impact

5.13.2.4 ENO10079, the Norfolk Vanguard onshore cable route, crosses the onshore cable corridor at a point to the south of Salle Park. The cumulative impact of this scheme would be on buried remains and would be limited in terms of its spatial extent to the vicinity of the crossing. The impact would not differ significantly from that of Hornsea Three and is predicted to be of local spatial extent, medium term duration, continuous and with no reversibility. It is predicted that the impact will affect the receptors directly. The magnitude is therefore, considered to be moderate.

##### Sensitivity of receptor

5.13.2.5 Assets may represent settlement and/ or funerary and/ or agricultural activity and detailed investigation is more likely to make a significant contribution to local rather than regional research objectives. The assets are deemed to be of low to medium vulnerability, low recoverability and low to medium value. The sensitivity of the receptor is therefore, considered to be low to medium.

##### Significance of Effect

5.13.2.6 Overall, the sensitivity of the receptor is considered to be low to medium and the magnitude is deemed to be moderate. The cumulative effect will, therefore, be of **minor** or **moderate adverse** significance, which is significant in EIA terms.

**Construction works at the site of the onshore HVAC booster station and HVDC converter/HVAC substation could potentially result in temporary cumulative impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.**

#### Tier 2

##### Magnitude of impact

5.13.2.7 C/7/2014/7030 is located close to several listed buildings, including Mangreen Hall, listed at Grade II\* (List Entry Number 1366150), Mangreen Lodge (List Entry Number 1050519) and. Barn at Hall Farm (List Entry Number 1170403).

5.13.2.8 The cumulative impact would not differ significantly from that of Hornsea Three and is predicted to be of local spatial extent, medium term duration, continuous and with no reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be minor.



Sensitivity of receptor

- 5.13.2.9 The cumulative assets are nationally designated at Grade II and Grade II\* and on this basis, are deemed to be of low to medium vulnerability, low recoverability and medium to high value. The sensitivity of the receptor is therefore, considered to be medium to high.

Significance of Effect

- 5.13.2.10 Overall, the sensitivity of the receptor is considered to be medium to high and the magnitude is deemed to be minor. The cumulative effect will, therefore, be **minor** or **moderate adverse**, which is significant in EIA terms.

**Tier 3**

Magnitude of impact

- 5.13.2.11 ENO10079, which includes the Norfolk Vanguard onshore cable route, crosses the onshore cable corridor at a point to the south of Salle Park. The cumulative impact of this scheme if any, would be on the setting of Salle Park and would not differ significantly from that of Hornsea Three because they may involve the removal of archaeological remains which are adjacent to one another and is predicted to be of local spatial extent, medium term duration, continuous and with no reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is, therefore, considered to be minor.

Sensitivity of receptor

- 5.13.2.12 The cumulative assets are nationally designated at Grade II and Grade II\* and on this basis, are deemed to be of low to medium vulnerability, low recoverability and medium to high value. The sensitivity of the receptor is therefore, considered to be medium to high.

Significance of Effect

- 5.13.2.13 Overall, the sensitivity of the receptor is considered to be medium to high and the magnitude is deemed to be minor. The cumulative effect will, therefore, be **minor** or **moderate adverse**, which is significant in EIA terms.

**Construction works at Hornsea Three landfall area, along the onshore cable corridor (including compounds, storage areas and accesses) could result in temporary cumulative impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.**

**Tier 2**

Magnitude of impact

- 5.13.2.14 The cumulative impact would not differ significantly from that of Hornsea Three and is predicted to be of local spatial extent, medium term duration, continuous and with no reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be negligible.

Sensitivity of receptor

- 5.13.2.15 The assets are nationally designated at Grade II and Grade II\* and on this basis, are deemed to be of low to medium vulnerability, low recoverability and medium to high value. The sensitivity of the receptor is therefore, considered to be medium to high.

Significance of Effect

- 5.13.2.16 Overall, the sensitivity of the receptor is considered to be medium to high and the magnitude is deemed to be negligible. The cumulative effect will, therefore, be of **negligible** to **minor adverse** significance, which is not significant in EIA terms.

**Tier 3**

Magnitude of impact

- 5.13.2.17 ENO10079, the Norfolk Vanguard onshore cable route, crosses the onshore cable corridor at a point to the south of Salle Park. The cumulative impact of this scheme would not differ significantly from that of Hornsea Three and is predicted to be of local spatial extent, medium term duration, continuous and with no reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be negligible.

Sensitivity of receptor

- 5.13.2.18 The assets are nationally designated at Grade II and Grade II\* and on this basis, are deemed to be of low to medium vulnerability, low recoverability and medium to high value. The sensitivity of the receptor is therefore, considered to be medium to high.

Significance of Effect

- 5.13.2.19 Overall, the sensitivity of the receptor is considered to be medium to high and the magnitude is deemed to be negligible. The cumulative effect will, therefore, be of **negligible** to **minor adverse** significance, which is not significant in EIA terms.

**Construction works at the onshore HVAC booster station HVDC converter/HVAC substation could result in temporary cumulative impacts on the overall historic landscape.**

**Tier 2**

Magnitude of impact

- 5.13.2.20 The impact is predicted to be of local spatial extent, medium term duration, continuous and with no reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be minor.

Sensitivity of receptor

- 5.13.2.21 The areas in which the onshore HVAC booster station and HVDC converter/HVAC substation are located have seen field boundary removal since the 19th century and the historic landscape is now rather degraded. The assets are deemed to be of low to medium vulnerability, low recoverability and low value. The sensitivity of the receptor is therefore, considered to be low.

Significance of Effect

- 5.13.2.22 Overall, it is predicted that the sensitivity of the receptor is considered to be low and the magnitude is deemed to be minor. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

**Tier 3**

Magnitude of impact

- 5.13.2.23 EN010079, the Norfolk Vanguard onshore cable route, crosses the onshore cable corridor at a point to the south of Salle Park and therefore is located some distance from the onshore HVAC booster station and HVDC converter/HVAC substation. The cumulative impact would not differ significantly from that of Hornsea Three. The impact is predicted to be of local spatial extent, medium term duration, continuous and with no reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be minor.

Sensitivity of receptor

- 5.13.2.24 The areas in which the onshore HVAC booster station and HVDC converter/HVAC substation are located have seen field boundary removal since the 19th century and the historic landscape is now rather degraded. The assets are deemed to be of low to medium vulnerability, low recoverability and low value. The sensitivity of the receptor is therefore, considered to be low.

Significance of Effect

- 5.13.2.25 Overall, the sensitivity of the receptor is considered to be low and the magnitude is deemed to be minor. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

**Construction works at Hornsea Three landfall area, along the onshore cable corridor (including compounds, storage areas and accesses) could result in temporary cumulative impacts on the overall historic landscape.**

**Tier 2**

Magnitude of impact

- 5.13.2.26 For Hornsea Three landfall area and the onshore cable corridor, any impacts on the overall historic landscape would be short to medium term and reversible. The magnitude is considered to be minor.

Sensitivity of receptor

- 5.13.2.27 The areas in which the onshore HVAC booster station and HVDC converter/HVAC substation are located have seen field boundary removal since the 19th century and the historic landscape is now rather degraded. The assets are deemed to be of low to medium vulnerability, low recoverability and low value. The sensitivity of the receptor is therefore, considered to be low.

Significance of Effect

- 5.13.2.28 Overall, the sensitivity of the receptor is considered to be low and the magnitude is deemed to be negligible. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

**Tier 3**

Magnitude of impact

- 5.13.2.29 ENO10079, the Norfolk Vanguard onshore cable route, crosses the onshore cable corridor at a point to the south of Salle Park. The cumulative impact of this scheme would be short to medium term and reversible. The magnitude is considered to be minor.

Sensitivity of receptor

- 5.13.2.30 The areas in which the onshore HVAC booster station and HVDC converter/HVAC substation are located have seen field boundary removal since the 19th century and the historic landscape is now rather degraded. The assets are deemed to be of low to medium vulnerability, low recoverability and low value. The sensitivity of the receptor is therefore, considered to be low.

Significance of Effect

- 5.13.2.31 Overall, the sensitivity of the receptor is considered to be low and the magnitude is deemed to be negligible. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

**Future monitoring**

- 5.13.2.32 No historic environment monitoring to test the predictions made within the construction phase cumulative impact assessment is considered necessary.

### 5.13.3 Operation and maintenance phase

The operation and maintenance of the onshore HVAC booster station and HVDC converter/HVAC substation could result in long-term reversible cumulative impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.

#### *Tier 2 and Tier 3*

- 5.13.3.1 Impacts during the operation and maintenance phase of the onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect the setting of heritage assets. Such impacts and effects would be of a very similar nature and magnitude to those described and assessed under construction effects (see paragraphs 5.11.1.7 to 5.11.1.157 and the summary in Table 5.17). The effect will, therefore be of **moderate adverse** significance, which is significant in EIA terms.

The operation and maintenance of the onshore HVAC booster station and HVDC converter/HVAC substation could result in long-term cumulative impacts on the overall historic landscape.

#### *Tier 2 and Tier 3*

- 5.13.3.2 Impacts during the operation and maintenance phase of the onshore HVAC booster station and HVDC converter/HVAC substation may affect the character of the overall historic landscape. Such impacts and subsequent effects would be of a very similar nature to those described and assessed under construction effects (see summary in Table 5.17). The effect would therefore, be of **minor adverse** significance, which is not significant in EIA terms.

#### *Future monitoring*

- 5.13.3.3 No historic environment monitoring to test the predictions made within the operation and maintenance phase cumulative impact assessment is considered necessary.

### 5.13.4 Decommissioning phase

Decommissioning of the onshore HVAC booster station and HVDC converter/HVAC substation could result in temporary cumulative impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.

#### *Tier 2 and Tier 3*

- 5.13.4.1 Impacts during the decommissioning phase of the onshore HVAC booster station and the HVDC converter/HVAC substation may affect the setting of heritage assets. Such impacts would be of a very similar nature to those described and assessed under the construction phase. The effect will, therefore be of **negligible to minor adverse** significance, which is not significant in EIA terms.

Decommissioning of the onshore HVAC booster station and the HVAC substation and HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.

#### *Tier 2 and Tier 3*

- 5.13.4.2 Impacts during the decommissioning phase of the onshore HVAC booster station and the HVDC converter/HVAC substation may affect the overall historic landscape. Such impacts and effects would be of a very similar nature to those described and assessed under construction effects. The effect will, therefore be of **negligible** significance, which is not significant in EIA terms.

#### *Future monitoring*

- 5.13.4.3 No historic environment monitoring to test the predictions made within the decommissioning phase cumulative impact assessment is considered necessary.

## 5.14 Transboundary effects

- 5.14.1.1 A screening of transboundary impacts has been carried out and is presented in volume 4, annex 5.4: Transboundary Impacts Screening Note. This screening exercise identified that there was no potential for significant transboundary effects with regard to historic environment from Hornsea Three upon the interests of other EEA States.

## 5.15 Inter-related effects

- 5.15.1.1 Inter-relationships are considered to be the impacts and associated effects of different aspects of the proposal on the same receptor. These are considered to be:
- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the project (construction, operation and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three key project stages (e.g. noise effects from piling, the operation onshore HVDC converter/HVAC substation, and decommissioning).
  - Receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on historic environment (such as impact on the setting of a listed building, or scheduled monument, etc.) may interact to produce a different or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.
- 5.15.1.2 A description of the likely inter-related effects arising from Hornsea Three on historic environment is provided in chapter 11: Inter-Related Effects (Onshore).



## 5.16 Conclusion and summary

- 5.16.1.1 This chapter of the Environmental Statement has presented the results of the EIA for the potential impacts which may arise as a result of the onshore elements of Hornsea Three on the historic environment.
- 5.16.1.2 A series of desk based and field surveys of the Hornsea Three onshore cable corridor, onshore HVAC booster station area and onshore HVDC converter/HVAC substation area were undertaken throughout 2016 and 2017. This information has been collated to create an accurate picture of baseline conditions, from which the assessment of impacts and effects can be made.
- 5.16.1.3 The methods used to assess the magnitude of impact of the proposed change and significance of effects on the historic environment have regard to national and local standards and guidance.
- 5.16.1.4 The buried archaeological remains along the Hornsea Three onshore cable corridor, and at the onshore HVAC booster station and onshore HVDC converter/HVAC substation have been evaluated through a walkover survey and geophysical survey. Consultation has taken place with Historic England and Norfolk County Council to agree the methodologies for these surveys. These surveys have revealed a number of sites, including Bronze Age barrows, Roman settlement remains near Weybourne and coastal defences of the two world wars.
- 5.16.1.5 The significance of the effects of Hornsea Three on heritage assets during the construction phase varies from **negligible** to **moderate adverse**. The significance of effects during the operation and maintenance phase of Hornsea Three would range from **minor** to **moderate adverse**. Decommissioning effects would be **negligible** to **minor adverse**.
- 5.16.1.6 Cumulative impacts from projects screened into the assessment have been assessed using a tiered approach. The impacts are predicted to result in effects of **minor** and **moderate adverse** significance from the permanent loss of buried archaeological remains during the construction phase, and on the settings of heritage assets during the operation and maintenance phase.
- 5.16.1.7 Screening of potential transboundary impacts (as presented in volume 4, annex 5.4: Transboundary Impacts Screening Note) has identified that there was no potential for significant transboundary effects with regard to the historic environment.
- 5.16.1.8 A summary of the findings of the historic environment EIA are presented in Table 5.17.

Table 5.17: Summary of potential environment effects, mitigation and monitoring.

Description of impact	Measures adopted as part of the project	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional measures	Residual effect	Proposed monitoring
<b>Construction Phase</b>							
Construction of the onshore elements of Hornsea Three (including the stripping required for storage areas, compounds and accesses) could result in permanent loss of, or damage to, buried archaeological remains.	See construction phase of Table 5.13	Minor	Low to Medium	<b>Minor Adverse</b> (not significant in EIA terms)	None	N/A	None
Construction works at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could potentially result in temporary impacts on the settings of heritage assets including SMs, listed buildings, Conservation Areas and Registered Parks and Gardens.	See construction phase of Table 5.13	Negligible to Minor	Medium to High	<b>Negligible to Moderate Adverse</b> (not significant to significant in EIA terms)	None	N/A	None
Construction works at Hornsea Three landfall area, along the onshore cable corridor (including storage areas, compounds and accesses) could result in temporary impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.	See construction phase of Table 5.13	Negligible	Medium to High	<b>Negligible to Minor Adverse</b> (not significant in EIA terms)	None	N/A	None
Construction works at the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.	See construction phase of Table 5.13	Minor	Low	<b>Minor Adverse</b> (not significant in EIA terms)	None	N/A	None
Construction works at Hornsea Three landfall area, along the onshore cable corridor (including storage areas, compounds and accesses) could result in temporary impacts on the overall historic landscape.	See construction phase of Table 5.13	Negligible	Low	<b>Negligible</b> (not significant in EIA terms)	None	N/A	None

Description of impact	Measures adopted as part of the project	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional measures	Residual effect	Proposed monitoring
<b>Operation and Maintenance Phase</b>							
The operation and maintenance of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in long-term reversible impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.	See operation and maintenance phase of Table 5.13.	Minor	Medium to High	<b>Moderate Adverse</b> (significant in EIA terms)	None	N/A	None
The operation and maintenance of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in long-term impacts on the overall historic landscape.	See operation and maintenance phase of Table 5.13.	Minor	Low	<b>Minor Adverse</b> (not significant in EIA terms)	None	N/A	None
<b>Decommissioning Phase</b>							
Decommissioning of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.	See decommissioning phase of Table 5.13.	Negligible	Medium to High	<b>Negligible to Minor Adverse</b> (not significant in EIA terms)	None	N/A	None
Decommissioning of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.	See decommissioning phase of Table 5.13.	Negligible	Low	<b>Negligible</b> (not significant in EIA terms)	None	N/A	None



## 5.17 References

- Austin, L (2000) Palaeolithic and Mesolithic. In: Brown, N. and Glazebrook, J. (2000) Research and Archaeology: a Framework for the Eastern Counties, 2. Research Agenda and Strategy East Anglian Archaeology Occasional Paper No.8. Norwich, The Scole Archaeological Committee for East Anglia. p. 5-9.
- Beresford, M and Finberg, H.P.R. (1973) English Medieval Boroughs: A Hand-list. Newton Abbot, David & Charles.
- Brabner, J.H.F. ed. (c. 1893). The Comprehensive Gazetteer of England and Wales. London, William Mackenzie.
- Broadland District Council (2015) Development Management DPD. Norwich, Broadland District Council.
- Brown, N. and Glazebrook, J. (2000) Research and Archaeology: a Framework for the Eastern Counties, 2. Research Agenda and Strategy East Anglian Archaeology Occasional Paper No.8. Norwich, The Scole Archaeological Committee for East Anglia.
- Cantor, L. (1983) The Medieval Parks of England: A Gazetteer. Loughborough, Loughborough University of Technology.
- Chartered Institute for Archaeologists (2014) Code of Conduct. Reading, Chartered Institute for Archaeologists.
- Chartered Institute for Archaeologists (2014) Standard and Guidance for Historic Environment Desk Based Assessment. Reading, Chartered Institute for Archaeologists.
- Department for Communities and Local Government (2012) National planning policy framework. London, DCLG.
- Department for Energy and Climate Change (2011b) Electricity Networks Infrastructure (EN-5). London, The Stationery Office. Department for Environment, Food and Rural Affairs (2002). Multi-Agency Geographic Information for the Countryside. [Online]. Available at: <http://magic.defra.gov.uk>. (Accessed: 31/05/2012).
- Department of Culture, Media and Sport (2013) Scheduled Monuments and Nationally Important but non-scheduled Monuments. London, Department of Culture, Media and Sport.
- Department of Energy and Climate Change (2011a) Overarching National Policy Statement for Energy (EN-1). London, The Stationery Office.
- Drury, P. and McPherson, A. (2008). Conservation Principles. London: English Heritage.
- Ekwall, E. (1960) The Concise Oxford Dictionary of English Place Names. Oxford, Oxford University Press.
- Electricity Act 1989. (c. 29). London, The Stationery Office.
- Greater Norwich Development Partnership (2014) Joint Core Strategy. [Online]. Available at: <http://www.greaternorwichgrowth.org.uk/planning/joint-core-strategy/>.
- Highways Agency (2008) Design Manual for Roads and Bridges. London, Department for Transport.
- Highways Agency (2011) Design Manual for Roads and Bridges. *Volume 11. Section 3. Part2: Noise and Vibration*. November 2011.
- Historic England (2015) Planning Note 3: The Settings of Heritage Assets. London, Historic England.
- Historic England (2015) The Setting of Heritage Assets. London, Historic England. Historic England (2015) The Setting of Heritage Assets. London, Historic England.
- Landscape Institute and Institute for Environmental Management and Assessment (2013) Guidelines for landscape and visual impact assessment. 3rd ed. London, Routledge/Taylor & Francis Group.
- Lewis, S (1845) Topographical Dictionary of England. London, S. Lewis and Co.
- Margarey, I.D. (1973) Roman Roads in Britain. London, John Baker.
- Meaney, A. (1964) A Gazetteer of Early Anglo-Saxon Burial Sites. London, George Allen & Unwin.
- North Norfolk District Council (2008) Core Strategy. Cromer, North Norfolk District Council.
- Rippon, S. (2012) Historic landscape analysis. York, Council for British Archaeology.
- Sawyer, P.H. (1968) Anglo-Saxon Charters: an Annotated List and Bibliography. London, Royal Historical Society.
- South Norfolk Council (2015) South Norfolk Local Plan: Development Management Policies Document. Norwich, South Norfolk Council.
- Storey, N. (2010) Norfolk in the Second World War. Somerset, Halsgrove.
- Tate, W.E. and Turner, M.E. (1978) A Domesday of English Enclosure Acts and Awards. Reading, University of Reading.
- Wade-Martins, P. (1994) An Historical Atlas of Norfolk. Norwich, Norfolk Museums
- Williams, A. and Martin, G.H. (eds) (1992) Domesday Book. London, Penguin.