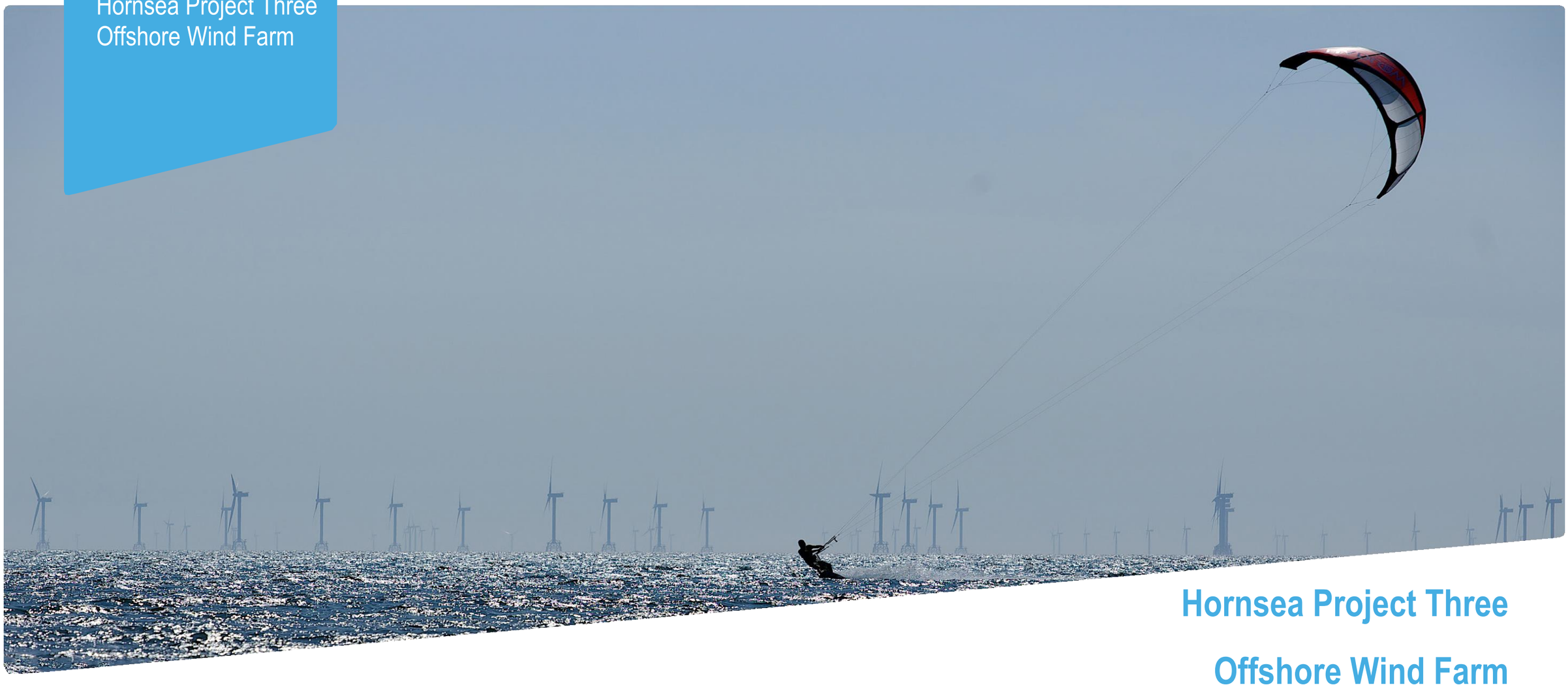
Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three

Offshore Wind Farm

Preliminary Environmental Information Report:
Chapter 5 – Historic Environment

Date: July 2017

Hornsea 3
Offshore Wind Farm

DONG energy

Environmental Impact Assessment

Preliminary Environmental Information Report

Volume 3

Chapter 5 – Historic Environment

Liability

This report has been prepared by RPS, with all reasonable skill, care and diligence within the terms of their contracts with DONG Energy Power (UK) Ltd.

Report Number: P6.3.5

Version: Final

Date: July 2017

This report is also downloadable from the Hornsea Project Three offshore wind farm website at:
www.dongenergy.co.uk/hornseaproject3

DONG Energy Power (UK) Ltd.

5 Howick Place,

London, SW1P 1WG

Front cover picture: Kite surfer near one of DONG Energy's UK offshore wind farms © DONG Energy Hornsea Project Three (UK) Ltd., 2016

Prepared by: RPS

Checked by: Andrew Guyton, Jennifer Brack, and Kieran Bell.

Accepted by: Sophie Banham

Approved by: Stuart Livesey

Table of Contents

List of Figures

List of Annexes

List of Tables

Glossary

Term	Definition
Bronze Age	The time period 2,000 - 700BC.
English Heritage	The Historic Buildings and Monuments Commission. Now replaced by Historic England
Iron Age	The time period 700BC - AD43.
Medieval	The time period AD450 - AD1540.
Mesolithic	The time period 10,000 - 3,500BC.
Modern	The time period 1901 onwards.
Post Medieval	The time period AD1540 to 1901.
Roman	The time period AD43 - AD410.
Upper Palaeolithic	The time period 30,000 - 10,000BC.
Light Detection and Ranging (LiDAR)	Is 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.

Acronyms

Acronyms	Description
CEA	Cumulative Effect Assessment
CoCP	Code of Construction Practice
DCLG	Department for Communities and Local
DCMS	Department of Culture, Media and Sport
DCO	Development Consent Order
DEFRA	Department for the Environment, Food and Rural Affairs
DPD	Development Plan Documents
ECR	Export Cable Route
EIA	Environmental Impact Assessment
ES	Environmental Statement
HER	Historic Environmental Record
HLC	Historic Landscape Character
MHWS	Mean High Water Springs
NHLE	National Heritage List for England
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NRHE	National Record for the Historic Environment
PEIR	Preliminary Environmental Information Report
PEIR	Preliminary Environmental Information Report
SM	Scheduled Monument
WSI	Written Scheme of Investigation
ZTV	Zone of Theoretical Visibility

Units

Unit	Description
GW	Gigawatt (power)
kV	Kilovolt (electrical potential)
kW	Kilowatt (power)
m	Metre (distance)
m^2	Metres squared (area)

5. Historic Environment

5.1 Introduction

5.1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary results of the Environmental Impact Assessment (EIA) of the onshore elements of the Hornsea Project Three offshore wind farm (hereafter referred to as Hornsea Three) relevant to the Historic Environment (namely the Hornsea Three landfall area, the onshore cable corridor search area, the onshore HVAC booster station, the onshore HVDC converter/HVAC substation and the interconnection with the Norwich Main National Grid substation), during its construction, operation and maintenance, and decommissioning. The onshore cable corridor search area comprises a 200 m wide corridor within which the refined onshore cable corridor (80 m wide) will be located. The refined cable corridor will be included in the application for Development Consent. The onshore HVAC booster station will only be required for the HVAC transmission option (see volume 1, chapter 3: Project Description).

5.1.1.2 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 Assessment - Onshore HVAC Booster Station.

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). This PEIR constitutes the Preliminary Environmental Information for Hornsea Three and sets out the findings of the EIA to date to support pre-application consultation activities required under the 2008 Act. The EIA will be finalised following completion of pre-application consultation and the Environmental Statement will accompany the application to the Secretary of State for Development Consent.

5.2.1.2 The PEIR will form the basis for Phase 2 Consultation which will commence on 27 July and conclude on 20 September 2017. At this point, comments received on the PEIR will be reviewed and incorporated (where appropriate) into the Environmental Statement, which will be submitted in support of the application for Development Consent scheduled for the second quarter of 2018.In particular, this PEIR chapter:

- Presents the existing environmental baseline established from desk studies, and consultation;
- Presents the potential environmental effects on Historic Environment arising from Hornsea Three, based on the information gathered and the analysis and assessments undertaken to date;
- 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 study area comprises the onshore elements of Hornsea three (as defined in 5.1.1.1) and the potential locations for the main compound, plus a 250 m buffer on either side (see Figure 5.1). For the assessment of designated assets, a wider buffer of 1 km has been used on either side of the onshore cable corridor search area and Hornsea Three landfall. This approach focuses the assessment while providing a context to nearby heritage assets. It is noted that impacts on the settings of designated assets arising from cable construction activities would be temporary and reversible and the study area for these assets is considered in this light. The potential locations of the main compounds are identified in volume 1, chapter 3: Project Description. Additional compounds will be required to facilitate the construction process and will be identified in the Environmental Statement.

5.3.1.2 Based on recent experience of similar developments, including the consented Hornsea Projects One and Two, were the approach was agreed with statutory consultees, those designated assets of the highest significance (Grade I and II* listed buildings and Scheduled Monuments (SMs)) located within a 10 km radius of the onshore HVDC converter/HVAC substation site and onshore HVAC booster station and those other designated heritage assets (e.g. Grade II listed buildings and Conservation Areas) within a 5 km radius of the onshore HVDC converter/HVAC substation and onshore HVAC booster station. have been screened to ascertain whether their settings are likely to be significantly affected by Hornsea Three (see volume 6, annex 5.4 for the screening of the onshore HVDC converter/HVAC substation and annex 5.5 for the screening of the onshore HVAC Booster Stations).

5.3.1.3 The scope of the PEIR assessment for hydrology and flood risk has been discussed with the local planning authorities leading up to the PEIR submission and further feedback is welcomed at this stage.

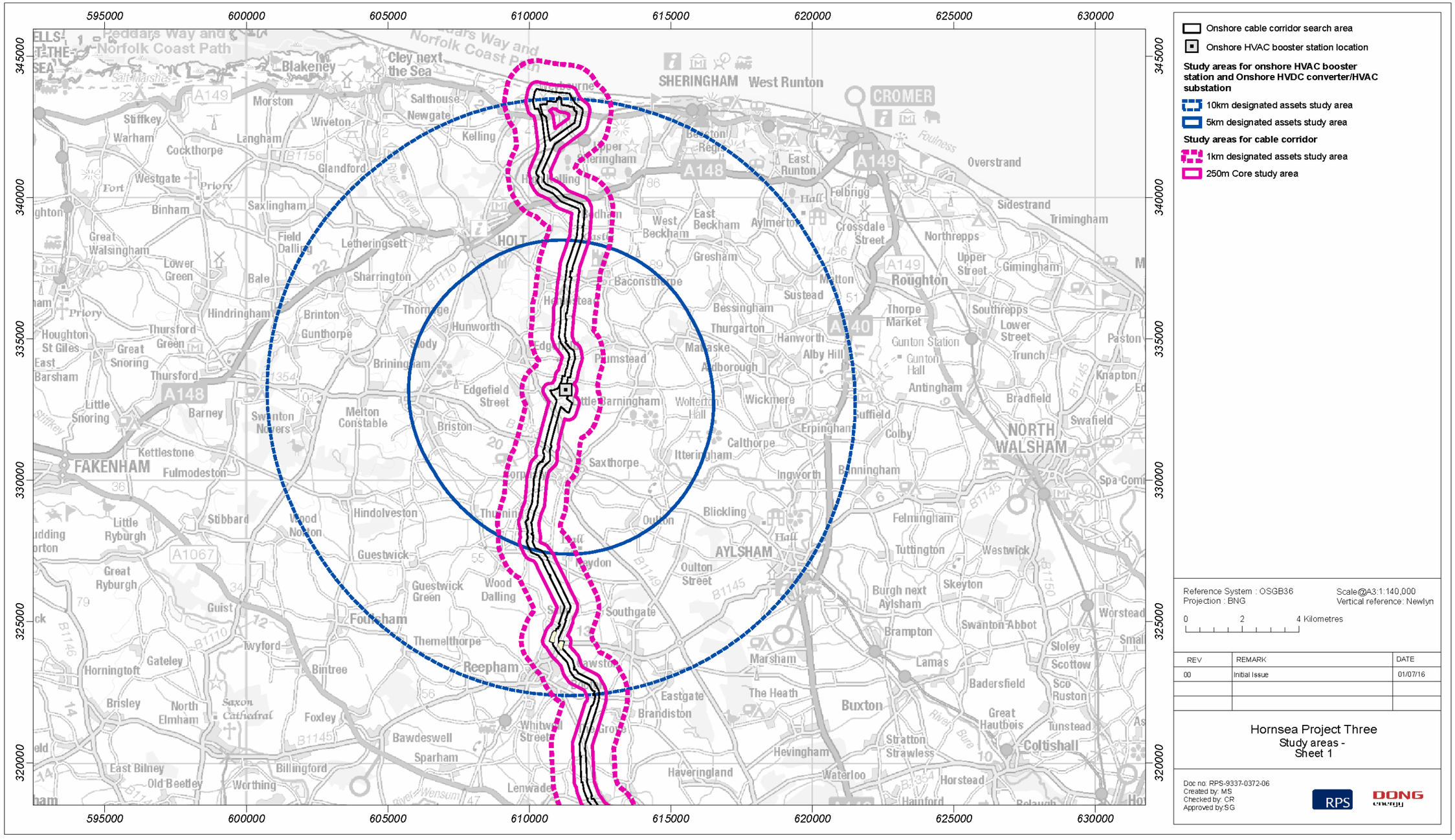


Figure 5.1: Hornsea Three historic environment study area.

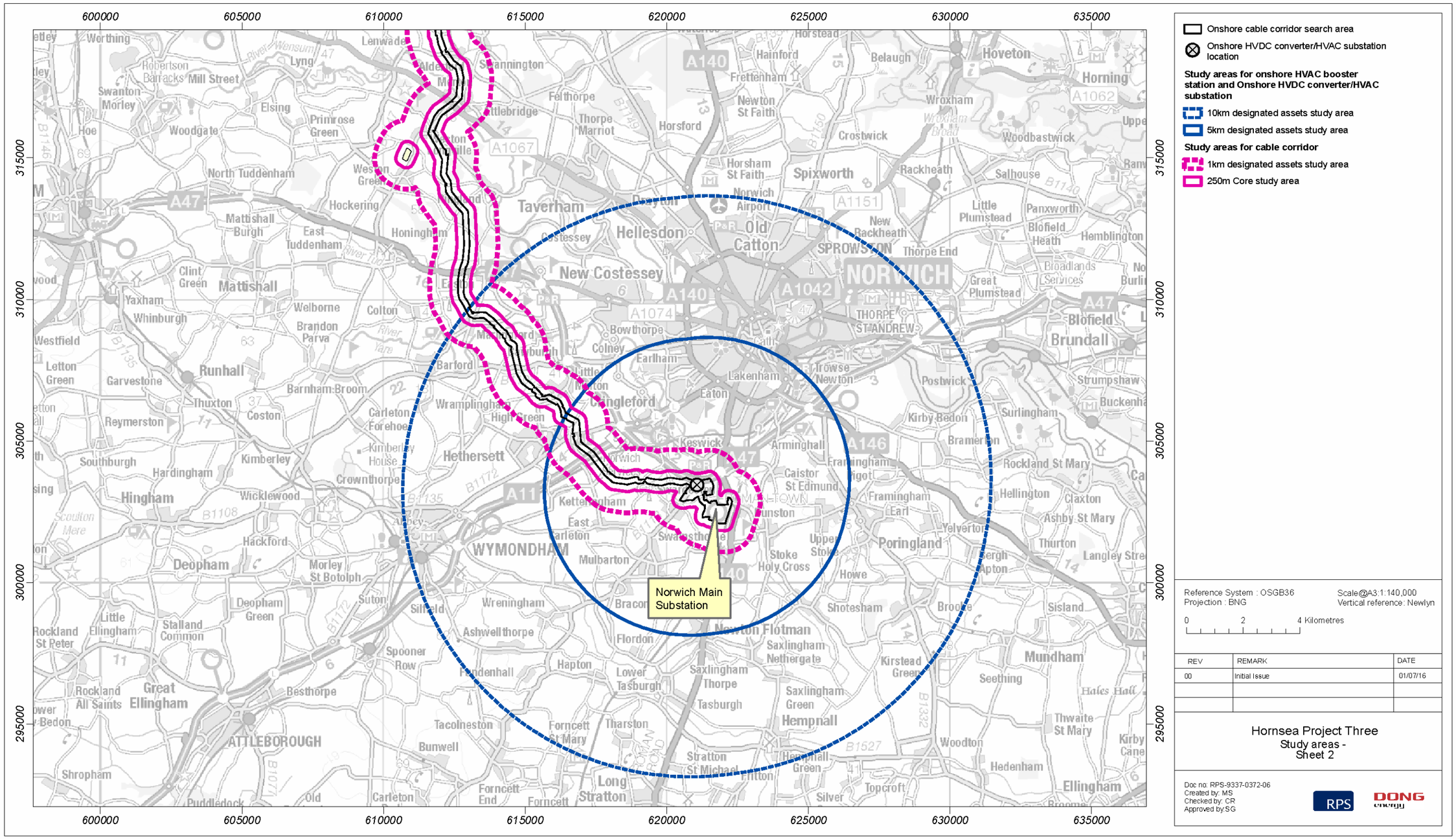


Figure 5.1: Hornsea Three historic environment study area.

5.4 Planning policy context

5.4.1.1 Planning policy on offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to Historic Environment, is contained in the Overarching National Policy Statement (NPS) for Energy (EN-1) (DECC, 2011a), the NPS for Renewable Energy Infrastructure (EN-3) (DECC, 2011b) and the NPS for Electricity Networks Infrastructure (EN-5) (DECC, 2011c).

5.4.1.2 NPS EN-1 includes guidance on what matters are to be considered in the assessment. These are summarised in Table 5.1 below. Other legislation, planning policy and guidance relevant to this chapter includes:

- National Planning Policy Framework (NPPF) (2012); and
- Web based planning practice guidance is provided by the Department for Communities and Local Government (DCLG): Conserving and enhancing the historic environment (last updated April 2014).

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 PEIR
Historic Environment	
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 has been described, including the contribution that their setting makes to that significance. See Section 5.10 of this chapter.
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 (reporting to be included in the Environmental Statement (ES)) 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 will be prepared for any permanent above ground structures such as HVAC booster station and HVDC convertor/HVAC substations (to be included in the ES) in order to demonstrate how the proposed works could affect the settings of heritage assets.

5.4.1.3 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 below.

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

Summary of NPS EN-1 policy on decision making (and mitigation)	How and where considered in the PEIR
Historic Environment	
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: • evidence provided with the application; • any designation records; • the Historic Environment Record, and similar sources of information; • the heritage assets themselves; • the outcome of consultations with interested parties; and • where appropriate and when the need to understand the significance of the heritage asset demands it, expert advice. (paragraph 5.8.11).	The evidence outlined in paragraph 5.8.11 of NPS EN-1 is provided in this chapter and Annexes.
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).	An assessment of the significance of those heritage assets which may be affected by the proposed development has been made in Section 5.10 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).	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 proposed 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).

Summary of NPS EN-1 policy on decision making (and mitigation)	How and where considered in the PEIR
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).	Appropriate visualisations will be prepared for any permanent above ground structures such as HVAC booster stations, HVDC convertor/HVAC substations (to be included in the ES) in order to demonstrate how the proposed works could affect the settings of heritage assets.
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).	Effects on designated heritage assets will range from None to Moderate adverse.
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).	No significant adverse effects on Conservation Areas are predicted (see Section 5.10. No adverse effects of any kind are predicted on World Heritage Sites.
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).	An outline of appropriate mitigation measures is given in Table 5.10.
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).	Effects on designated heritage assets, including effects on their settings, will range from None to Moderate Adverse.

5.4.1.4 NPS EN-5 notes at paragraph 2.2.6 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.

5.4.1.5 Similarly, the Infrastructure Planning (Decisions) Regulations 2010 notes at paragraph 3 that

"(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.

(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.

(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."

5.4.1.6 Further advice in relation specifically to Hornsea Three has been sought through consultation with the statutory authorities and from the PINS scoping opinion (Table 5.3).

5.4.2 National Planning Policy Framework (2012) and Practice Guidance

5.4.2.1 The Department for Communities and Local Government (DCLG) (2012) published the National Planning Policy Framework (NPPF) in March 2012. The NPPF sets out the national planning policies for England and the Government's desire to enable sustainable development.

5.4.2.2 The NPPF replaces previous PPSs and provides guidance to planning authorities regarding the protection of heritage assets within the planning process. The NPPF deals with all types of heritage in a single document. It takes an integrated approach to the historic environment and heritage assets, moving beyond a distinction between buildings, landscapes and archaeological remains.

5.4.2.3 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.

5.4.2.4 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).

5.4.2.5 'Setting of a heritage asset' is defined in the NPPF at page 56 as the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

5.4.2.6 Paragraph 131 notes that in determining planning applications, local planning authorities should take account of the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation; the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and the desirability of new development making a positive contribution to local character and distinctiveness.

5.4.2.7 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.

5.4.2.8 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.

5.4.2.9 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 2104) which provides advice on several areas of historic environment practice, including on the assessment of the settings of heritage assets (see paragraph 5.9.1.26 *et seq*.).

5.4.3 Local Planning Policy

5.4.3.1 The onshore cable corridor lies within the districts of North Norfolk, Broadland and South Norfolk. The proposed onshore HVAC booster station site lies within North Norfolk District and the onshore HVDC converter/HVAC substation site is located in South Norfolk District. The northern extremity of the historic environment study area, to the north of the A145 road, is also located within the Norfolk Coast Area of Outstanding Natural Beauty (AONB). For further details on the AONB see chapter 4: Landscape and Visual Resources and chapter 6: Land Use, Agriculture and Recreation.

5.4.3.2 The Local Development Framework varies between councils, and is summarised below:

- The current Local Plan (LDF) for North Norfolk District (2008) - the adopted Core Strategy and Development Management Polices Development Plan Documents (DPDs), the proposals map, Site Allocations plan DPD and relevant Supplementary Planning Documents (SPD).
- The emerging North Norfolk Local Plan is currently under preparation. The draft emerging Local Plan is anticipated to be published in late 2017, examination of the plan is anticipated to commence in spring 2018.
- The Local Plan for Broadland District - the adopted Joint Core Strategy DPD (covering Broadland District, Norwich City and South Norfolk District) (Greater Norwich Development Partnership, 2014), the Broadland District Development Management DPD (Broadland District Council, 2015), Site Allocations DPD and relevant Area Action Plans (AAPs).
- The Local Plan for South Norfolk District - the adopted Joint Core Strategy (covering Broadland District, Norwich City and South Norfolk District) (Greater Norwich Development Partnership, 2014), in addition to the South Norfolk Development Management Policies Document (South Norfolk Council, 2015) Site Specific Allocations and Polices Documents, relevant AAPs and relevant SPD.

5.4.3.3 A full summary of the relevant Statutory Development Plan documents in all Local Authority areas affected by the proposed onshore infrastructure for Hornsea Three is provided at Phase Two consultation in the draft Planning Statement which accompanies the PEIR.

5.4.3.4 Policies regarding contemporary landscapes are discussed within Chapter 4: Landscape and Visual Resources.

5.4.3.5 Policies regarding the ecological environment and habitats are discussed within Chapter 3: Ecology and Nature Conservation.

5.4.3.6 Relevant guidance includes

- Code of Conduct (Chartered Institute for Archaeologists, 2014);
- Standard and Guidance for Historic Environment Desk Based Assessment (Chartered Institute for Archaeologists, 2014);
- Conservation Principles English Heritage (Drury, P. and McPherson, 2008); and,
- Historic Environment Good Practice Advice in Planning Note 3 The Setting of Heritage Assets (Historic England, 2015).

5.5 Consultation

5.5.1.1 The Consultation Report outlines the consultation activities which have been undertaken to date in respect of Hornsea Three.

5.5.2 Hornsea Three consultation

5.5.2.1 Table 5.3 below summarises the issues raised relevant to historic environment which have been identified during consultation activities undertaken to date. Table 5.3 also indicates either how these issues have been addressed within this PEIR or how the Applicant has had regard to them.

5.5.2.2 In addition Hornsea Three has consulted regularly with the County Archaeologist and Historic England providing project updates and to discuss and agree scopes for the heritage walkover survey and geophysical survey campaign which are discussed at paragraphs 5.6.4.1and 5.6.4.2.

Table 5.3: 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 in this chapter
December 2016	PINS – Scoping Response	The applicant proposed to scope out effects on buried archaeological remains from the decommissioning of the landfall, onshore cable, 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 landfall, onshore cable, onshore HVDC converter/HVAC substation and onshore HVAC booster station are considered in Section 5.10
December 2016	PINS – Scoping Response	The applicant should continue to engage with the relevant local authorities and statutory consultees regarding the assessment and the written scheme of investigation (WSI) for field evaluation and development of the Code of Construction Practice (CoCP).	Engagement with the relevant local authorities and statutory consultees is ongoing.
December 2016	PINS – Scoping Response	The Secretary of State notes the intention to include a 1 km buffer around the onshore Export Cable Route (ECR), increasing this to 10 km buffer around the 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 onshore ECR and 5 km buffer for the 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 and the Zone of Influence should be agreed with the relevant consultees and clearly justified in the ES.	Appropriate buffers have been discussed and agreed with the relevant consultees and are justified at Section 5.3.
December 2016	PINS – Scoping Response	The Scoping Report goes on to state that in relation to archaeology, a 1 km buffer will be implemented around the onshore ECR with a 'focus on a smaller core area of 250 m'. The Secretary of State, as noted above suggests that the ES clarifies what is meant by 'focus on' and ensures that this approach is agreed with relevant consultees and clearly justified in the ES.	Appropriate buffers have been discussed and agreed with the relevant consultees and are justified at Section 5.3.
December 2016	PINS – Scoping Response	The Secretary of State suggests that there should be sufficient cross-referencing within the ES to demonstrate that the whole ECR route area, onshore and offshore, has been considered in relation to impacts on the historic environment. This may be achieved through clear cross referencing.	The onshore cable route is considered in this chapter. The landfall below MHWS is considered in volume 2, chapter 9: Marine Archaeology.
December 2016	PINS – Scoping Response	Historic England in their response to the Scoping Opinion notes the complex historic landscape at the landfall site. The Secretary of State encourages the Applicant to consider this response and reflect such matters in the ES.	This chapter considers the potential impact of Hornsea Three landward of MHWS, including the historic landscape at the landfall site.
December 2016	PINS – Scoping Response	The Secretary of State recommends that draft versions of the CoCP and 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	The WSI and Protocol for Archaeological Discoveries are provided in volume 5, annex 9.2: Draft Written Scheme of Investigation of volume 2, chapter 9: Marine Archaeology.
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.	Consultation with Norfolk County Council is ongoing.
December 2016	Historic England – Scoping Response	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 the various local planning authorities and their officers is ongoing.
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.	See section 5.10
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	See section 5.10
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 onshore cable corridor. This work should include detailed consultation with Historic England, The Norfolk Historic Environment Service 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 ongoing. Any potential impact upon the setting of nearby designated (and non-designated) heritage assets both within, and without, the onshore cable corridor is assessed in Section 5.10.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
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 Norfolk Historic Environment Record. We would recommend that this is expanded to include an assessment of the National Record for the Historic Environment (NRHE) and the National Heritage List for England (NHLE). 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 ECR corridor.	An assessment of the NRHE and the NHLE has been undertaken (see in particular volume 6, annex 5.11: Desk Assessment, annex 5.4: Screening Assessment – Onshore HVDC/HVAC substation and annex 5.5: Screening Assessment - Onshore HVAC Booster Station. The desk-based assessment (annex 5.1) also considers information from available aerial photographs, and details from past archaeological and geophysical investigations.
December 2016	Historic England – Scoping Response	The EIA should make full reference to the NPPF Planning Practice Guidance and the Good Practice Advice Notes produced by Historic England - in particular GPA 3: The Setting of Heritage Assets. In particular, the EIA should consider the policies and guidance set out in Conservation Principles (Historic England, 2008) which sets out the heritage values and the concepts behind how 'Significance;' is defined and assessed.	The method for assessing heritage assets considered at sections 5.4 and 5.9.
December 2016	Historic England – Scoping Response	For the on-shore 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 5.10.
December 2016	Historic England – Scoping Response	The EIA should assess nature and extent of the historic environment, identifying those heritage assets likely to be effected 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 example how the assets is traversed, its historical and spatial relationship with other features and the character and context of the surrounding historic landscape. It should also consider the impact from other environmental factors such as noise, traffic and lighting, where relevant. 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 booster station and substation. The EIA should asses 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 National Planning Policy Framework (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 5.10.
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 regarded 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 are considered in this chapter in Section 5.10.
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 setting of designated and non-designated assets are considered in Section 0. With regard to cumulative impacts from groundwork, consultation with Historic England has indicated that this is a generic issue rather than project specific. On this basis, and following discussions with the project hydrologists, the issue has been scoped out of the assessment.
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 adverse design scenario is detailed in Table 5.5.
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 scheduled monuments. This is considered in the NPPF under paragraph 139.	Undesignated assets are considered in
December 2016	Historic England – Scoping Response	The Scoping Report 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 our of foundations or remediation of contaminants is required - and therefore this should be considered as part of the EIA.	Decommissioning impacts are considered in Section 5.10.

5.6 Methodology to inform the baseline

5.6.1.1 The baseline conditions were identified during the site visits and by a desktop review of:

- Historic Ordnance survey mapping obtained from Groundsure and the National Library of Scotland;
- Historic mapping (including tithe and enclosure maps) obtained from the Norfolk Record Office;
- British Geological Survey (BGS) 1:50,000 geological mapping; and,
- BGS borehole records for locations in the vicinity obtained from the BGS website.

5.6.2 Desktop study

5.6.2.1 Information on the historic environment within the historic environment study area was collected through a detailed desktop review of existing studies and datasets. These are summarised at Table 5.4 below.

Table 5.4: Summary of key desktop reports.

Title	Source	Year	Author
Historic Environment Record	Norfolk County Council	2016	Norfolk County Council
Records of the National Mapping Programme	Norfolk County Council	2016	Historic England
Records held by the National Record of the Historic Environment	Historic England	2016/2017	Historic England

5.6.3 Designated sites

5.6.3.1 All designated sites within the historic environment (designated assets) study area that could be affected by the construction, operation and maintenance, and decommissioning of Hornsea Three for historic environment, were identified through consultation with stakeholders, in particular Historic England and the local planning authorities. They are listed in Annexes 5.1: Desk Based Assessment, 5.3: Site Gazetteer, 5.4: Screening Assessment – Onshore HVDC/HVAC Substation and 5.5: Screening Assessment - Onshore HVAC Booster Station.

5.6.4 Site specific surveys

5.6.4.1 A site visit and walkover survey of those parts of the onshore cable corridor 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. The results of the walkover survey are presented in volume 6, annex 5.2: Fieldwalking Report.

5.6.4.2 Following consultation and agreement of survey scope with the County Archaeologist, a WSI geophysical survey of a number of areas within the historic environment study area was undertaken in February and March 2017. A report on the findings is currently being prepared and will be used to inform the Environmental Statement. Both the County Archaeologist and Historic England have been kept appraised of the results to date.

5.7 Baseline environment

5.7.1.1 This section reviews the historic environment at the onshore components of Hornsea Three comprising the landfall above MHWS, cable route corridor, the onshore HVAC booster station, the onshore HVDC converter/HVAC substation site and the connection with the National Grid substation. The onshore assessment commences at MHWS and does not consider the intertidal zone. 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.

Designated Assets

5.7.1.2 There are a number of designated assets within the historic environment (designated assets) study area, though none are within the onshore cable corridor search area. No designated heritage assets would be physically impacted by any part of the proposed works required for the scheme. Effects on designated assets, if any, would be represented by loss of significance as a result of change within the setting of the asset.

World Heritage Sites

5.7.1.3 There are no World Heritage Sites within the historic environment (designated assets) study area, or within the county of Norfolk.

Scheduled Monuments

5.7.1.4 There are thirteen SMs within the historic environment (designated assets) study area, whose settings may be affected by the proposals (see volume 6, annex 5.1: Desk Based Assessment).

Listed Buildings

5.7.1.5 There are a total of 167 listed buildings within the historic environment (designated assets) study area. Of these, seven are listed at Grade I, 23 at Grade II* and 137 at Grade II (see volume 6, annex 5.1: Desk Based Assessment).

Registered Parks and Gardens

5.7.1.6 There are four Registered Parks and Gardens within the historic environment (designated assets) study area. These are Heydon Hall (list entry number 1000187), located some 380 m east of the onshore cable corridor at its nearest point; Intwood Hall (list entry number 1000320), located some 180 m north of the onshore cable corridor at its nearest point, and Sheringham Hall (list entry number 1001020), located some 800 m east of the onshore cable corridor at its nearest point, each registered at Grade II*, while Salle Park (list entry number 1001016), located some 110 m east of the onshore cable corridor at its nearest point is registered at Grade II.

Registered Battlefields

5.7.1.7 There are no Registered Battlefields within the historic environment (designated assets) study area, or within the county of Norfolk.

Conservation Areas

5.7.1.8 There are 11 Conservation Areas within the historic environment (designated assets) study area. They are Weybourne, Hempstead, Mulbarton, Heydon, Upper Sheringham, Glaven Valley, Baconsthorpe, Reepham, Bawburgh, Keswick Mill and Stoke Holy Cross Mill. These conservation areas contain many of the listed buildings in the area.

Undesignated Assets

5.7.1.9 The early landscape within the historic environment study area is likely to have been significantly different to the modern version. At the north of the 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 Annex 1: Desk Based Assessment.

Future baseline scenario

5.7.1.10 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.

5.7.2 Data limitations

5.7.2.1 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.

5.7.2.2 Private land has not been entered at those heritage assets/sites where setting issues might occur. The assessments of potential impacts on setting have been informed by observations from the site visit undertaken in September 2016, the walkover survey carried out in February 2017, and aerial photography. Hornsea Three will discuss potential site visit locations, and the scope of survey work, with Norfolk County Council and Historic England with visits planned to take place before the end of September 2017.

5.8 Key parameters for assessment

5.8.1 Maximum design scenario

5.8.1.1 The maximum design scenarios identified in Table 5.5 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the details provided in the project description (volume 1, chapter 3: Project Description). 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 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 No impacts have been scoped put of the assessment.

Table 5.5: Maximum design scenario considered for the assessment of potential impacts on historic environment.

Potential impact	Maximum design scenario	Justification
Construction phase		
Construction works at Hornsea Three landfall, along the cable route (including the width of the stripped area of the cable route, any stripping required for soil storage, compounds and construction site accesses) and at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in permanent loss of, or damage to, buried archaeological remains.	<u>Hornsea Three landfall</u> Open cut techniques installing up to eight cables with a corridor up to 20 m either side of each cable. The width of the corridor at landfall would be up to 20 m either side of each cable. Up to eight transition joint bays of total up to 2,000 m^2 (250 m^2 x 8). <u>Onshore export cable corridor</u> Permanent onshore cable corridor area is 3,300,000 m^2 (60 m wide and 55 km long). Up to six cable trenches (each containing one circuit) each trench is 5 m wide and maximum 2 m deep. Depth of stabilised backfill up to 1.5 m. Up to 330 junction bays and link boxes. Closest separation distance between junction bay and link box: - 750 m. Up to 74,250 m^2 required for junction bays (based on 330 junction bays (each junction bay is 9 m x 25 m)). Up to 2,970 m^2 area required for link boxes (based on 330 link boxes (each link box: is 3 m x 3 m)). Up to two temporary haul roads 5 m wide (7 m wide at passing places). The haul road would be surfaced with aggregate on geotextile Up to 50 HDD crossings across surface watercourses. A HDD compound would be located at both ends of the HDD crossing each with a footprint of up to 4,900 m^2 (70 m x 70 m) with permeable surfacing. <u>Onshore HVDC converter/HVAC substation</u> Permanent area of site is 128,000 m^2 (including an area which may be used for landscaping) plus a temporary area of 100,000 m^2. The transmission option with the greatest number of buildings and largest footprint is the HVDC converter station – up to five buildings. The main building (single building scenario) for the HVDC converter station will have a footprint of 11,250 m^2 (75 m x 150 m). Dimensions for the multiple building scenario would be reduced proportionately but the overall footprint would be the same. Temporary use of tall cranes. Removal of part of the existing planting. <u>Onshore HVAC booster station</u> Permanent area of site is 25,000 m^2 plus a temporary works area up to 25,000 m^2. Building scenario with the largest footprint - single building with area of 4,500 m^2 (150 m length and 30 m width) and height up to 12.5 m. Temporary use of tall cranes. Removal of part of the existing planting. <u>Construction programme</u> Up to 11 years long with up to three phases with a maximum gap of four years.	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.
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.		The onshore HVDC converter station represents the maximum design scenario in terms of impacts on settings of heritage assets as this has the greatest number of buildings and largest footprint and therefore, the largest disturbance from the construction of foundations. 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 11 years as this will be the maximum of the duration of the works.
Construction works at Hornsea Three landfall, along the cable route (including compounds and construction site accesses) could result in temporary impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.		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 11 years as this will be the maximum of the duration of the works. Impacts on the settings of heritage assets during construction will be at their maximum where the duration of the works is extended.
Construction works at the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.		The onshore HVDC converter station represents the maximum design scenario in terms of impacts on overall historic landscape as this has the greatest number of buildings and largest footprint and therefore, the largest disturbance from the construction of foundations. 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 11 years as this will be the maximum of the duration of the works .
Construction works at Hornsea Three landfall, along the cable route (including compounds and construction side accesses) could result in temporary impacts on the overall historic landscape.		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 11 years as this will be the maximum of the duration of the works .

Potential impact	Maximum design scenario	Justification
Operation phase		
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.	Onshore HVAC booster station maximum building dimensions: 150 m long x 30 m wide x 12.5 m high. Onshore HVAC substation maximum building dimensions: 150 m long x 30 m wide x 25 m high.`	The potential single onshore HVAC booster station is larger in mass than multiple buildings and therefore impacts on the settings of heritage assets would be greater. The potential single onshore HVDC converter/HVAC substation is larger in mass than multiple buildings and therefore impacts on the settings of heritage assets would be greater.
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: 150 m long x 30 m wide x 12.5 m high.` Onshore HVAC substation maximum building dimensions: 150 m long x 30 m wide x 25 m high.`	The potential single onshore HVAC booster station is larger in mass than multiple buildings and therefore impacts on the settings of heritage assets would be greater. The potential single onshore HVDC converter/HVAC substation is larger in mass than multiple buildings and therefore impacts on the settings of heritage assets would be greater.
Decommissioning phase		
Decommissioning works along the cable route (including compounds and construction side accesses) and 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.	Removal of the following (above and below ground): <u>Onshore HVAC booster station</u> Permanent area of site is 25,000 m^2 <u>Onshore HVDC converter/HVAC substation</u> Permanent area of site is assumed at 100,000 m^2 (excluding area which may be used for landscaping) <u>Onshore cable corridor search area</u> The cutting of underground cables and sealing of cables.	The maximum design scenario for disturbance or contamination during decommissioning is the removal of the onshore HVDC converter/HVAC substation and onshore HVAC booster station as this presents the greatest disturbance and potential risk of contaminants being released. Impacts on the settings of heritage assets during decommissioning will be greatest where the duration of the works is extended.
Decommissioning works along the cable route (including compounds and construction side accesses) and 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.		Impacts on the overall historic landscape during decommissioning will be greatest where the duration of the works is extended.

5.9 Impact assessment criteria

5.9.1.1 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 importance of that asset.

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

5.9.1.3 Significance 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:

5.9.1.4 "*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).

5.9.1.5 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 also included a section (Section 6) advising on how to assess heritage significance.

5.9.1.6 According to the guidance published by English Heritage (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.

5.9.1.7 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 (August 2007) 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 Importance - Archaeological Assets

5.9.1.8 There are no national government guidelines for evaluating the importance 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*".

5.9.1.9 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.

5.9.1.10 It is noted that a high degree of professional judgement is required in the identification of importance 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 importance.

Assessment of Asset Importance - Historic Buildings

5.9.1.11 For historic buildings, assessment of importance 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.

5.9.1.12 The criteria used in establishing the importance 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 Importance - Historic Landscapes

5.9.1.13 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.

5.9.1.14 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.

5.9.1.15 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).

5.9.1.16 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.

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

5.9.1.18 The criteria for determining the significance of effects is a two stage process that involves defining the sensitivity of the receptors and the magnitude of the impacts. This section describes the criteria applied in this chapter to assign values to the sensitivity of receptors and the magnitude of potential impacts. The terms used to define sensitivity and magnitude are based on those used in the DMRB methodology, which is described in further detail in volume 1, chapter 5: Environmental Impact Assessment Methodology.

5.9.1.19 The criteria for defining sensitivity in this chapter are outlined in Table 5.6 below.

Table 5.6: Definition of terms relating to the sensitivity of the receptor.

Sensitivity	DMRB definition	Definition used in this chapter
Very High	Very high importance and rarity, international scale and very limited potential for substitution	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).
High	High importance and rarity, national scale and limited potential for substitution	SMs with standing remains. 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).

Sensitivity	DMRB definition	Definition used in this chapter
Medium	High or medium importance and rarity, regional scale, limited potential for substitution	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)	Low or medium importance and rarity, local scale	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	Very low importance and rarity, local scale	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.

Assessment of Impact Magnitude – Archaeological Assets

5.9.1.20 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.

5.9.1.21 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

5.9.1.22 As for archaeological assets, the magnitude of impact in relation to historic buildings is assessed without regard to the importance of the asset, so the total destruction 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.

5.9.1.23 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 effects resulting from changes within settings is provided below.

Assessment of Impact Magnitude – Historic Landscapes

5.9.1.24 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 effects resulting from changes within settings is provided at paragraph 5.9.1.26 *et seq.* below.

5.9.1.25 The criteria for defining magnitude in this chapter are outlined in Table 5.7 below.

Table 5.7: Definition of terms relating to the magnitude of an impact.

Magnitude of impact	DMRB definition	Definition used in this chapter
Major	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements (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.
	Large scale or major improvement or resource quality; extensive restoration or enhancement; major improvement of attribute quality (Beneficial)	As definition above but with positive changes to significance
Moderate	Loss of resource, but not adversely affecting integrity of resource; partial loss of/damage to key characteristics, features or elements (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.
	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (Beneficial)	As definition above but with positive changes to significance
Minor	Some measureable change in attributes, quality or vulnerability, minor loss or, or alteration to, one (maybe more) key characteristics, features or elements (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.
	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial)	
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements (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
	Very minor benefit to, or positive addition of one or more characteristics, features or elements (Beneficial)	As definition above but with positive changes to significance
No change	No loss or alteration or characteristics, features or elements; no observable impact in either direction	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.

Settings

5.9.1.26 In 2015, Historic England published a document entitled "*Historic Environment Good Practice Advice"* in *"Planning Note 3: The Settings of Heritage Assets*" (Historic England, 2015). This guidance provides further advice on the definition of setting and the general principles of setting in the context of strategic planning and development control.

5.9.1.27 Paragraph 2 of the Historic England advice document in particular deals with the issue of setting and development control. It 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.

5.9.1.28 Paragraph 12 of the Historic England advice document 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.

5.9.1.29 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 Zone of Theoretical Visibility (ZTV) is a useful tool in assessing in general terms the assets which are likely to be impacted by the proposed development likely level (Historic England, 2015: paragraph 14).

5.9.1.30 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.

5.9.1.31 Assessment of the visual effects of the project 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 settings 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.

5.9.1.32 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.

5.9.1.33 Once the impact on the heritage asset has been examined, this has been related to the impact scales defined above for each type of heritage asset. The level of impact has been considered against the importance of the heritage asset in the matrix, provided in Table 5.8 below, to reach a conclusion regarding the overall significance of effect. The effects on heritage assets resulting from change within their settings may be adverse or beneficial.

5.9.1.34 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 5.8. Where a range of significance of effect is presented in Table 5.8 the final assessment for each effect is based upon expert judgement.

5.9.1.35 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 5.8: Matrix used for the assessment of the significance of the effect.

		Magnitude of impact				
Sensitivity of receptor		***No change***	***Negligible***	***Minor***	***Moderate***	***Major***
	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

5.10 Assessment of significance

5.10.1 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 5.9). This approach has been employed in order to demonstrate commitment to measures by including them in the design of Hornsea Three and have therefore been considered in the assessment presented in section 5.10 below. These measures are considered standard industry practice for this type of development. Assessment of sensitivity, magnitude and therefore significance includes implementation of these measures.

Table 5.9: Designed-in measures adopted as part of Hornsea Three.

Measures adopted as part of Hornsea Three	Justification
Construction Phase	
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 and final investment decision (FID) will focus on identified sites that will be adversely affected by the scheme. This programme will be agreed with the relevant authorities prior to commencement of the work.	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 agreed in advance with the relevant authorities.	To offset any loss of, or damage to, buried archaeological assets

Measures adopted as part of Hornsea Three	Justification
Restoration of hedges and hedge banks.	This reduces or nullifies any long-term effect on the settings of heritage assets and the historic landscape.
Operation and Maintenance Phase	
None.	Effects during the Operation and Maintenance Phase would be limited to those resulting from changes to the settings of heritage assets caused by the onshore HVAC booster station and HVDC converter/HVAC substation. Such effects may potentially be ameliorated by any proposed landscape planting, site layout arrangements and perhaps façade treatments to the buildings. Hornsea Three is currently progressing detailed design work for the HVAC booster station and HVDC converter/HVAC substation, which includes such details. This will be considered further as part of the Environmental Statement.
Decommissioning Phase	
None.	Effects during the Decommissioning Phase would be limited to those resulting from changes to the settings of heritage assets. Such effects will be short-term and fully reversible.

5.10.1.2 A number of assets have been discovered through assessment and evaluation. Detailed mitigation measures are described in Table 5.10 below. For the locations of the Sites, see volume 6, annex 2, Walkover Survey Report.

Table 5.10: 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
Construction Phase	
Site GS1, Weybourne – Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Possible Roman enclosure and field system and Bronze Age ring ditch cropmarks.
Site WA2, Kelling – Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Well-known Mesolithic flint-working site excavated between 1924 and 1926. Large numbers of Mesolithic worked flints and waste from flint-working were recovered from in situ deposits. Some of the flints are now thought to date to the Upper Palaeolithic.
Site GS2, Baconsthorpe – Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Onshore ECR passes between the two recorded heritage assets just west of Baconsthorpe Castle. Potential that previously unrecorded archaeological remains continue through this area.
Site GS4 – no mitigation proposed.	No recorded or known archaeology.
Site GS5 - Barningham Green Booster Station - Trenching/ soil stripping as appropriate in advance of construction and/ or monitoring of soil stripping during construction.	No recorded or known archaeology. However, the proposed permanent structures have a relatively large area of high impact and a programme of mitigation works is judged to be appropriate.
Site GS6 – Corpusty – Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	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 GS8 Salle – Trenching/soil stripping as appropriate in advance of construction and/ or monitoring of soil stripping during construction.	Cropmarks of two ring ditches.
Site GS9 Salle Church – Trenching/soil stripping as appropriate in advance of construction and/or monitoring of soil stripping during construction.	Saint Peter and Pauls Church and multi-period finds.
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 – 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 GS17 Ketteringham – Trenching/ soil stripping as appropriate 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.
Operation and Maintenance Phase	
None.	All mitigation completed prior to/ during the construction phase.

Mitigation measures adopted as part of Hornsea Three	Justification
Decommissioning Phase	
None.	All mitigation completed prior to/ during the construction phase.

5.10.2 Construction Phase

5.10.2.1 The impacts of the onshore construction of Hornsea Three have been assessed on the historic environment. The potential environmental impacts arising from the construction of Hornsea Three are listed in Table 5.5 above along with the maximum adverse scenario against which each construction phase impact has been assessed.

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

Construction works at Hornsea Three landfall, along the cable route (including the width of the stripped area of the cable route, any stripping required for soil storage, compounds and construction side accesses) and at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in permanent loss of or damage to, buried archaeological remains.

5.10.2.3 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.

5.10.2.4 Although the undesignated assets described below may have a setting, each asset lies along the cable route corridor. On this basis any effect resulting from changes within their settings would be temporary (i.e. would occur only during cable-laying operations in the area) and fully reversible. For this reason any effect on the settings of these undesignated assets is unlikely to be significant and has not been assessed in detail.

Magnitude of impact

5.10.2.5 Although the full extent of the assets has not always been determined, because fieldwork has taken place largely within the cable route corridor, many of the sites can be seen to cover a relatively wide area and construction would only impact upon part of these sites. In the cases of ring ditches, they may be entirely removed through the construction of the cable. 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. The magnitude of impact is, therefore, considered to be **moderate**.

Sensitivity of receptor

5.10.2.6 These sites 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

5.10.2.7 There will be a **medium** magnitude of impact on assets of **low** to **medium** sensitivity. The effect will, therefore be of **minor** to **moderate adverse** significance, which is significant in EIA terms. This effect applies to the unmitigated position. Designed in mitigation, such as that set out in Table 5.9, would reduce the impact. In addition, Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

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.

5.10.2.8 Where impacts of settings are considered below, the impact from the tallest proposed structure (the proposed onshore HVDC converter station, 40 m in height) is considered to give the 'worst case' scenario, and it is this structure that is modelled within the ZTV.

Scheduled Monuments

Onshore HVAC booster station

5.10.2.9 Screening (see volume 6, Annex 5.5: Screening Assessment - Onshore HVAC Booster Station) has indicated that there are no SMs located within the study area, within the ZTV of the proposed onshore HVAC booster station and which require further detailed assessment.

Onshore HVDC converter/HVAC substation

5.10.2.10 There are no scheduled monuments within 1 km of the onshore HVDC converter/HVAC substation.

5.10.2.11 Screening (see volume 6, annex 5.4: Screening Assessment – Onshore HVDC/HVAC substation) has indicated that there are seven scheduled monuments located within the study area, outside the built development of Norwich, within the ZTV of the proposed onshore HVDC converter/HVAC substation and which require further detailed assessment. They are discussed below.

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

5.10.2.12 Sites discovered by air photography at Markshall (list entry number 1002887), located some 2.4 km northeast of the proposed onshore HVDC converter/HVAC substation. The SM is divided from the proposed onshore HVDC converter/HVAC substation by the A47 road, which in effect provides the southern boundary of its setting and is therefore not considered further.

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

5.10.2.13 Two round barrows near Norwich Lodge, Ketteringham Hall (list entry number 1002888), located some 3.2 km west of the proposed onshore HVDC converter/HVAC substation.

Magnitude of impact

5.10.2.14 Hornsea Three would have no physical impact on the SM and any impact would be on its setting. The SM lies within the ZTV of the proposed onshore HVDC converter/HVAC substation.

5.10.2.15 There would be at most very minor changes to the setting of the designated assets and the magnitude of impact of Hornsea Three on the SM is assessed as being **negligible**.

Sensitivity of receptor

5.10.2.16 The heritage values of the 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.
- Communal - This value derives from its symbolic value as part of the local community.

5.10.2.17 The SM is 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 northeast of the designated asset.

5.10.2.18 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 to the north, the built development of the council depot. 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 some 1.6 km to the northeast, recorded as list entry number 1003977.

Significance of the effect

5.10.2.19 There would be very minor changes to the setting of the SM, which is an asset of **high** sensitivity and the magnitude of impact is assessed as being **negligible**. The effect of Hornsea Three on the SM is assessed as being **minor adverse** significance at most.

Anglo-Saxon cemetery (list entry number 1003163)

5.10.2.20 The SM is assessed with Venta Icenorum (list entry number 1021463), below.

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

5.10.2.21 Arminghall, sites discovered by air photographs (list entry number 1003620), located some 3.5 km northeast of the proposed onshore HVDC converter/HVAC substation. Most of the SM is divided from the proposed onshore HVDC converter/HVAC substation by the A47 road, which in effect provides the southern boundary of its setting. The element of the SM located to the south of the A47 road faces northwest, towards the River Yare and away from the proposed onshore HVDC converter/HVAC substation. The SM is therefore not considered further.

Roman sites outside town walls (list entry number 1003954)

5.10.2.22 The SM is assessed with Venta Icenorum (list entry number 1021463), below.

'Woodhenge', Arminghall (list entry number 1003985)

5.10.2.23 'Woodhenge', Arminghall (list entry number 1003985) is located some 3.6 km northeast of the proposed onshore HVDC converter/HVAC substation. The SM is divided from the proposed onshore HVDC converter/HVAC substation by the A47 road, which in effect provides the southern boundary of 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)

5.10.2.24 Venta Icenorum: Roman town and associated prehistoric and medieval remains (list entry number 1021463) is located immediately to the east of the mainline railway, some 1.6 km east of the proposed onshore HVDC converter/HVAC substation. Roman sites outside town walls (list entry number 1003954) is located to the northeast of Caistor Hall Hotel, some 2.4 km northeast of the proposed onshore HVDC converter/HVAC substation and some 450 m northeast 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 some 2.2 km east of the proposed onshore HVDC converter/HVAC substation and some 200 m east of the scheduled element of Venta Icenorum.

Magnitude of impact

5.10.2.25 Hornsea Three would have no physical impact on the SM and any impact would be on it setting. The SM lies within the ZTV of the proposed onshore HVDC converter/HVAC substation.

5.10.2.26 There would be slight changes to the setting of the designated assets and the magnitude of impact of Hornsea Three on the SMs is assessed as being **minor.**

Sensitivity of receptor

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

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

5.10.2.29 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 importance 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 importance 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.

5.10.2.30 The Roman sites 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 - The value derives from the earthwork remains of Venta Icenorum in particular.
- Communal - This value derives from their symbolic value as part of the local community.

5.10.2.31 The SMs are of **high** sensitivity. Setting makes a significant contribution to the sensitivity of the SMs.

Significance of the effect

5.10.2.32 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. There would be minor changes to the setting of the designated assets and the magnitude of impact is assessed as being **minor** on assets of **high** sensitivity. The effect of Hornsea Three on the designated assets is assessed as being **moderate adverse**, which is significant in EIA terms. .Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

Listed Buildings

Onshore HVAC booster station

5.10.2.33 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 study area, within the ZTV of the proposed onshore HVAC booster station and which require further detailed assessment.

5.10.2.34 Screening (see volume 6, Annex 5.5: Screening Assessment - Onshore HVAC Booster Station) has indicated that there is one Grade II* Listed Building located within the study area, within the ZTV of the proposed onshore HVAC booster station and which requires further detailed assessment. This is Salle Park.

<u>Salle Park (list entry number 1170353)</u>

5.10.2.35 Salle Park (listed at Grade II*, list entry number 1170353) is located to some 8.5 km to the south of the proposed onshore HVAC booster station within the landscaped park and garden at Salle Park (a registered park and garden (registered at Grade II, list entry number 1001016), the park being also located some 110 m east of the onshore cable corridor at its nearest point.

Magnitude of impact

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

5.10.2.37 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 northwest and therefore will be afforded similar screening.

5.10.2.38 Given the distance of the designated assets from the proposed onshore HVAC booster station and the existing screening, the magnitude of impact of Hornsea Three on the designated assets is **minor** on the registered park and garden and **negligible** on the principal building.

Sensitivity of receptor

5.10.2.39 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 2½ 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.

5.10.2.40 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 northeast to south west and northwest to southeast running thought an axis formed by the principal building.

5.10.2.41 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.
- Communal – The value of the designated assets derives from their symbolic value as part of the local community.

5.10.2.42 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.

5.10.2.43 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

5.10.2.44 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. There would be minor changes to the setting of the designated assets and the magnitude of impact is assessed as being **minor** on an asset of **medium** sensitivity and **negligible** on an asset of **high** sensitivity. The effect of Hornsea Three on both designated assets at Salle Park is assessed as being **minor adverse**, which is not significant in EIA terms.

<u>Onshore HVDC converter/HVAC substation</u>

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

5.10.2.46 Screening (see volume 6, annex 5.4: Screening Assessment – Onshore HVDC/HVAC substation) has indicated that there are three Grade II* listed buildings located within 1 km of the proposed onshore HVDC converter/HVAC substation, outside the built development of Norwich, within the ZTV of the proposed onshore HVDC converter/HVAC substation and which require further detailed 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).

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

5.10.2.47 Gowthorpe Manor House (listed at Grade II*, list entry number 1050515) is located adjacent to and associated with the 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 some 750 m to the south of the proposed onshore HVDC converter/HVAC substation.

Magnitude of impact

5.10.2.48 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 proposed onshore HVDC converter/HVAC substation.

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

5.10.2.50 The magnitude of impact of Hornsea Three on the designated assets is **minor**.

Sensitivity of receptor

5.10.2.51 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 is of two storeys with an attic, of brick, with a partly encased timber frame. The building has a plain tiled roof, with crowstepped gables.

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

5.10.2.53 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.
- Communal – The value of the listed buildings derives from their symbolic value as part of the local farming community.

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

5.10.2.55 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 proposed onshore HVDC converter/HVAC substation

Significance of the effect

5.10.2.56 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. There would be minor changes to the setting of the designated assets and the magnitude of impact is assessed as being **minor** on assets of **medium** and **high** sensitivity. The effect of Hornsea Three on the designated assets is assessed as being **moderate adverse**, which is significant in EIA terms. Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

<u>Mangreen Hall (list entry number 1366150)</u>

5.10.2.57 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 some 290 m southeast of the proposed onshore HVDC converter/HVAC substation on Mangreen Lane.

Magnitude of impact

5.10.2.58 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 proposed onshore HVDC converter/HVAC substation.

5.10.2.59 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 northwest of the other structures will be screened to a degree by vegetation.

5.10.2.60 The magnitude of impact of Hornsea Three on the designated assets is **minor**.

Sensitivity of receptor

5.10.2.61 Mangreen Hall is thought to originally have been a medieval moated site (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. 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.

5.10.2.62 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.

5.10.2.63 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.

5.10.2.64 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 proposed 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

5.10.2.65 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. There would be minor changes to the setting of the designated assets and the magnitude of impact is assessed as being **minor** on assets of **medium** and **high** sensitivity. The effect of Hornsea Three on the designated assets is assessed as being **moderate adverse**, which is significant in EIA terms. Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

5.10.2.66 Screening (see volume 6, annex 5.4: Screening Assessment – Onshore HVDC/HVAC substation) has indicated that there are three further Grade II* listed buildings located within the study area, outside the built development of Norwich, within the ZTV of the proposed onshore HVDC converter/HVAC substation and which require further detailed assessment. They are discussed below.

<u>The Old Hall (list entry number 1050563)</u>

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

<u>Church of St Edmund (list entry number 1373145)</u>

5.10.2.68 The Church of St Edmund (listed at Grade II*, list entry number 1373145) is located some 1.9 km east of the proposed 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 scheduled monument. The Old Hall (list entry number 1050563) is located some 400 m north of the Church of St Edmund.

5.10.2.69 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

5.10.2.70 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 proposed onshore HVDC converter/HVAC substation.

5.10.2.71 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.

5.10.2.72 The magnitude of impact of Hornsea Three on the designated assets is **minor**.

Sensitivity of receptor

5.10.2.73 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.

5.10.2.74 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.

5.10.2.75 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.
- Communal – The value of the listed buildings derives from their symbolic value as part of the local village and farming community.

5.10.2.76 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.

5.10.2.77 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 southeast, away from the proposed onshore HVDC converter/HVAC substation.

Significance of the effect

5.10.2.78 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. There would be minor changes to the setting of the designated assets and the magnitude of impact is assessed as being **minor** on assets of **medium** and **high** sensitivity. The effect of Hornsea Three on the designated assets is assessed as being **moderate adverse**, which is significant in EIA terms.

5.10.2.79 Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

Church of St Mary (list entry number 1050556)

5.10.2.80 The Church of St Mary (list entry number 1050556) is located some 1.1 km southwest of the proposed onshore HVDC converter/HVAC substation at Swardeston.

5.10.2.81 There are eight further listed buildings within and adjacent to the built development of Swardeston. Five of these are located within 1 km of the proposed HVDC converter/HVAC substation, with the remainder located over 1 km away. 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 Swardestone War Memorial (list entry number 1440669). Each of these buildings is listed at Grade II.

Magnitude of impact

5.10.2.82 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 proposed onshore HVDC converter/HVAC substation.

5.10.2.83 The Church of St Mary is screened from the proposed onshore HVDC converter/HVAC substation by vegetation in the churchyard, while the remaining listed buildings are largely screened to a degree by surrounding built development.

5.10.2.84 Given that the Church of St Mary is screened from the proposed 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

5.10.2.85 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.

5.10.2.86 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.
- Communal – The value of the listed buildings derives from their symbolic value as part of the local village and farming community.

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

5.10.2.88 The setting of the designated assets 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. The Church of St Mary is screened from the proposed onshore HVDC converter/HVAC substation by vegetation in the churchyard.

Significance of the effect

5.10.2.89 Hornsea Three would have no physical impact on the designated assets and any impact would be on their setting. There would be minor changes to the setting of the designated assets, although the Church of St Mary is screened from the proposed onshore HVDC converter/HVAC substation and the magnitude of impact would be **negligible**. The magnitude of impact is on the remaining assets assessed as being **minor** on assets of **medium** sensitivity. The effect of Hornsea Three on the designated assets is assessed as being **minor adverse**, which is not significant in EIA terms.

5.10.2.90 There are six further Grade II LBs within 1 km of the proposed onshore HVDC converter/HVAC substation, within its ZTV and which require further detailed assessment. These are discussed below.

Keswick Hall (list entry number 1306331)

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

Magnitude of impact

5.10.2.92 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 proposed onshore HVDC converter/HVAC substation. The designated asset is divided from the proposed 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 proposed onshore HVDC converter/HVAC substation.

5.10.2.93 The designated asset benefits from a degree of screening provided by vegetation in the parkland. This provides a high degree of screening, particularly in summer.

5.10.2.94 The magnitude of impact of Hornsea Three on the designated asset is **minor**.

Sensitivity of receptor

5.10.2.95 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.

5.10.2.96 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.
- Communal – The value of the listed building derives from its symbolic value as part of the local community.

5.10.2.97 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.

Significance of the effect

5.10.2.98 Hornsea Three would have no physical impact on the designated asset and any impact would be on its setting. There would be minor changes to the setting of the designated asset and the magnitude of impact is assessed as being **minor** on an asset of **medium** sensitivity. The effect of Hornsea Three on the designated asset is assessed as being **minor adverse**, which is not significant in EIA terms.

5.10.2.99 This effect applies to the unmitigated position. Designed in mitigation, such as that set out in Table 5.9, would reduce the impact. In addition, Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

5.10.2.100 Conservation Areas - Onshore HVAC booster stationThe onshore HVAC booster station Screening Assessment (see volume 6, Annex 5.5: Screening Assessment - Onshore HVAC Booster Station) has indicated that there are no Conservation Areas located within the study area, within the ZTV of the proposed onshore HVAC booster station and which require further detailed assessment.

Conservation Areas - Onshore HVDC converter/HVAC substation

5.10.2.101 Screening (see volume 6, Annex 5.5: Screening Assessment - Onshore HVAC Booster Station) has indicated that there are five conservation areas located within the 5 km study area, outside the built development of Norwich and within the ZTV of the proposed onshore HVDC converter/HVAC substation. They are discussed below.

<u>Eaton conservation area</u>

5.10.2.102 Eaton conservation area is located some 2.2 km northwest of the proposed onshore HVDC converter/HVAC substation at its nearest point

Magnitude of impact

5.10.2.103 Hornsea Three would have no physical impact on the conservation area and any impact would be on its setting. Given the setting of the designated asset (described below at paragraph 5.10.2.107), the magnitude of impact is assessed as being **minor**.

Sensitivity of receptor

5.10.2.104 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.

5.10.2.105 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).

5.10.2.106 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.
- Communal – The value of the conservation area derives from its symbolic value as part of the local community.

5.10.2.107 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

5.10.2.108 There would be slight visual changes to the setting of the conservation area and the magnitude of impact is assessed as being **minor** on an asset of **medium** sensitivity. The effect of the proposed development on the registered landscape is assessed as being **minor adverse**.

<u>Keswick Mill conservation area</u>

5.10.2.109 Keswick Mill conservation area is located some 1.4 km north of the proposed onshore HVDC converter/HVAC substation at the River Yare.

Magnitude of impact

5.10.2.110 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 proposed onshore HVDC converter/HVAC substation. The magnitude of impact is assessed as being **minor**.

Sensitivity of receptor

5.10.2.111 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.

5.10.2.112 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.
- Communal – The value of the conservation area derives from its symbolic value as part of the local community.

5.10.2.113 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

5.10.2.114 There would be slight visual changes to the setting of the conservation area and the magnitude of impact is assessed as being **minor** on an asset of **medium** sensitivity. The effect of the proposed development on the registered landscape is assessed as being **minor adverse** which is not significant in EIA terms.

Mulbarton conservation area

5.10.2.115 Mulbarton conservation area is located some 2 km southwest of the proposed onshore HVDC converter/HVAC substation at it nearest point.

Magnitude of impact

5.10.2.116 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 proposed onshore HVDC converter/HVAC substation. The magnitude of impact is assessed as being **minor**.

Sensitivity of receptor

5.10.2.117 The conservation area contains a total of 12 listed buildings of which one Church of St Mary Magdelen (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.

5.10.2.118 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.
- Communal – The value of the conservation area derives from its symbolic value as part of the local community.

5.10.2.119 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

5.10.2.120 There would be slight visual changes to the setting of the conservation area and the magnitude of impact is assessed as being minor. The effect of the proposed development on the conservation area is assessed as being **minor adverse**.

Old Lakenham conservation area

5.10.2.121 Old Lakenham conservation area is located on either side of the River Yare, some 3 km northeast of the proposed onshore HVDC converter/HVAC substation.

5.10.2.122 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

5.10.2.123 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 proposed onshore HVDC converter/HVAC substation. The magnitude of impact is assessed as being **minor**.

Sensitivity of receptor

5.10.2.124 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).

5.10.2.125 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.
- Communal – The value of the conservation area derives from its symbolic value as part of the local community.

5.10.2.126 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 proposed 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 proposed onshore HVDC converter/HVAC substation.

Significance of the effect

5.10.2.127 Hornsea Three would have no physical impact on the conservation area and any impact would be on it setting.

5.10.2.128 There would be slight visual changes to the setting of the conservation area and the magnitude of impact is assessed as being **minor** on an asset of **medium** sensitivity. The effect of the proposed development on the registered landscape is assessed as being at most of **minor adverse**.

Shotesham conservation area

5.10.2.129 Shotesham conservation area is located on the east side of the A140 road, some 3.8 km southeast of the proposed onshore HVDC converter/HVAC substation at its nearest point.

Magnitude of impact

5.10.2.130 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 proposed onshore HVDC converter/HVAC substation. The magnitude of impact is assessed as being **minor.**

Sensitivity of receptor

5.10.2.131 The conservation area contains a total of 32 listed buildings of which 12 lie within 5 km of the proposed onshore HVDC converter/HVAC substation. 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.

5.10.2.132 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.

5.10.2.133 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

5.10.2.134 There would be slight visual changes to the setting of the conservation area and the magnitude of impact is assessed as being **minor** on an asset of **medium** sensitivity. The effect of the proposed development on the registered landscape is assessed as being of **minor adverse** which is not significant in EIA terms.

Trowse Newton conservation area

5.10.2.135 Trowse Newton conservation area is located on either side of the River Yare, some 4.1 km northeast of the proposed onshore HVDC converter/HVAC substation at its nearest point.

Magnitude of impact

5.10.2.136 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 proposed onshore HVDC converter/HVAC substation. The magnitude of impact is assessed as being **minor**.

Sensitivity of receptor

5.10.2.137 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.

5.10.2.138 A conservation area appraisal has been undertaken (South Norfolk Council, 2012).

5.10.2.139 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).

5.10.2.140 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.
- Communal – The value of the conservation area derives from its symbolic value as part of the local community.

5.10.2.141 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 proposed onshore HVDC converter/HVAC substation by the A146 road, which in effect provides the southern boundary of its setting.

Significance of the effect

5.10.2.142 There would be slight visual changes to the setting of the conservation area and the magnitude of impact is assessed as being **minor** on an asset of **medium** sensitivity. The effect of the proposed development on the registered landscape is assessed as being of at most **minor adverse**.

Registered Parks and Gardens – Onshore HVAC Booster Station

5.10.2.143 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 study area, within the ZTV of the proposed onshore HVAC booster station and which require further detailed assessment.

Registered Parks and Gardens - Onshore HVDC converter/HVAC substation -

5.10.2.144 There are two registered parks and gardens located within the study area, outside the built development of Norwich and within the ZTV of the proposed onshore HVDC converter/HVAC substation. They are discussed below.

Crown Point

5.10.2.145 Crown Point (list entry number 1001480), located some 4.8 km northeast of the proposed onshore HVDC converter/HVAC substation. The registered park and garden is located at the edge of the City. In practice, there is significant screening from vegetation and buildings and there would be few if any views and no further assessment is undertaken.

Intwood Hall

5.10.2.146 Intwood Hall (list entry number 1000320), located some 1.2 km west of the proposed 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 some 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

5.10.2.147 Hornsea Three would have no physical impact on the registered park and garden and any impact would be on its setting. The magnitude of impact is assessed as being **minor**.

Sensitivity of receptor

5.10.2.148 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.

5.10.2.149 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.
- Communal - This value derives from its symbolic value as part of the local community.

5.10.2.150 The registered park and garden is of **high** sensitivity. Setting makes a significant contribution to the sensitivity of the registered park and garden.

Significance of the effect

5.10.2.151 There would be slight visual changes to the setting of the conservation area and the magnitude of impact is assessed as being **minor** on an asset of **high** sensitivity. The effect of the proposed development on the registered park and garden is assessed as being **minor adverse**.

Construction works at Hornsea Three landfall, along the cable route (including compounds and construction side accesses) could result in temporary impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.

5.10.2.152 There are a number of designated heritage assets within the historic environment (designated assets) study area that are not assessed elsewhere. Of those assets assessed in the section on the proposed onshore HVAC booster station and the proposed onshore HVDC converter/HVAC substation, the effects considered include those, if any, of the proposed cable route. Although there may be a degree of visibility of the proposed construction work from some of these designated heritage assets, the impacts would be negligible, temporary and fully reversible.

Magnitude of impact

5.10.2.153 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 **negligible**.

Sensitivity of receptor

5.10.2.154 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

5.10.2.155 Overall, it is predicted that the sensitivity of the receptor is considered to be **medium** to **high a**nd 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 and onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.

Magnitude of impact

5.10.2.156 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

5.10.2.157 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** importance.

Significance of the effect

5.10.2.158 The effect would therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Construction works at Hornsea Three landfall, along the cable route (including compounds and construction side accesses) could result in temporary impacts on the overall historic landscape.

5.10.2.159 For Hornsea Three landfall and the proposed cable route, 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

5.10.2.160 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 **negligible.**

Sensitivity of receptor

5.10.2.161 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** importance.

Significance of the effect

5.10.2.162 The effect would therefore, be of **negligible adverse** significance, which is not significant in EIA terms.

Future monitoring

5.10.2.163 No future monitoring is necessary or recommended

5.10.3 Operational and maintenance phase

5.10.3.1 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 5.5 along with the maximum adverse scenario against which each operation and maintenance phase impact has been assessed.

5.10.3.2 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.

5.10.3.3 Impacts during the operation and maintenance phase of the cable route and 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 (see paragraphs 5.10.2.8 to 5.10.2.151 and the summary in Table 5.13). Therefore, the effect of Operation and Maintenance phase of Hornsea Three is assessed to be **Moderate** adverse, which is significant in EIA terms.

5.10.3.4 As before the effect applies to the unmitigated position. Designed in mitigation would reduce the impact. Hornsea Three will continue to develop the site layout and design details for the HVAC booster station and HVDC converter/HVAC substation, including site layout arrangements and potential external design and façade treatments for buildings on the sites. Further, Hornsea Three will consider potential options for onsite landscape screening, which be considered in response to the ongoing design work. These further measures may further mitigate impacts and this will be considered further in the assessment that accompanies the final DCO application.

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.

5.10.3.5 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 (see summary in Table 5.13). Therefore, the effect of Operation and Maintenance phase of Hornsea Three is assessed to be **Minor adverse**, which is not significant in EIA terms.

5.10.3.6 Again, the effect applies to the unmitigated position. Designed in mitigation would reduce the impact. Hornsea Three will continue to develop the site layout and design details for the HVAC booster station and HVDC converter/HVAC substation, including site layout arrangements and potential external design and façade treatments for buildings on the sites. Further, Hornsea Three will consider potential options for onsite landscape screening, which be considered in response to the ongoing design work. These further measures may further mitigate impacts and this will be considered further in the assessment that accompanies the final DCO application.

Future monitoring

5.10.3.7 No future monitoring is necessary or recommended

5.10.4 Decommissioning phase

5.10.4.1 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 5.5 along with the maximum adverse scenario against which each decommissioning phase impact has been assessed.

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

Decommissioning works along the cable route (including compounds and construction side accesses) and 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.

5.10.4.3 Impacts during the decommissioning phase of the cable route and the 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, but effects on the settings of heritage assets at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation would be reversed (see paragraphs 5.10.2.8 to 5.10.2.158 and the summary in Table 5.13). Therefore, the effect of the decommissioning phase of Hornsea Three is assessed to be **Moderate** benefit, which is significant in EIA terms.

Decommissioning works along the cable route (including compounds and construction side accesses) and 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.

5.10.4.4 Impacts during the decommissioning phase of the cable route 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, but effects on the overall historic landscape at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation would be reversed (see summary in Table 5.13). Therefore, the effect of the decommissioning phase of Hornsea Three is assessed to be **Minor** benefit, which is not significant in EIA terms.

Future monitoring

5.10.4.5 No future monitoring is necessary or recommended.

5.11 Cumulative Effect Assessment methodology

5.11.1 Screening of other projects and plans into the Cumulative Effect Assessment

5.11.1.1 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: Cumulative Effects Screening Matrix and Location of 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.

5.11.1.2 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 other project/plans currently under construction and/or those consented but not yet implemented, and/or those submitted but not yet determined 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 on relevant plans and programmes likely to come forward but have not yet submitted an application for consent (the PINS programme of projects is the most relevant source of information, along with the planning register held by the relevant local planning authorities). Specifically, this Tier includes all projects where the developer has submitted a Scoping Report; and
- 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 is the most relevant source of information, along with the planning register held by the relevant local planning authorities). Specifically, this Tier includes all projects where the developer has advised PINS in writing that they intend to submit an application in the future but have not submitted a Scoping Report.

5.11.1.3 The specific projects scoped into this CEA and the Tiers into which they have been allocated, are outlined in Table 5.11. The projects included as operational in this assessment have been commissioned since the baseline studies for this project were undertaken and as such were excluded from the baseline assessment.

Table 5.11: List of other projects and plans considered within the CEA.

Tier	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
1	***Residential Development***						
	Submitted but not yet determined	South Norfolk DC -2016/0713	2.5 km	Erection of 52 dwellings, open space and associated works (Full application)	2021	Yes	Yes
	Employment						
	Submitted but not yet determined	South Norfolk DC -2016/0764 Outline Application	736 m	Proposed employment development consisting of B1, B2 and B8 uses, associated access and landscaping; and proposed link road between the A140 and the B1113 with some matters reserved	2021	Yes	Yes
	Quarrying						
	Submitted but not yet determined	Norfolk County Council - 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	2019	Yes	No
2	***Offshore wind farms***						
	Pre-Application	Norfolk Vanguard. Application expected to be submitted to the Planning Inspectorate in Q2 2018	0 km	Norfolk Vanguard is a proposed offshore windfarm with an approximate capacity of 1800 MW off the coast of Norfolk. Onshore /cable route crosses that of Hornsea Three	2020	2021 to 2024	Yes
3	No Tier 3 Developments Identified						

5.11.2 Maximum adverse scenario

5.11.2.1 The maximum adverse scenarios identified in Table 5.12 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 and plans, in order to inform a 'maximum adverse 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 HVDC converter/HVAC substation parameters), to that assessed here be taken forward in the final design scheme.

Table 5.12: Maximum adverse scenario considered for the assessment of potential cumulative impacts on historic environment.

Potential impact	Maximum adverse scenario	Justification
Construction phase		
Construction works at Hornsea Three landfall, along the cable route (including the width of the stripped area of the cable route, any stripping required for soil storage, compounds and construction side accesses) and at the site of the onshore HVAC booster station and HVDC converter/HVAC substation could result in cumulative permanent loss of, or damage to, buried archaeological remains.	Tier 1 • South Norfolk DC -2016/0713; and • South Norfolk DC -2016/0764. Tier 2 • Norfolk Vanguard Tier 3 • No Tier 3 Projects.	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.		
Construction works at Hornsea Three landfall, along the cable route (including compounds and construction site accesses) could result in temporary cumulative impacts on the settings of heritage assets including SMs, Listed Buildings, Conservation Areas and Registered Parks and Gardens.		
Construction works at the onshore HVAC booster station and HVDC converter/HVAC substation could result in temporary cumulative impacts on the overall historic landscape.		
Construction works at the Hornsea Three landfall, along the cable route (including compounds and construction site accesses) could result in temporary cumulative impacts on the overall historic landscape.		
Operation 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 1* • South Norfolk DC -2016/0713; and • South Norfolk DC -2016/0764. Tier 2 • Norfolk Vanguard *Tier 3* • No Tier 3 Projects.	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.		
Decommissioning phase		
Decommissioning works along the cable route (including compounds and construction site accesses) and at the site 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.		
Decommissioning works, along the cable route (including compounds and construction site accesses) and at the site of the onshore HVAC booster station and HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.		

5.12 Cumulative Effect Assessment

5.12.1.1 A description of the significance of cumulative effects upon the historic environments arising from each identified impact is given below.

5.12.2 Construction phase

Construction works at Hornsea Three landfall, along the cable route (including the width of the stripped area of the cable route, any stripping required for soil storage, compounds and construction side accesses) and at the site of onshore HVAC booster station and HVDC converter/HVAC substation could result in cumulative permanent loss of or damage to, buried archaeological remains.

Tier 1

Magnitude of impact

5.12.2.1 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 receptors directly. The magnitude is therefore, considered to be **moderate**.

Sensitivity of receptor

5.12.2.2 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

5.12.2.3 Overall, it is predicted that 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** to **moderate adverse** significance, which is significant in EIA terms.

5.12.2.4 This effect applies to the unmitigated position. Designed in mitigation, such as that set out in Table 5.9, would reduce the impact. In addition, Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

Tier 2

Magnitude of impact

5.12.2.5 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 receptors directly. The magnitude is therefore, considered to be **moderate**.

Sensitivity of receptor

5.12.2.6 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

5.12.2.7 Overall, it is predicted that 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** to **moderate adverse** significance, which is significant in EIA terms. Again, this effect applies to the unmitigated position. Designed in mitigation, such as that set out in Table 5.9, would reduce the impact. In addition, Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

Tier 3

5.12.2.8 No Tier 3 cumulative projects have been identified and no further assessment is required.

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.

5.12.2.9 South Norfolk DC -2016/0713 is located close to a Grade II* listed building (List Entry Number 1050692). Any impacts would derive from the other development.

5.12.2.10 South Norfolk DC -2016/0764 lies in the vicinity of two Grade II listed buildings (list entry numbers 1050544 and 1050545) to the northwest of the cumulative project. In addition, Keswick Hall also listed at Grade II (list entry number 1306331) is located to its west. Any impact on the first two would derive from the cumulative development. There would be no impacts on Keswick Hall from the cumulative development.

Tier 1

Magnitude of impact

5.12.2.11 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

5.12.2.12 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

5.12.2.13 Overall, it is predicted that 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.

5.12.2.14 This effect applies to the unmitigated position. Designed in mitigation, such as that set out in Table 5.9, would reduce the impact. In addition, Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

Tier 2

Magnitude of impact

5.12.2.15 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

5.12.2.16 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

5.12.2.17 Overall, it is predicted that 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.

5.12.2.18 This effect applies to the unmitigated position. Designed in mitigation, such as that set out in Table 5.9, would reduce the impact. In addition, Hornsea Three will continue to develop the indicative construction strategy and optimise the location of temporary construction compounds, which may further mitigate impacts. The residual effect, taking into consideration all proposed mitigation, will be assessed in the ES which accompanies the final DCO application.

Tier 3

Magnitude of impact

5.12.2.19 No Tier 3 cumulative projects have been identified and no further assessment is required.

Construction works at Hornsea Three landfall, along the cable route (including compounds and construction side 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 1

Magnitude of impact

5.12.2.20 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

5.12.2.21 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

5.12.2.22 Overall, it is predicted that the sensitivity of the receptor is considered to be **medium** to **high a**nd 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 2

Magnitude of impact

5.12.2.23 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

5.12.2.24 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

5.12.2.25 Overall, it is predicted that 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

5.12.2.26 No Tier 3 cumulative projects have been identified and no further assessment is required.

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

Tier 1

Magnitude of impact

5.12.2.27 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

5.12.2.28 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

5.12.2.29 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 2

Magnitude of impact

5.12.2.30 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

5.12.2.31 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

5.12.2.32 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

5.12.2.33 No Tier 3 cumulative projects have been identified and no further assessment is required.

Construction works at Hornsea Three landfall, along the cable route (including compounds and construction side accesses) could result in temporary cumulative impacts on the overall historic landscape.

Tier 1

Magnitude of impact

5.12.2.34 For Hornsea Three landfall and the proposed cable route, any impacts on the overall historic landscape would be short- to medium- term and reversible. The magnitude is considered to be **negligible**.

Sensitivity of receptor

5.12.2.35 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

5.12.2.36 Overall, it is predicted that 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 **negligible adverse** significance, which is not significant in EIA terms.

Tier 2

Magnitude of impact

5.12.2.37 For the Hornsea Three landfall and the proposed cable route, any impacts on the overall historic landscape would be short- to medium- term and reversible. The magnitude is considered to be **negligible**.

Sensitivity of receptor

5.12.2.38 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

5.12.2.39 Overall, it is predicted that 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 **negligible adverse** significance, which is not significant in EIA terms.

Tier 3

5.12.2.40 No Tier 3 cumulative projects have been identified and no further assessment is required.

5.12.3 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.

5.12.3.1 Impacts during the operation and maintenance phase of the cable route and 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 and magnitude to those described and assessed under construction effects (see paragraphs 5.10.2.8 to 5.10.2.151 and the summary in Table 5.13). The effect will, therefore be of **minor** to **moderate adverse** significance, which is significant in EIA terms.

5.12.3.2 The effect applies to the unmitigated position. Designed in mitigation, such as that set out in Table 5.9, would reduce the impact. Hornsea Three will continue to develop the site layout and design details for the HVAC booster station and HVDC converter/HVAC substation, including site layout arrangements and potential external design and façade treatments for buildings on the sites. Further, Hornsea Three will consider potential options for onsite landscape screening, which be considered in response to the ongoing design work. These further measures may further mitigate impacts and this will be considered further in the assessment that accompanies the final DCO application.

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.

5.12.3.3 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 5.13). The effect would therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Again, the effect applies to the unmitigated position. Designed in mitigation, such as that set out in Table 5.9, would reduce the impact. Hornsea Three will continue to develop the site layout and design details for the HVAC booster station and HVDC converter/HVAC substation, including site layout arrangements and potential external design and façade treatments for buildings on the sites. Further, Hornsea Three will consider potential options for onsite landscape screening, which be considered in response to the ongoing design work. These further measures may further mitigate impacts and this will be considered further in the assessment that accompanies the final DCO application.

5.12.4 Decommissioning phase

Decommissioning works at Hornsea Three landfall, along the cable route (including compounds and construction side accesses) and at the site 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.

5.12.4.1 Impacts during the decommissioning phase of the cable route and the 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, but effects on the settings of heritage assets at the site of the onshore HVAC Booster Station and HVDC converter/HVAC substation would be reversed.

Decommissioning works at Hornsea Three landfall, along the cable route (including compounds and construction side accesses) and at the site of the onshore HVAC substation and HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.

5.12.4.2 Impacts during the decommissioning phase of the cable route and the 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, but effects on the overall historic landscape would be reversed.

5.13 Transboundary effects

5.13.1.1 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.

5.14 Inter-related effects

5.14.1.1 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, operational 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 operational 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.

5.14.1.2 A description of the likely inter-related effects arising from Hornsea Three on historic environment is provided in chapter 11: Inter-Related Effects (Onshore).

5.15 Conclusion and summary

5.15.1.1 Consultation has taken place with: Historic England and Norfolk County Council.

5.15.1.2 A series of desk based and field surveys of the cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation 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.

5.15.1.3 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.

5.15.1.4 The buried archaeological remains along the cable route, and at the onshore HVAC booster station and onshore HVDC converter/HVAC substation have been evaluated through a walkover survey and geophysical survey.

5.15.1.5 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.

5.15.1.6 The magnitude of the effects of Hornsea Three on heritage assets during the construction of the cable route, the onshore HVAC booster station and onshore HVDC converter/HVAC substation varies from none to moderate adverse. The magnitude of effects during the operational phases of Hornsea Three would be range from none to moderate adverse. Decommissioning effects would be similar but reversed for the settings of heritage assets, reducing as Hornsea Three was removed from the landscape.

5.16 Next Steps

5.16.1.1 The next steps from the PEIR phase to the submission of the ES will be to finalise the results of the onshore geophysical survey and fully incorporate those results into the ES chapter and annexes. As the design of the onshore HVAC booster station and onshore HVDC converter/HVAC substation develop, further consideration will be given to the potential impact on the settings of heritage assets, including the provision of visualisations as appropriate, supported by a programme of site visits. The outputs of the PEIR will be consulted upon with Historic England and NCC Archaeology as appropriate.

5.16.1.2 Hornsea Three will continue to refine the onshore cable route. It is possible that the final cable route alignment will have less impact on buried archaeology than the assessment at PEIR stage, noting at this time the final cable alignment is not known.

5.16.1.3 Hornsea Three will also continue to develop the design details for the HVAC booster station and HVDC converter/HVAC substation, including site layout arrangements and potential external design and façade treatments. Further, Hornsea Three will consider potential options for onsite landscape screening depending on the outcome of ongoing design work. These further measures may further mitigate impacts.

5.16.1.4 Hornsea Three will continue to develop the indicative construction strategy, and optimise locations for temporary construction compounds.

5.16.1.5 The outputs of the ongoing project design work will be considered further in the assessment that accompanies the final DCO application.

Table 5.13: 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
Construction Phase							
Construction works at Hornsea Three landfall, along the cable route (including the width of the stripped area of the cable route, any stripping required for soil storage, compounds and construction site accesses) and at the site of the onshore HVAC booster station and onshore HVDC converter/HVAC substation could result in permanent loss of, or damage to, buried archaeological remains.	See construction phase of Table 5.9	Moderate	Low to Medium	Minor to Moderate Adverse (significant in EIA terms)	None	Minor to Moderate Adverse (significant in EIA terms)	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 5.9	Minor	High	Moderate Adverse (significant in EIA terms)	None	Moderate Adverse (significant in EIA terms)	None
Construction works at Hornsea Three landfall, along the cable route (including compounds and construction site 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 5.9	Negligible	Medium to High	Negligible to minor Adverse (not significant in EIA terms)	None	Negligible to minor Adverse (not significant in EIA terms)	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 5.9	Minor	Low	Minor Adverse (not significant in EIA terms)	None	Minor Adverse (not significant in EIA terms)	None
Construction works at Hornsea Three landfall, along the cable route (including compounds and construction site accesses) could result in temporary impacts on the overall historic landscape.	See construction phase of Table 5.9	Negligible	Low	Negligible Adverse (not significant in EIA terms)	None	Negligible Adverse (not significant in EIA terms)	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
Operation Phase							
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 5.9.	Minor	High	Moderate Adverse (significant in EIA terms)	None	Moderate Adverse (significant in EIA terms)	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 5.9.	Negligible	Low	Negligible Adverse (not significant in EIA terms)	None	Negligible Adverse (not significant in EIA terms)	None
Decommissioning Phase							
Decommissioning works along the cable route (including compounds and construction side accesses) and 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.	See decommissioning phase of Table 5.9.	Minor	High	Moderate Benefit (significant in EIA terms)	None	None	None
Decommissioning works along the cable route (including compounds and construction side accesses) and 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.	See decommissioning phase of Table 5.9.	Minor	Medium	Minor Benefit (not significant in EIA terms)	None	None	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 (2011c) 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.

Department of Energy and Climate Change (2011b) National Policy Statement for Renewable Energy Infrastructure (EN 3). 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 Stationary 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. Part 7: 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.