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25 ARCHAEOLOGY AND CULTURAL HERITAGE

25.1 Introduction

25.1.1 This section of the Environmental Statement (ES) assesses potential impacts to known and potential onshore heritage assets as a result of the proposed Rampion Offshore Wind Farm (the Project). An assessment has been undertaken of potential direct physical impacts from onshore elements of the Project, i.e. the landfall, onshore cable route and substation, and potential visual/indirect impacts associated with the offshore wind farm on heritage assets within the zone of theoretical visibility (ZTV). The ZTV is described in Section 12 (Seascape, Landscape and Visual Impact). The assessment of the offshore heritage assets is described in Section 13 (Marine Archaeology).

25.1.2 This impact assessment has been completed following a desk-based assessment (DBA), field reconnaissance survey (FRS), site visits to determine visual impacts, a geophysical survey, and a geoarchaeological assessment.

25.1.3 The results of the DBA are presented as Appendix 25.1, the results of the geoarchaeological assessment are presented as Appendix 25.5 and the results of the geophysical survey are presented in Appendix 25.6.

25.1.4 The specific objectives of the assessment were:

- To establish, from documentary sources, the known archaeological and cultural heritage interest in the onshore cable corridor;
- To assess, from existing sources, the potential archaeological and cultural heritage interest in the onshore cable corridor;
- To provide an assessment of the importance of the identified archaeological and cultural heritage assets;
- To assess the overall impact (both direct physical and visual/indirect) of the Onshore Project on known and potential archaeological and cultural heritage assets; and
- To make recommendations on the need for and scope of any mitigation that may be required.

25.2 Legislation and Policy Context

Key Legislation

25.2.1 **Ancient Monuments and Archaeological Areas Act 1979**: It is a criminal offence to carry out any works on or near to a Scheduled Monument without Scheduled Monument Consent.

25.2.2 **Planning (Listed Buildings and Conservation Areas) Act 1990**: No works can be carried out in relation to a listed building without listed building consent. Designation of an area as a 'conservation area' introduces general controls over demolition and development within that area.

25.2.3 **Treasure Act 1996:** The 1996 Act defines 'Treasure' as any object that is at least 10% gold or silver, associated coins or groups of coins which are over 300 years old, objects formerly classed as 'treasure trove' (i.e. deliberately deposited items with a high content of gold or silver) and any objects found in association with the above. Any find of 'Treasure' must be reported to the local Coroner.

25.2.4 **Burial Act 1857:** Under Section 25 of the 1857 Act, it is generally a criminal offence to remove human remains from any place of burial without an appropriate licence issued by the Ministry of Justice (MoJ), although recent legislative changes indicate that some cases are exempt from this requirement

25.2.5 **Hedgerow Regulations 1997**: A local authority can prohibit the removal of an 'important' hedgerow. Hedgerows can be considered important on grounds of historical or archaeological value or association

National Policy Context

25.2.6 National Policy Statements (NPS) provide the primary basis on which the Secretary of State is required to make its decisions. The specific assessment requirements for historic environment are set out below.

25.2.7 The overarching NPS for Energy (EN-1) (July 2011) sets out in Section 5.8 policy in relation to energy developments and the historic environment.

25.2.8 Paragraph 5.8.8 states that: *As part of the ES (see Section 4.2) the applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset. As a minimum the applicant should have consulted the relevant Historic Environment Record 120 (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*."

25.2.9 Paragraph 5.8.9 states that: *"Where a development site includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field valuation. Where proposed development will affect the setting of a heritage asset, representative visualisations may be necessary to explain the impact."*

25.2.10 Paragraph 5.8.10 states that: "*The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents*"

25.2.11 The NPS for Renewable Energy Infrastructure (EN-3) provides additional policy relating to offshore wind farm impacts and the historic environment.

25.2.12 Paragraph 2.6.141 states that: "*Desk based studies should take into account any geotechnical or geophysical surveys that have been undertaken to aid the wind farm design."*

25.2.13 Paragraph 2.6.142 states that: "*Assessment should also include the identification of any beneficial effects on the historic marine environment, for example through improved access or the contribution to new knowledge that arises from investigation."*

25.2.14 Paragraph 2.6.143 states that: "*Where elements of an application (whether offshore or onshore) interact with features of historic maritime significance that are located onshore, the effects should be assessed in accordance with the policy at Section 5.8 in EN-1."*

National Planning Policy Framework (NPPF)

25.2.15 The assessment has been undertaken in accordance with the NPPF, which outlines Government policy on the treatment of the historic environment (including both undesignated and designated sites) within the local planning process.

Policy Guidance

25.2.16 Adopted and emerging planning policies that are relevant to the Project are addressed in Section 4 (Planning Policy Context).

Guidance Notes and Standards

25.2.17 This assessment and its technical appendices were compiled according to the Institute for Archaeologists' ('IfA') *Code of Conduct* (2010) and *Standard and Guidance for Archaeological Desk-based Assessment* (2011).

25.2.18 Methodologies for assessment as detailed in the following guidance documents have been followed:

- English Heritage (2007), 'Climate Change and the Historic Environment';
- English Heritage (2005), 'Wind Energy and the Historic Environment';
- English Heritage (2008), 'Conservation Principles; Policy and Guidance for the Sustainable Management of the Historic Environment';

- English Heritage (2008), 'The National Historic Seascape Characterisation Method Statement';
- English Heritage (2011), 'The Setting of Heritage Assets'; and
- English Heritage (2011), 'Seeing History in the View'.

25.3 Scoping and Consultation

25.3.1 As part of the scoping phase of the EIA, a scoping report (E.ON/RSK, September2010) was prepared in order to set out the proposed approach to EIA in respect of the Project, including the identification of assessment methodologies for each of the EIA topic areas to be assessed. The scoping report was submitted to the IPC in September 2010. A Scoping Opinion (IPC, October 2010) was received, incorporating comments from a wide range of consultees. A copy of the Scoping Report and Scoping Opinion including consultee comments are included in Appendix 5.1 and 5.2. The information and advice received during the scoping process with regard to archaeology and cultural heritage issues is summarised in Table 25.1.

Table 25.1: Relevant Scoping Responses

Date	Consultee	Comments	Where addressed
October 2010	IPC	Response refers to WSCC's opinion (12/10/10 below)	-
11/10/10	English Heritage	Consideration should be given to the assessment of potential direct physical impacts through installation of the substation	DBA (Appendix 25.1) & Geophysical Survey (Appendix 25.6)
		Consideration should be given to the assessment of non-visual impacts on the setting of heritage assets through installation of the cable	Site-specific impact assessment Table 25.11
		Consideration should be given to the assessment of potential impacts on heritage assets or their settings through decommissioning	Paragraph 25.8.22
		Recommendation that the assessment methodology includes provision for field evaluation to inform the impact assessment (geophysical survey/ palaeoenvironmental and geoarchaeological survey/trial trenching – according to Written Schemes of Investigation (WSI)	Further Assessment and Mitigation Section 25.8

Date	Consultee	Comments	Where addressed
		Methodology should address the potential impact of onshore works on the settings of designated and nationally important non-designated heritage assets [WSCC confirmed during later consultations that impacts on the setting of heritage assets need only be considered for permanent impacts, as in the case of the substation]	Visual assessment Paragraph 25.7.18-19
12/10/10	West Sussex County Council	Inspection of relevant aerial photographs should include the National Monument Record (NMR) collections covering the proposed cable routes, and should include data reported upon in English Heritage's National Mapping Programme (NMP) report	DBA (Appendix 25.1) Part 6.7
		The DBA should consider the potential impacts of onshore works upon geoarchaeological deposits	Geoarchaeological Assessment (Appendix 25.5)
		For the sections of the cable routes that run through the Sussex Weald available relevant high-resolution LiDAR and aerial photography should be obtained and inspected	WSCC confirmed during later consultations that geophysical survey would appropriately replace LiDAR and aerial photography (AP) assessment

25.3.2 Further consultation with statutory consultees including meetings with West Sussex County Council (WSCC) was undertaken during the EIA process. A summary of comments is provided in Table 25.2.

Table 25.2: Additional Statutory Consultations

Consultee	Comments
WSCC: Meeting, 16/11/10	Assessment and mitigation should be led by Historic Landscape Characterisation (HLC)
	Mitigation should consider historic field boundaries, based on an assessed scale of importance
WSCC Meeting, 28/11/11	Magnetic geophysical survey (gradiometry) would be acceptable in place of LiDAR, if carried out over the entire route (i.e. even where NMP data exists) but excepting physically-constrained areas and previously evaluated areas

Consultee	Comments
	The geophysical survey could also suffice to replace historical aerial photograph assessment, but high-resolution modern aerial photography should be assessed for the entire route
	Historical aerial photograph assessment could be maintained for Mill Hill
	Geotechnical site investigations should be archaeologically monitored
WSCC/ English Heritage (EH): Emailed responses to consultation request re. visual assessment 02/04/12	WSCC express that landscape visibility can extend upwards of 70km.
	EH request details on scale of substation in ES, as well as photomontage. No concerns regarding visual impacts from the substation due to lack of designated assets in its vicinity Regarding potential impacts of wind farm, EH would expect assessment to include: -Receptors on the coast with unimpeded sea views; and -Receptors on the South Downs. Comment that at distances of 15km or less, visual impact is expected to be 'minimal'

25.3.3 The scope of the assessment was modified accordingly to take account of the above consultee responses and the opinions of the IPC, the findings of which were reported in the Draft ES.

25.3.4 As detailed in Section 5 – EIA Methodology, an extensive programme of engagement has been undertaken with regard to the Project; details of which are provided in the Consultation Report (which accompanies the DCO application). This included publication of the Draft ES as part of the Section 42 and Section 48 consultation.

25.3.5 Following a review of consultee feedback on the Draft ES, the following modifications were made to the Project and overall assessment scope:

- Explanatory text regarding the concept of 'setting' from EH, the visual impact assessment for terrestrial heritage assets as a result of the offshore wind farm has been revisited;
- WSCC's comments regarding superseded documentary sources have been acknowledged and the DBA updated accordingly;
- Heritage visual impact has been updated based on new ZTV prepared as a result of revised turbine layouts (See Section 12 – Seascape, Landscape & Visual). As a result there are identified visual impacts to fewer heritage assets.

25.3.6 Full details of the consultation process and associated outcomes are documented in Document 5.1 [Consultation Report].

25.3.7 WSCC has been further consulted with regards to the results of this impact assessment. Proposals for further assessment and mitigation are in accordance with comments received.

25.3.8 EH has have been further consulted with regards to agreement of methodologies for crossing the Scheduled Monument (SM) (RSK ID 99) at Tottington Mount, and obtaining Scheduled Monument Consent (SMC).

25.4 Assessment Methodology

Study Areas

25.4.1 This assessment concentrates on two study areas:

- A 1km-wide study area centred on the cable corridor (500m either side of the centreline), thus incorporating the landfall and the proposed substation site (hereon referred to as the onshore cable corridor). This has been defined to identify known, and determine the likely potential for currently unknown, heritage assets upon which physical impacts could potentially occur. In order to identify specific locations along the cable route, each road crossing (RDX) is numbered in sequence from the foreshore, annotated on Figure 25.1. Plot numbers are sequential from the RDX, thus individual plots are referenced throughout this section in the format e.g. RDX01/01, RDX01/02, RDX01/03 etc.

- A 25km study area surrounding the offshore wind farm site, based on the ZTV (based on 100 turbine layout with a turbine hub height of 124m and an overall height to blade tip of 210m) to identify designated heritage assets (or equivalent) upon which visual impacts could potentially occur (Figure 25.4). SMs, Grade I and II* Listed Buildings (LBs), Historic Battlefields, Registered Parks and Gardens (RPGs) and Conservation Areas have been assessed to a maximum study area of 25km, as long-distance views can be significant to the reason for designation of these assets.

25.4.2 A summary of known archaeological and cultural heritage resources is presented in two gazetteers, using information from the data sources listed below for the cable route study area (Appendix 25.2) and the visual study area (Appendix 25.3). All heritage assets are presented on Figures 25.1 and 25.2.

25.4.3 All sites within the gazetteers have been allocated a unique reference number, e.g. RSK ID 1 for the cable route study area, and RSK ID V1 for the visual study area. Note – all heritage asset ID numbers are unique, but not continuous; due to revised turbine layouts, a number of lines from the gazetteer have been deleted since they fell outwith the study area for the final assessed layout.

Establishment of Baseline Environment

Data Sources

25.4.4 The sources listed in Table 25.3 were consulted to inform the desk-based assessment.

Table 25.3: Data Sources Consulted and Information Obtained

Source	Data Obtained/Viewed
West Sussex Historic Environment Record (HER)	County list of known sites and monuments of archaeological interest, HLC; designated heritage assets, historical maps, aerial photographs
English Heritage National Monuments Record (NMR)	List of known sites and monuments of archaeological interest, designated heritage assets
Landmark Mapping	Historic maps, geological maps
National Heritage List maintained by EH	Designated heritage assets in wider area for visual assessment
Local planning authorities	Conservation areas and any other local heritage designations
Provided to RSK by E.ON	High-resolution modern aerial photographs
Contribution: Archaeology South East (ASE)	Geoarchaeological assessment

Field Reconnaissance Survey

25.4.5 The onshore cable corridor was systematically walked and described by plot, by an appropriately qualified archaeologist, recording all observations with regards to:

- Above-ground, negative earthwork, or structural features;
- Soil discolouration, crop or parch marks indicative of subsurface features;
- Surface finds;
- Evidence of current and previous land use, boundaries, topography and aspect;
- Exposed geology;
- Watercourses; and
- Health and safety considerations for further assessment stages.

Field Boundaries

25.4.6 In order to classify 'important hedgerows', a summary of criteria from the Hedgerow Regulations 1997 is presented below:

- Parish or township boundary;
- Part of a SM;
- Recorded in the HER (note that an inclusive approach has been undertaken whereby the hedge is considered important regardless of the date the heritage asset was entered into the HER);
- Situated within, adjacent to or associated with an SM or heritage asset in the HER;
- Defines or is visibly related to pre-1600 estate or manor boundary;
- Integral part, part of or visibly related to a substantially complete field system pre-dating inclosure; and
- Pattern is a key landscape characteristic as defined by LPA as 'historic'.

Visual Study Area Site Visits

25.4.7 The assessment of visual impacts from the offshore wind farm on terrestrial designated heritage assets specifically aims to identify potential change within views from, to, across and between designated heritage assets, where these contribute to heritage asset's significance.

25.4.8 The designated heritage assets within the Study Area were initially plotted and their location compared with ZTV. The ZTV used for the assessment is based on a layout considered to be the worst-case scenario for heritage assets. For those assets within the ZTV, a screening exercise then identified whether the asset (based on type and location) was likely to have surroundings in which the asset is experienced that could be affected by the proposed development. Those assets where the offshore development would have no effect on their surroundings were not subject to any further assessment.

25.4.9 For those assets or settings sensitive to visual impacts and within the ZTV, a further assessment was made, both as a desk-based exercise and using site visits. The assessment considered whether there was any visual, spatial or historic relationship between the asset and its setting and the area of the proposed development; and if there was, the degree to which that contributes to the asset's significance. As such, the assessment considered the following:

- Asset significance;
- Setting definition;
- Asset character, integrity, appearance and the way in which it is appreciated;
- Relationships with other heritage assets, including group value and shared settings;

- Reasons for designation, and degree to which they contribute to appreciation and significance of the asset;
- Formal design - intended sight lines and vistas, intervisibility with contemporaneous and other heritage assets, and natural features;
- 'Key' (principal/critical) views towards, from, and within heritage asset;
- Topography/landscape situation;
- Asset scale: prominence/dominance;
- Relative anticipated scale of the proposed development;
- Landscape character, particularly unaltered settings; and
- Degree of existing alteration, and significant existing impacts including indirect impacts.

Geoarchaeological Assessment

25.4.10 Geoarchaeological potential of the cable route study area is addressed in terms of characterisation of segments along the onshore cable corridor on the following criteria:

Sedimentary Context

25.4.11 Nature of the landform and depositional environment describing likely depositional regime/process, time span represented and depth.

Archaeological and Palaeoenvironmental Potential

25.4.12 Archaeological potential is characterised on a relative low, medium, high criteria, assessed on the basis of current knowledge of each deposit type within the region and on the basis of regional frameworks under development as part of the Kent County Council-managed South East Region Research Framework. High archaeological potential as been assessed as such either on the basis of frequency of finds within the deposits type, or on the basis of the academic significance and contexts of finds which may be rare (e.g. Palaeolithic artefacts).

25.4.13 Palaeoenvironmental potential has been rated on the basis of likely preservation of useful indicators (e.g. molluscs, plant macrofossils, pollen, insects or fauna). For example, the palaeoenvironmental potential for alluvial deposits is rated as high, but is low for decalcified clay with flints.

Vulnerability

25.4.14 This criterion has been assessed on the basis of the likely effects of the Project on the resource. 'Low' to 'moderate' suggests that the resource is widely distributed

(vertically and horizontally) and/or resistant to effects such as changes in drainage (e.g. head deposits), whereas 'high' suggest that the impact of development could significantly alter preservation conditions (e.g. of peat deposits or anaerobic alluvium).

25.4.15 Approaches towards investigation/mitigation ahead of and during the construction phase are suggested.

Geophysical Survey

25.4.16 Magnetic surveying measures the absolute value of the Earth's magnetic field and is used to identify small perturbations that are caused by variations in the electromagnetic properties of the subsurface. The technique is used extensively in archaeological investigations to identify below-ground structures and associated variations in the shallow subsurface such as infilled negative features (archaeological ditches and pits etc.).

25.4.17 The equipment used was a Geometrics G858 Caesium Vapour Magnetometer with two sensors arranged with a 1m horizontal separation. This type of magnetometer is commonly used for high-resolution surveys as it exhibits a high degree of accuracy (0.01nT) and tolerance of large vertical gradients. The dataset was collected using multiple G858 instruments, in addition to utilising a G880 single sensor magnetometer as a base station. The base station records the variation of the Earth's magnetic field throughout the survey so that the field data can be corrected for the diurnal variation at the processing stage.

25.4.18 A 65m-wide corridor was surveyed for the accessible length of the onshore cable route. Agreed in advance with WSCC, the survey area comprised the route north of the Sompting bypass only, since the area between the bypass and the landfall was identified as previously disturbed through landfill activity. Total field magnetic data was collected along parallel lines, in alternate directions, along the length of the proposed cable route. Sensors were mounted on instrument frames 1m apart, and the operator walked along lines 2m apart – such that when the data were combined the overall sensor separation was 1m. Data were located using a dGPS system and were continuously sampled at 10 times a second producing a data set with a high spatial resolution (nominally at 0.15m intervals along the line).

Impact Assessment

Receptor Importance

25.4.19 The relative importance of each receptor (see Table 25.4) has been determined to provide a framework for comparison between different sites. The categories of importance do not reflect a definitive level of importance or value of a site, but a provisional one based on a range of factors, primarily the evidential, historical, aesthetic and communal heritage values of the assets. When combined, these factors offer representations of the importance (or significance) of a given

resource and provide an analytical tool that can inform later stages of archaeological assessment and the development of appropriate mitigation.

Table 25.4: Criteria for Determining Receptor Importance

Importance of Receptor	Equivalent To
Very High (International)	World Heritage Sites, certain SMs and listed buildings of international importance
High (National)	SMs, listed buildings, English Heritage Register of Parks and Gardens, English Heritage Register of Historic Battlefields, Conservation Areas, and certain assets included on the County Historic Environment Record of national importance
Medium (Regional)	Important sites on a district level, buildings included on local lists (e.g. parks and gardens), assets with a district importance for education or cultural appreciation, and known assets included on the County Historic Environment Record of regional importance
Low (Local)	Important sites on a local level, assets with a parish importance for education or cultural appreciation, and known assets included on the County Historic Environment Record of local importance
Very Low	Heritage assets with no significant value or interest, and assets that are so damaged as not to merit inclusion in a higher grade
Uncertain	Heritage assets for which there is insufficient information to determine importance. This may include isolated find spots, unconfirmed cropmark sites or sites identified from documentary sources whose precise location cannot be determined.

Magnitude of Impact

25.4.20 Direct physical impacts are defined as damage to the fabric of a heritage asset, which typically could occur during construction phases.

25.4.21 Visual impacts are defined as visual change within a heritage asset or its setting as a result of the Project, resulting in an affected ability to interpret, understand or appreciate the asset's significance.

25.4.22 Indirect impacts are secondary, brought about by knock-on impacts as a result of the Project as proposed, such as machinery noise affecting appreciation of a heritage asset.

25.4.23 The magnitude of an impact reflects the scale of change, whether physical, visual, or indirect, which would potentially be caused by the Project and the effect this has on interpretation of significance and appreciation of the asset.

25.4.24 An assessment of the magnitude of impact has been implemented for each baseline heritage asset according to the scale set out in Table 25.5.

Table 25.5: Criteria for Determining the Magnitude of Impact

Magnitude of Impact	Equivalent To
High	Total loss or substantial harm to key elements/features/characteristics of the baseline (pre-development) conditions/the contribution that setting makes to significance is lost such that post-development character/composition/attributes of baseline would be fundamentally changed/no longer discernible.
Medium	Partial loss or harm to one or more key elements/features/characteristics of the baseline (pre-development) conditions/contribution that setting makes to significance is reduced such that post-development character/composition/attributes of baseline would be partially changed/ less discernible.
Low	Minor loss. Degradation arising from the loss/alteration to fabric or setting would be discernible but underlying character/composition/attributes of the baseline condition would be similar to pre-development circumstances/patterns, without affecting interpretation of significance of the asset or the contribution of its setting.
Negligible	Very minor loss. Change arising from loss/alteration would be discernible but would not noticeably affect significant character/composition/attributes of the baseline (pre-development) conditions.
None	No loss or alteration. Change does not affect fabric of asset, contribution setting makes to significance of asset, or extent to which significance can be experienced.

Significance of Impact

25.4.25 The potential physical impact of the onshore cable corridor has been assessed by comparing the land-take needed against the location and importance of the known heritage assets.

25.4.26 The potential visual/indirect impact of the offshore wind farm/onshore substation has been assessed by comparing the proposed turbine positions/onshore substation location against the location and direction of significant views associated with known heritage assets and their settings.

25.4.27 To assess the impact of the Project on each heritage asset, the significance of any impact has been quantified through comparison of the importance of each heritage asset against the potential magnitude of change upon it, in accordance with Table 25.6.

Table 25.6: Criteria for Determining the Significance of Impact

Magnitude of Impact	Importance of Receptor					
	Very High	**High**	**Medium**	**Low**	**Very Low**	**Uncertain**
High	Severe	Major	Moderate	Moderate	Minor	Uncertain
Medium	Major	Major	Moderate	Minor	Minor	
Low	Moderate	Moderate	Minor	None	None	
Negligible	Minor	Minor	None	None	None	
None	None					
Uncertain	Uncertain					

25.4.28 The assessment made of the significance of impact in this section is in all cases referring to the effects of the Project prior to the implementation of mitigation measures.

Significance of Residual Effects

25.4.29 The residual effects are those which would remain, post implementation of mitigation measures.

Uncertainty and Technical Difficulties Encountered

Impact Assessment

25.4.30 The limitations of an impact assessment of the Project include:

- The lack of clarity surrounding the extent of some sites. This makes it difficult to provide a precise assessment of potential impact; and
- The possibility that unknown sites would be encountered during construction.

25.4.31 The development of mitigation strategies considers these points.

Geophysical Survey

25.4.32 The survey technique is sensitive to above-ground metallic objects, and while these effects can be partially compensated for by careful analysis of the data from each sensor, large signals can mask those more subtle signals from subsurface features.

25.5 Environmental Baseline

25.5.1 Photographs ('plates') illustrative of both the onshore cable corridor and heritage assets within the 25km visual study area are included as Appendix 25.4 and referenced in the text below.

25.5.2 Period timescales used in this assessment are:

Period	Start	Ends		Period	Starts	Ends
Prehistoric				**Historic**		
Palaeolithic	450,000 BC	12,000 BC		Roman	AD 43	AD 410
Mesolithic	12,000 BC	4,000 BC		Early medieval (or 'Saxon')	410 AD	AD 1066
Neolithic	4,000 BC	2,000 BC		Medieval	1066 AD	AD 1485
Bronze Age	2,000 BC	600 BC		Post Medieval	1485 AD	AD 1900
Iron Age	600 BC	AD 43		Modern	1900 AD	Present

Landscape Character

25.5.3 The landscape of the onshore cable corridor can broadly be divided into three categories:

- Coastal/Urban Fringes (Plots RDX00/01 – 03/02);
- Uplands: South Downs, Adur Flood Plain and Eastern Downs (Plots RDX 04/01 – 09/06); and
- Lowland/Inland: Scarp Footslopes, Low Weald and Upper Adur Valley (Plots RDX 10/01 – 14/04).

Historic Landscape Characterisation

25.5.4 The national programme of Historic Landscape Characterisation (HLC) has been implemented in the region encompassing the study area.

25.5.5 In total, the onshore cable corridor passes through six 'broad' characterisation types, the lowest level of Sussex HLC characterisation:

- Coastal (Plot 0/1 = 0.75% total route);
- Recreational (Plots 1/1 – 1/4 = 2.99% total route);
- Woodland (Plots 1/5, 1/6 & 9/5 = 2.24% total route);
- Reclaimed Marshland (Plots 1/8 & 1/9 = 1.49% total route);
- Designed Landscapes (Plot 14/1a = 0.75% total route); and
- Fieldscapes (Plots 1/10 – 14/5 = 91.78% total route).

25.5.6 Within the Broad Type 'Fieldscapes' there are three main field sub-types:

- Assart Fieldscape (4.47% total route);

- Formal Fieldscape (50% total route); and
- Informal Fieldscape (35% total route).

25.5.7 The Sussex HLC has recorded 'Boundary Type' as one of the attributes for fieldscapes. A pattern emerges with the South Downs marking a clear delineation between hedgerows and wooded hedged fields, grassy banks and fences and ditches.

Designated Heritage Assets

25.5.8 Identified designated heritage assets are summarised below; these are described more fully within the DBA (Appendices 25.1 and 25.2) and are all of 'high' importance.

World Heritage Sites

25.5.9 There are no World Heritage Sites within the onshore cable corridor, or within the 25km visual study area.

Scheduled Monuments

25.5.10 There are three Scheduled Monuments (SMs) within the onshore cable corridor:

- Old Erringham Deserted Medieval Village, Upper Beeding (RSK ID 71). Scheduling includes remains of a chapel (RSK ID 72);
- Remaining part of Cross Dyke on Beeding Hill (RSK ID 78) – excavated (Bedwin, 1977) and partially removed by modern quarrying activity; and
- Cross Dyke on Tottington Mount (RSK ID 99) (Plates 12 and 13).

25.5.11 There are 259 SMs within the 25km visual study area, of which 199 are within the ZTV. Following screening, 19 SMs were visited for detailed visual assessment (RSK IDs 26 (Plate 19), 50 (Plate 20), 66, 70, 83, 87 (Plate 21), 157, 198, 199, 200, 238, 240, 250, 262, 269, 270, 278, 287 (Plate 22 and 288).

Registered Parks and Gardens and Historic Battlefields

25.5.12 There are no Registered Parks and Gardens (RPGs) or Registered Battlefields within the onshore cable corridor.

25.5.13 There are 12 RPGs within the 25km visual study area. Eight are within the ZTV of which six are Grade II* listed, and nine are Grade II listed. All RPGs within the ZTV were visited for detailed visual assessment (RSK IDs 4, 5, 6, 7 (Plate 16), 13, 14 (Plate 17), 15 (Plate 18) and 16).

25.5.14 There is one Historic Battlefield within the 25km visual study area that is not located within the ZTV.

Listed Buildings

25.5.15 There are four listed buildings (LBs) within the onshore cable corridor, all of which are Grade II.

25.5.16 There are 99 Grade I, and 175 Grade II*, LBs within the 25km visual study area. There are 59 Grade I and 83 Grade II* LBs within the ZTV. Following screening 22 LBs were visited for detailed visual assessment (RSK IDs 318, 315, 357 (Plate 23), 391, 394, 423, 424, 481, 500, 539, 541, 567, 576, 580, 581, 582, 599, 600, 601 (Plate 24), 602, 603 & 606 (Plate 25)).

Conservation Areas

25.5.17 There are no conservation areas (CA) within the onshore cable corridor.

25.5.18 There are 123 CAs within the 25km visual study area of which 49 are within the ZTV. Following screening, nine CAs were visited for detailed visual assessment (RSK IDs 658, 677, 695, 696, 702, 711, 718, 723 & 726).

Non-designated Heritage Assets

25.5.19 The HER, NMR, historic map regression, field reconnaissance survey and aerial photograph survey have resulted the identification of 186 non-designated heritage assets within the onshore cable corridor (Appendices 25.1 and 25.2) set out in Table 25.7.

Table 25.7: Non-designated Heritage Assets

Source	Period Represented
HER/NMR	58 prehistoric 15 Roman 20 medieval 29 post medieval 31 modern 10 unknown
Historic Map Regression	12 post medieval
Field Reconnaissance Survey	4 post medieval 2 modern 1 unknown
Aerial Photograph Assessment	2 prehistoric 2 unknown

Field Boundaries

25.5.20 A comparison of modern mapping with tithe mapping (1834–1851) indicates that nearly all of the modern field boundaries were established before the mid nineteenth century.

25.5.21 Of the 'important hedgerow' criteria listed in paragraph 25.4.6, parish boundaries are identified in the baseline data and are included on Figure 25.1 (see also Plate 5); in addition the field boundaries between RDX 01/11 – RDX 02 are identified 'important' due to their association with HER sites (RSK IDs 66 & 67).

25.5.22 HLC data indicates the potential for relic post-medieval designed parkland landscape features (i.e. field boundaries) at the substation location, north of RDX14.

25.6 Archaeological Potential

25.6.1 Table 6.3 of the DBA (Appendix 25.1) predicts archaeological potential based on topography and suitability for settlement. Vantage points are considered high potential (Plates 4 and 15).

25.6.2 The archaeological potential of the onshore cable corridor can be summarised, by period with reference to landscape character, as follows:

Table 25.8: Summary of Archaeological Potential

Period	Summary of Archaeological Potential
Early Prehistoric Period	**Moderate potential** for early prehistoric remains at specific locations along the onshore cable corridor (see Geoarchaeological Assessment, Appendix 25.5)
Later Prehistoric - Roman Period	**High potential** for settlement and field systems dating from the Iron Age and Roman periods in the lower foot-slopes of the South Downs **High potential** for Bronze Age and/or Roman funerary monuments in the uplands of the Eastern Downs **Moderate potential** for Roman activity around Horn Lane **Low-Moderate potential** for later prehistoric and Roman activity in the lowlands. Such activity is believed to have concentrated on the coast and in uplands
Early Medieval and Medieval Period	**Low potential** for early medieval remains throughout the entire onshore cable corridor. Such remains are believed to be located beneath existing villages and isolated farmsteads in the Low Weald **Moderate potential** for deserted medieval settlement remains east of Bramber First School and west of Woodmancote Place
Post Medieval and Modern Period	**Low potential** for post-medieval and modern remains that have not been previously recorded through historic map and aerial photograph assessments throughout the entire onshore cable corridor

Geoarchaeological Potential

25.6.3 Seven classifications of geoarchaeological sedimentary context (GSCs) have been developed to provide generic information for the range of deposits likely to be encountered throughout the onshore cable corridor. The anticipated nature and potential of each GSC has been characterised on the basis of BGS geological mapping, the results of previous geotechnical and geoarchaeological studies (both local and regional) and cross-referencing with the West Sussex HER records, to define aspects of linked archaeological potential.

25.6.4 A summary of likely archaeological and palaeoenvironmental potential across the onshore cable corridor is presented in Table 25.9. The full assessment is presented as Appendix 25.5.

Table 25.9: Geoarchaeological Potential

GSC Zone	GSC Code	Archaeological Potential	Palaeoenvironmental Potential
Alluvial Deposits (Holocene)	**ADH**	Pleistocene to Modern HIGH	Variable but locally VERY HIGH
Alluvial Deposits (Pleistocene)	**ADP**	Pleistocene dating and human activity HIGH	Variable but locally HIGH
Raised Beach Deposits	**RBD**	Pleistocene dating and human activity HIGH	Variable but locally HIGH
Clay with Flints	**CWF**	Pleistocene dating/ human activity MODERATE	LOW (unless calcareous)
Dry Valley Deposits	**DVD**	MODERATE to HIGH in colluvium.	MODERATE
Undifferentiated Head Deposits (Gault Clay and Lower Greensand)	**UHD**	MODERATE but untested	MODERATE but untested
Structural Surface Features (Cretaceous Geology)	**SSF**	MODERATE but untested	MODERATE but untested

Geophysical Survey

25.6.5 Results of the geophysical survey for the proposed cable route are presented as Appendix 25.6.

25.6.6 A geophysicist and an archaeologist have interpreted the data, and features have been classed based on the signal character and the geometry of the anomaly. The numbers and types of features interpreted in the survey are summarised in Table 25.10.

Table 25.10: Summary Results of Geophysical Survey

RDX	CLASS A Probable Archaeol-ogical site or feature	CLASS B Possible Archaeol-ogical site or linear	CLASS B Possible discrete features	CLASS C Interpreted Geological features	CLASS C Surface or subsurface metal	CLASS E Plough scars
3 to 4	1	2	N	N	Y	N
4 to 5	5	2	N	N	Y	N
5 to 6	9	9	Y	Y	Y	N
6 to 7	1	3	N	N	Y	N
7 to 8	2	3	N	N	Y	N
8 to 9	3	2	N	N	Y	N
9 to 10	5	9	N	N	Y	N
10 to 11	1	5	Y	Y	Y	N
11 to 12	N/A	N/A	N/A	N/A	N/A	N/A
12 to 13	0	6	N	N	Y	N
13 to 14	3	10	N	Y	Y	Y
14 to End	0	0	N	Y	Y	N

25.7 Predicted Impacts

Rochdale Envelope Principles

25.7.1 In line with the use of the "Rochdale Envelope" (see Section 5 – EIA Methodology), the assessment in this section has been based on a development scenario, which is considered to be the worst case in terms of impacts on archaeological and cultural heritage assets. Rochdale Envelope principles relating to impacts on archaeological and cultural heritage assets from the proposed onshore works relate primarily to the area of ground disturbance. Rochdale Envelope principles relating to impacts from the offshore wind farm on heritage assets relate primarily to the turbine layout, numbers and heights.

25.7.2 Installation of the onshore cable route will generally require a working width no wider than 30m comprising 15m for the cable easement and 15m for additional areas for storage of excavated material and access along the cable trench. Although the actual working width will generally be no wider than 30m, a general working width of 40m has been defined for the Onshore Project Area to allow a 10m for micrositing tolerance. Therefore, for the purposes of the assessment below, a working width of 40m has been adopted to represent the worst case scenario.

25.7.3 The substation site covers an area of approximately 23.3 hectares, of which some 7.01 hectares would be required for the permanent footprint of the substation, with the remainder required for site establishment, lay down areas, temporary construction access and landscaping. In the assessment of the substation, permanent land take of 7.01 hectares has been adopted as the worst case scenario.

25.7.4 For visual/indirect impacts associated with the offshore wind farm on heritage assets, the zone of theoretical visibility (ZTV) for a 100 turbine layout with a turbine hub height of 124m and an overall height to blade tip of 210m has been adopted as the worst case scenario.

Pre-construction

25.7.5 Geotechnical site investigation may expose archaeological and palaeoenvironmental remains.

Construction

25.7.6 Any physical impacts resulting from the cable/substation installation would occur during construction. Owing to the nature of the Onshore Project, a significant area of land would be subject to excavation, posing a direct physical threat to subsurface archaeological deposits.

25.7.7 Specifically, impacts would occur through groundworks, primarily topsoil/subsoil stripping activities, but also benching and drainage, the installation of temporary access roads, storage areas, offices and compounds as well as the cable route itself, the working width of which may be expanded in areas proposed for directional drilling.

Historic Landscapes

25.7.8 Unavoidably, it is anticipated that unknown heritage assets, hitherto unidentified through desk-based assessment, non-intrusive field assessment and further field assessment methods would be encountered during the construction phase. Areas of archaeological potential, identified through analysis of HLC, are presented in the DBA (Appendix 25.1).

Site-specific Impacts

25.7.9 Of the three designated heritage assets in the onshore cable corridor, there is a predicted direct physical impact on RSK ID 99: Bronze Age Cross Dyke on Tottington Mount.

25.7.10 There is a predicted direct physical impact on 37 of the total 186 non-designated heritage assets within the onshore cable corridor. In summary, the significance of impact, according to the assessment methodology in paragraphs 25.4.19 – 27 is summarised as follows: Major – 1, Minor – 5, None – 10, Uncertain – 21.

25.7.11 Site-specific direct physical impacts are summarised in Table 25.11. Results are presented from south to north for every heritage asset within the Development Area, as indicated on Figure 25.1. The impact assessment notes where 'pinch-pointing' of the working width would mitigate the identified impact through avoidance (preservation *in situ* – see Paragraph 25.8.12).

Table 25.11: Predicted Direct Physical Impacts from Cable Installation (south to north)

RDX Plot	RSK ID	Description – Impact Notes	Importance	Magnitude of Impact	Significance of Impact
01/03	57	Three WWII bomb craters See Figure 25.1, 1 of 9 One of three craters indicated on aerial photography (NMP assessment Figure 25.2, 1 of 5) impacted directly by cable excavation	Low	Medium	Minor
01/07	4	Brighton and Portsmouth Railway See Figure 25.1, 1 of 9 Avoided fully through HDD	Low	None	None
01/10	50	Roman pottery See Figure 25.1, 1 of 9 Artefact no longer present. Representative of associated subsurface site unknown	Uncertain	Uncertain	Uncertain
01/12-17	66	An area of earthwork ditches and enclosures See Figure 25.1, 1/2 of 9 & Plate 1 Confirmed through FRS, small portion impacted by entire working width	Uncertain	Low	Uncertain
01/12-18	67	Second World War military camp See Figure 25.1, 1/2 of 9 Not located through previous archaeological evaluation	Negligible	None	None
01/17	42	Cropmark traces of a possible trackway and ditch See Figure 25.1, 2 of 9 and Plate 1 Fully impacted by entire working width	Negligible	High	Minor

RDX Plot	RSK ID	Description – Impact Notes	Importance	Magnitude of Impact	Significance of Impact
02/01	24	Mesolithic flint implement See Figure 25.1, 2 of 9 Representative of associated subsurface site unknown	Uncertain	Uncertain	Uncertain
03/01	152	501 scrapers, 108 Piercers/Awls, 9 knives, 25 Multi-purpose tools, 1 gunlock flint, 21 notched pieces, 2 hammerstones. Bronze Age pottery and a small amount of roman pottery also See Figure 25.1, 2 of 9 Representative of associated subsurface site unknown	Uncertain	Uncertain	Uncertain
03/01	3	Projected line of Roman Road from Chichester to Brighton See Figure 25.1, 2 of 9 and Plate 2 Very small portion affected through perpendicular impact should road be open-cut	Uncertain	Negligible	Uncertain
03/02 – 04/03	36	Probable Iron Age or Roman field system See Figure 25.1, 2 of 9 Significant portion impacted by entire working width	Uncertain	Medium	Uncertain
04/01	195	Ridge and furrow See Figure 25.1, 2 of 9 Small portion impacted by entire working width	Low	Low	None
04/01	162	Pottery See Figure 25.1, 2 of 9 Artefact no longer present. Representative of associated subsurface site unknown	Uncertain	Uncertain	Uncertain
04/02	196	Ridge and furrow See Figure 25.1, 2 of 9 & Plate 3 Small portion impacted by entire working width	Low	Low	None
04/03	197	Ridge and furrow See Figure 25.1, 2 of 9 Small portion impacted by entire working width	Low	Low	None

RDX Plot	RSK ID	Description – Impact Notes	Importance	Magnitude of Impact	Significance of Impact
04/08	163	Burnt flint See Figure 25.1, 2/3 of 9 Artefact no longer present. Representative of associated subsurface site unknown	Uncertain	Uncertain	Uncertain
05/01	35	Cropmark remains of a probable a Romano-British settlement See Figure 25.1, 3 of 9 Small portion impacted by entire working width	Uncertain	Low	Uncertain
05/01	33	Prehistoric boundaries See Figure 25.1, 3 of 9 Very small portion impacted by cable excavation and running track if established on western side of centre line	Uncertain	Negligible	Uncertain
05/02-03	32	Possible prehistoric or later trackway or boundary ditches See Figure 25.1, 3 of 9 Significant portion impacted by entire working width	Uncertain	Medium	Uncertain
05/03-04	34	Probable Iron Age or Roman trackway See Figure 25.1, 3 of 9 and Plate 5 Very small portion affected through perpendicular impact	Low	Negligible	None
05/06-09	17	Remains of an Iron Age or Romano British field system See Figure 25.1, 3 of 9 and Plate 6 Significant portion impacted by entire working width	Uncertain	Medium	Uncertain
05/06	40	Probable Iron Age settlement See Figure 25.1, 3 of 9 and Plate 6 Very small portion impacted by entire working width	Uncertain	Negligible	Uncertain

RDX Plot	RSK ID	Description – Impact Notes	Importance	Magnitude of Impact	Significance of Impact
06/01-03	16	Medieval salt mounds See Figure 25.1, 4 of 9 and Plate 7 Small portion impacted by entire working width, however, one of many salt mounds indicated on aerial photography (NMP assessment Figure 25.2, 4 of 5) impacted directly by cable excavation	Low	Medium	Minor
-	1	Adur Navigation See Figure 25.1, 4 of 9 and Plate 7 Avoided fully by HDD	Low	None	None
-	5	Horsham and Shoreham on Sea Branch Railway See Figure 25.1, 4 of 9 and Plate 7 Avoided fully by HDD	Low	None	None
07/01	192	Possible artificial platform See Figure 25.1, 4 of 9 Significant portion impacted by entire working width	Low	Medium	Minor
07/03	84	Several possible ditches or geological marks See Figure 25.1, 4 of 9 and Plate 8 Small portion impacted by entire working width	Uncertain	Low	Uncertain
07/03	85	Two possible Bronze Age round barrows See Figure 25.1, 4 of 9 and Plate 8 One of two barrows indicated on aerial photography (NMP assessment Figure 25.2, 4 of 5) impacted directly by cable excavation	Uncertain	Uncertain	Uncertain

RDX Plot	RSK ID	Description – Impact Notes	Importance	Magnitude of Impact	Significance of Impact
08/02	73	Cropmarks of a rectangular enclosure and trackway on Beeding Hill See Figure 25.1, 5 of 9 and Plates 9/10 Significant portion impacted by cable excavation and running track if established on southern side of centre line	Uncertain	Medium	Uncertain
08/02	112	Bowl barrow See Figure 25.1, 5 of 9 and Plates 9/10 Avoidance through protection during construction phase	Medium	None	None
09/02	193	Earthworks See Figure 25.1, 5 of 9 and Plate 11 Significant portion impacted by entire working width	Low	Medium	Minor
09/03	99	Bronze Age cross dyke on Tottington Mount See Figure 25.1, 5 of 9 and Plates 12/13 Significant portion impacted by entire working width	High	Medium	Major
RDX11	2	Projected line of Roman Road from Barcombe Mills to Hardham See Figure 25.1, 6 of 9 If preserved, very small portion affected through perpendicular impact should road be open-cut	Uncertain	Negligible	Uncertain
11/01	202	Former field system See Figure 25.1, 6 of 9 and Plate 14 Small portion impacted by entire working width	Uncertain	Low	Uncertain
11/06	184	Tithe map plot name indicates archaeological potential: Barn Field See Figure 25.1, 7 of 9 Exact location/impact unknown	Negligible	Uncertain	Uncertain

RDX Plot	RSK ID	Description – Impact Notes	Importance	Magnitude of Impact	Significance of Impact
13/01	194	Ridge and furrow noted during AFRS See Figure 25.1, 8 of 9 Small portion impacted by entire working width	Low	Low	None
13/07	187	Tithe map plot name indicates archaeological potential: Mill Field See Figure 25.1, 8 of 9 Exact location/impact unknown	Uncertain	Uncertain	Uncertain
14/06	185	Tithe map plot name indicates archaeological potential: Barn Field and Barn See Figure 25.1, 9 of 9 Exact location/impact unknown	Negligible	Uncertain	Uncertain

Field Boundaries

25.7.12 'Important Hedgerows' are encountered along the cable route, as defined by the Hedgerow Regulations (1997). It is predicted that impacts would occur, as indicated on Figure 25.1, in the following plots:

- RDX01/15 – 16 - Sompting CP – Worthing District parish boundary;
- RDX04 (Lambleys Lane) - Worthing District – Sompting CP parish boundary;
- RDX05/03 – 04 - Sompting CP – Coombes CP parish boundary;
- RDX07/02 – 03 - Adur District – Upper Beeding CP parish boundary (Plate 5);
- RDX10/10 - Upper Beeding CP – Henfield CP parish boundary;
- RDX11/02 – 03 - Henfield CP – Woodmancote CP parish boundary;
- RDX13 (Wineham Lane) - Woodmancote CP – Twineham CP parish boundary; and
- RDX01/11 – RD02 - Boundaries associated with HER sites (RSK ID 66 & 67).

Geoarchaeology

25.7.13 Figure 25.3 shows 55 cable route zones and in Table 25.12 each zone is classified accruing to one or more geoarchaeological sedimentary context (GSC). For each zone the range of deposits and significance, and suggested methodological approach toward mitigation can be generated (Appendix 25.5).

Table 25.12: Summary of Geoarchaeological Impacts

GSC Zone	Solid	Superficial	GSC Code	Notes
Figure 25.3, 1 of 9				
1	Chalk	Alluvium	ADH	Beneath Modern Beach
2	Chalk	Alluvium	ADH	Beneath Made Ground
3	Chalk	Raised Beach	RDB/ADP	
4	Chalk	Head	UHD -RBD	
Figure 25.3, 2 of 9				
5	Chalk	Alluvium	ADH	
6	Chalk	Head	UHD -RBD	
7	Chalk	Head	UHD -RBD	
8	Chalk	Chalk	SSF	
9	Chalk	Head	DVD	
10	Chalk	Chalk	SSF	
11	Chalk	Head	DVD	
Figure 25.3, 3 of 9				
12	Chalk	Chalk	SSF	
13	Chalk	Head	DVD	
14	Chalk	Chalk	SSF	
15	Chalk	Head	DVD	
16	Chalk	Chalk	SSF	
Figure 25.3, 4 of 9				
17	Chalk	Clay-with-Flints	CWF	
18	Chalk	Chalk	SSF	
19	Chalk	Head	DVD - ADH	Alluvium in lower reaches
20	Chalk	Alluvium	ADH-ADP	Pleistocene terrace deposit will underlay Holocene alluvium
21	Chalk	Head	DVD - ADH	Alluvium in lower reaches
22	Chalk	Chalk	SSF	

GSC Zone	Solid	Superficial	GSC Code	Notes
Figure 25.3, 5 of 9				
23	Chalk	Head	DVD	
24	Chalk	Chalk	SSF	
25	Chalk	Head	DVD	
26	Chalk- U. Greensand – Gault	Solid	UDH - SSF	
Figure 25.3, 6 of 9				
27	Gault	Head	UDH – SSF	
28	Folkestone Beds (L.Greensand)	Head	UDH – SSF	Artefact-rich zone
29	Gault	Head	UDH – SSF	
30	Weald Clay	Alluvium	ADH - ADP	
31	Weald Clay	Weald Clay	UDH – SSF	
32	Weald Clay	Alluvium	ADH - ADP	
33	Weald Clay	Weald Clay	UDH – SSF	
Figure 25.3, 7 of 9				
34	Weald Clay	Head	UDH - ADH	Alluvium in lower reaches
35	Weald Clay	Weald Clay	UDH - SSF	
36	Weald Clay	Head	UDH - ADH	Alluvium in lower reaches
37	Lower Greensand	Weald Clay	UDH - SSF	
38	Lower Greensand	Head	UDH	
39	Folkestone Beds	Folkestone Beds	UDH - SSF	Artefact-rich zone
40	Folkestone Beds	Head	UDH	Alluvium in lower reaches
41	Lower Greensand	Lower Greensand	UHD- SSF	
42	Lower Greensand	Head	UDH	
43	Lower Greensand	Lower Greensand	UHD- SSF	
44	Weald Clay	Terrace Deposits	ADP	
Figure 25.3, 8 of 9				

GSC Zone	Solid	Superficial	GSC Code	Notes
45	Weald Clay	Terrace Deposits	ADP	
46	Weald Clay	Alluvium	ADH	
47	Weald Clay	Weald Clay	UHD	
48	Weald Clay	Alluvium	ADH	
49	Weald Clay	Weald Clay	UHD	
50	Weald Clay	Terrace Deposits	ADP	
51	Weald Clay	Weald Clay	UHD	
52	Weald Clay	Alluvium	ADH	
Figure 25.3, 9 of 9				
53	Weald Clay	Weald Clay	UHD	
54	Weald Clay	Alluvium	ADH	
55	Weald Clay	Weald Clay	UHD	

Geophysical Survey

25.7.14 Interpreted archaeological potential based on the results of the geophysical survey are as-yet untested through intrusive field evaluation (see paragraphs 25.8.3 – 25.8.6). In each case, the impact significance is therefore uncertain.

Operation

25.7.15 Any permanent visual impacts on terrestrial designated heritage assets would occur during the operational period of the Project and may potentially result from the onshore substation and the offshore wind farm.

Substation

25.7.16 The maximum vertical dimension of the onshore substation would be 12.5m. The nearest designated heritage asset to the substation site is the Parish Church of St Peter, located approximately 1km to the south-east in Twineham. The nearest non-designated heritage assets (<0.5km distance) comprise evidence for former temporary structures in adjoining fields (RSK IDs 185, 188 and 189).

25.7.17 No impacts on the setting or visual context of heritage assets are predicted owing to a lack of designated/sensitive assets in proximity to the proposed substation site, and the limited visibility of the substation post establishment of landscaping (see Section 26 – Landscape and Visual Impact, for indicative landscaping proposals at the substation site).

Offshore Wind Farm

25.7.18 The operational phase of a wind farm has the potential to visually affect the setting of terrestrial designated heritage assets, through interruption of sight-lines, deliberate long-vistas or intervisibility between designated assets. The Project primarily has potential to visually impact views out of heritage receptors. These kinds of view are significant if the designation of the receptor accounts for seascape setting in its description, or the asset significance specifically includes a relationship with the sea, or particular seascape views.

25.7.19 There are 670 terrestrial designated heritage assets within the study area, of which 475 are within the ZTV for the proposed offshore wind farm. The potential impact in terms of visual effects has been assessed for these heritage assets and is summarised in Appendix 25.3.

25.7.20 Visualisations including wirelines and photomontages have been undertaken across the entirety of the visual study area as part of the assessment of seascape, landscape and visual interests (see Section 12 – Seascape, Landscape and Visual Impact) and are cross-referenced in this assessment, where relevant.

Historical Seascape Characterisation

25.7.21 The National Historic Seascape Characterisation Method Statement (English Heritage, 2008) has been used to guide the methodology for assessment of the offshore wind farm. However, since the baseline section for this stretch of coast is yet to be completed, a full assessment of impact has not been possible.

25.7.22 A general assessment of the distance between the offshore wind farm and the coastline is considered sufficient that introduction of an offshore development would not impact on the interpretation of Broad Character Types along the coast, primarily ‘settlement’, ‘recreational’ and ‘sea defences’. The visual impact to coastal sub-character types (‘pier’, ‘golf course’, etc.) is anticipated to be none.

Historical Associations

25.7.23 The English Channel has set the scene for many historic events, including invasions such as the Battle of Hastings landing point and the Spanish Armada; and unions such as the series of coastal towns termed Cinque Ports, formed for military and trade purposes. It is not considered that the construction of an offshore wind farm in these waters has the potential to interfere with studies of such events.

25.7.24 Evidence suggests that people have travelled along the route of the South Downs Way for over 8000 years, back into the Mesolithic period. The high and drier chalk ridge offered much easier travelling than the thickly wooded Weald below. The South Downs Way is not a designated heritage asset. However, it is dotted with designated heritage assets ranging between Neolithic flint mines, Bronze Age barrows, Iron Age hill forts and medieval castles. Assessment of the following specific heritage assets, agreed by EH through consultation, has enabled a sequential assessment of the South Downs Way:

- Camp near Belle Tout Lighthouse (Beachy Head) (RSK ID V66);
- The Long Man of Wilmington (RSK ID V70);
- Firle Beacon (RSK ID V50, see Plate 20, Appendix 25.4);
- Ditchling Beacon (RSK ID V262);
- Devil's Dyke (RSK ID V238);
- Bramber Castle (RSK ID V157); and
- Chanctonbury Ring (RSK ID V240).

25.7.25 Negligible impacts are anticipated from the Camp near Belle Tout Lighthouse (RSK ID V66), Firle Beacon (RSK ID V50, representative for heritage assets in the vicinity), and the Chanctonbury Ring (RSK ID V240, also taken as representative for heritage assets in the vicinity). In total, these assessments are representative of 41 heritage assets in the South Downs (primarily SMs). Assessments are presented in Table 25.13.

25.7.26 No impact is anticipated from the other receptors representative of the South Downs Way (RSK IDs V70, V157, V238, & V262 are representative of proximal heritage receptors). Assessments are presented in Appendix 25.3.

25.7.27 The following specific prominent heritage assets elsewhere within the South Downs that are afforded an elevated vantage view of the Project were also visited for the assessment:

- Hollingbury Hill (RSK ID V199)
- Thundersbarrow Hill (RSK ID V250)
- Cissbury Ring (RSK ID V269)
- Highdown Hill (RSK ID V270)

25.7.28 The setting of these heritage assets, which have been sited so as to afford long-distance views (that, intentionally or not, include seascape views), is in each case considered to include the site of the proposed wind farm. The considerably altered, more immediate landscape setting, and relative scale of the development have been taken into consideration. The degree of change represented would be perceivable, but negligible, since it would not specifically impact on the aspects of the assets that make them significant. The impact would not alter the understanding or appreciation of the assets. Assessments are presented in Table 25.13.

Views from the sea

25.7.29 To assess the impact of the offshore wind farm upon terrestrial receptors on the coast within the 25km study area, a location must be chosen to the south of the offshore wind farm, where both the receptor and the turbines can be viewed and assessed together. An assessment carried out from the coast itself has concluded, however, that there are no heritage assets so prominent that they would be identified and their significance compromised from a distance of over 15km. The only prominent elements of the modern coastline are modern features, such as blocks of flats and a chemical works, or natural features such as the Downs.

25.7.30 No heritage assets have been identified that were constructed intentionally to be viewed from the sea, i.e. where an asset's significance is best appreciated from an offshore location that could be lost through construction of the proposed wind farm. (An example of such an asset would be a lighthouse, but no examples were identified in the study area.)

Views from land

25.7.31 In order to assess the impact of the offshore wind farm on views from terrestrial receptors, a screening exercise has identified those heritage assets where an association with the sea may be fundamental to its significance. These sites, subject to a site visit, comprised dominant features with wide settings, assets with potential vistas intentionally including the seascape, or those located directly on the coastline with an intentional focus towards the Channel, whether for aesthetic or functional (military) purposes.

25.7.32 All assets on the seafront were selected for assessment because of their clear relationship with the sea. Inland the assessment was more selective, since the predominantly tall seafront structures tend to obscure/restrict views of the sea from/to the more northerly heritage assets. In Brighton, topography is 'bowl-shaped', rising in the region of Queens Park (RSK ID V15) and Woodvale Cemetery (RSK ID V7) thus providing views out over Brighton in the foreground and on to the sea as a backdrop, and these heritage assets were visited for assessment.

25.7.33 Upon assessment of prominent heritage assets located in inland locations, such as Lancing College Chapel (RSK ID V489), it was found that offshore development would not have the potential to interfere with this prominence, due to the anticipated relative scale of the Project.

25.7.34 A relationship with the sea from a location over 15km away is usually a small element of many sensory influences. In each assessed case, it was considered that the relationship of a heritage asset with the surrounding landscape is always more relevant than that with the sea.

25.7.35 Landscape positions where the offshore wind farm would form a significant element in the view were identified, but these were either high natural landforms, or modern streetscapes. No locations were found to display a significant heritage significance to which the Project could impact.

Designated Heritage Assets

25.7.36 Of 670 designated heritage assets within the 25km study area, 195 were identified lying outwith the ZTV, and 351 screened as not sensitive to visual impacts (Appendix 25.3). The remainder were visited for detailed assessment (Appendix 25.3 and Table 25.13) as theoretically the wind farm could visually impact on significance. Of these, a proportion were found to be screened from views from existing structural or natural elements.

25.7.37 The assessment has confirmed that the offshore wind farm is located within the setting of many heritage assets, however, it is considered that distance is a mitigating factor. No significant impacts to heritage assets were identified. The scale of the proposed turbines would not bring about a magnitude of change sufficient to substantially affect what makes the heritage assets assessed significant.

25.7.38 In summary, the assessment has identified visual impacts to 91 of the terrestrial heritage assets within the study area. Of these, 42 are of moderate significance (one RPG, two SM, 17 LB II*, 14 LB I, and eight CA), and 49 are of minor significance (one RPG, 46 SM, one LB II*, and one CA).

25.7.39 The significance of heritage assets within the 25km study area was assessed with regards to the relationship formed with this association or vista. The influence of the seascape to the character of certain locations was found to be proportional to its distance from it. Heritage assets on the coast, typically within the 15km distance marker (Figure 25.4) were found more likely to associate with the sea, or that a view of the sea made up a significant part of the vista, and potentially contributed to the significance of the asset.

25.7.40 Heritage assets within this <15km study area, visited for detailed assessment (see Appendix 25.3 and Table 25.13) comprised the following:

- Grade I & II* Listed Buildings fronting the sea (RSK IDs V318, V335, V357, V391, V392, V393, V394, V423, V424, V481, V500, V539, V541, V555, V557, V558, V562, V567, V568, V569, V570, V572, V573, V576, V580, V581, V582, V599, V600, V602 and V603) see Plate 23, Appendix 25.4, and piers (RSK IDs V601 and V606) see Plates 24 & 25, Appendix 25.4;

- Registered Parks and Gardens: The Royal Pavilion (RSK ID V6), Woodvale Cemetery (RSK ID V7, see Plate 16, Appendix 25.4), Kemp Town Enclosures (RSK ID V14, see Plate 17, Appendix 25.4) and Queen's Park (RSK ID V15, see Plate 18, Appendix 25.4);

- Scheduled Monuments, coastal defences: Shoreham Fort (RSK ID V87, see Plate 21, Appendix 25.4); and

- Conservation Areas: Worthing, Marine Parade and Hinterland (RSK ID V677), Steyne Gardens (RSK ID V695), South Street (RSK ID V696), Brighton, Brunswick Town (RSK ID V702), Kemp Town (RSK ID V711), Pembroke and Princes, Hove (RSK ID V718), Regency Square (RSK ID V723) and Sackville Gardens, Hove (RSK ID V726).

25.7.41 In summary, of the heritage assets visited in the <15km study area, 42 are likely to experience moderate impact significance, and one is likely to experience minor impact significance as a result of the offshore wind farm.

25.7.42 Conversely, locations beyond 15km, even those significantly elevated, were found to exhibit more of a relationship with the surrounding landscape than the sea. If the sea was visible it was a minor element in the view, and in no cases was the seascape found to contribute to the significance of a heritage asset.

25.7.43 Heritage assets in this 15–20km study area, visited for detailed assessment (see Appendix 25.3 and Table 25.13), comprised the following:

- Registered Parks and Gardens: Preston Manor and Preston Park (RSK ID V5), and Highdown (RSK ID V13);

- Scheduled Monuments: Littlehampton Fort (RSK ID V83), Hillfort and Bowl Barrow on Seaford Head (RSK ID V198), Hollingbury Hillfort (RSK ID V199), Thundersbarrow Hillfort (RSK ID V250), Cissbury Ring Hillfort (RSK ID V269), Highdown Hill Camp (RSK ID V270), the Martello Tower on Seaford Esplanade (RSK ID V287, see Plate 22, Appendix 25.4); and

- Conservation Area: Arun, Littlehampton Seafront (RSK ID V658).

25.7.44 In summary, of the heritage assets visited in the 15-20km study area, eight are likely to experience minor impact significance as a result of the offshore wind farm.

25.7.45 Proportionality was even more pronounced at locations beyond 20km, where, despite indicated as within the ZTV for the proposal, the sea was frequently not visible owing to intervening landscape features, or the seascape vista took up such a minimal part of the view it was considered negligible. Furthermore, it was deemed that mitigating weather factors such as haze or cloud would severely limit the already minimal degree of visibility from this distance.

25.7.46 Heritage assets in this >20km study area, visited for detailed assessment (see Appendix 25.3 and Table 25.13) comprised the following:

- Registered Parks and Gardens: Arundel Castle (RSK ID V4) and Stanmer Park (RSK ID V16);

- Scheduled Monuments: Firle Beacon (RSK IDs V50, V77, V78, V145, V146, V152, V166 and V178), Camp near Belle tout Lighthouse (RSK ID V66), the Long Man of Wilmington (RSK ID V70), Bramber Castle (RSK ID V157), The Caburn Hillfort (RSK ID V200), Devil's Dyke Hillfort (RSK ID V238), Chanctonbury Ring Hillfort (RSK ID V240), Hillfort on Ditchling Beacon (RSK ID V262), Wolstonbury Camp (RSK ID V278); and

- Conservation Area: Arun, Bognor Regis, The Steyne and Waterloo Square (RSK ID V648).

25.7.47 In summary, of the heritage assets assessed in the >20km study area, 40 are likely to experience minor impact significance as a result of the offshore wind farm.

25.7.48 All assessments are presented in Appendix 25.3. For those receptors where assessment has anticipated Moderate impact significance, and for grouped assessments for the South Downs/South Downs Way (Minor impact significance), the results are presented in Table 25.13.

Table 25.13: Selected Results of Visual Impact Assessment (see Appendix 25.3 for full assessment)

Visual Receptor	Visual Impact Assessment
Registered Parks and Gardens – Moderate significance impacts	
RSK ID V14 Kemp Town Enclosures (LVIA VP-11) Plate 17, Appendix 25.4 <15km study area	Garden is significant in terms of its historic and artistic value, its unaltered character and relationship between buildings and spaces. The character is open and its group-setting (incorporating the surrounding listed structures) extends beyond its designation boundary to the distant sea-horizon. The location and orientation of the formal townscape was intentionally designed to embrace the sea view, and as such the southerly view constitutes a key element of its setting and significance. Although the northern portion of the park is well vegetated, benches are positioned within the designation looking south to appreciate the designed elements of the garden with the sea as a back-drop. Therefore the character of the RPG, and the way it was designed to be used and appreciated, relates to an expanse of adjacent seascape. The proposed development would not sever this relationship/the ability to interpret a relationship between the park and the sea. Intended intervisibility between the garden and surrounding designated structures would be preserved. The baseline situation when the RPG was designed, and currently, is one of an empty seascape. The scale of proposed turbines from this distance would be such that they would be visible, but not prominent relative to the expansive vista/the seascape. Although a change would be introduced within the RPG setting, on the whole the aesthetic values are preserved.
Coastal Defences – Scheduled Monuments - Moderate significance impacts	
RSK ID V26 Newhaven Military Fort and Lunette Battery Plate 19, Appendix 25.4 15-20km study area	Originally assessed as a Moderate significance impact, the revised turbine layouts (See Section 12 – Seascape, Landscape & Visual) now places the heritage receptor outwith the ZTV for the Project. No impact.
RSK IDV87 Shoreham Fort Plate 21, Appendix 25.4 <15km study area	The monument is in good condition and open to the public as a tourist attraction. The significance of the heritage asset lies in its architectural design, and as a functional structure with historical value. The setting is defined as the seascape to the horizon, since views south to the channel contribute towards understanding how the monument was used. The view south is fundamental to understanding how this class of monument was formerly used. It is this view that would be altered through the Project. However, it is not considered that this alteration would sever this relationship with the seascape, nor interfere significantly with interpretations of the defensive function of the monument. The scale of the turbines from this distance would not be such as to dominate in appreciation of the heritage asset, and their placement within a relatively small proportion of the overall vista from the asset is not sufficient to interfere with future studies of this aspect of military history. Architectural and historical values

Visual Receptor	Visual Impact Assessment
	would, on the whole, be preserved, but a low impact magnitude describes the alteration within a significant view.
RSK ID V287 Martello tower no 74 on Seaford Esplanade (LVIA-VP7) Plate 22, Appendix 25.4 15 – 20km study area	Built in 1805-6, and surrounded by a dry brick-built moat, the SM has been encroached upon by coastal erosion. Alterations in the early 20th century included the construction of a residential storey on top and a cafe in the south part of the moat. Constructed for coastal defence, this example is converted into a museum and exhibits a mock cannon on the top. The significance of the heritage asset lies in its architectural design as a functional structure, and its historical value as a defensive requirement of the early C19th. The setting includes the shore and unaltered seascape to the horizon, on which its outlook is focussed, and the area over which it is intentionally dominant to act as a deterrent. The scale of the turbines from this distance would not be such as to dominate the heritage asset. A view south, of the channel is fundamental to how the monument was formerly used. At present, this view is unaltered, thus would be impacted upon through the introduction of the proposed development. However, it is not considered that this alteration would sever this relationship with the seascape, nor interfere significantly with interpretations of the defensive function of the monument. Architectural and historical values would, on the whole, be preserved.
South Downs Way – Scheduled Monuments - Minor significance impacts	
RSK ID V66 Camp near Belle Tout lighthouse, Birling Gap (LVIA VP-1) 15 – 20km study area	Enclosure of uncertain date, possibly defending access to the shore from the cliff edge. Significance lies predominantly in evidential value. Although unproven, the function of the site may have entailed defence from the sea, and as such the setting includes an expanse of otherwise undeveloped seascape to the immediate south. The position would afford a view of the proposed development within the asset's setting, however the oblique angle, distance and relative scale of the proposed development are mitigating factors and a negligible impact is predicted.
RSK ID V50 Firle Beacon round barrow and two adjacent round barrows, West Firle, (LVIA VP-20) Plate 20, Appendix 25.4 >20km study area	Prominent mounded earthworks, containing cremated human remains, situated at the highest landscape location in the locale. Their significance lies primarily in their archaeological value, a visual example of BA mortuary practice, and perspective towards landscapes. It is no longer known where the monuments were intended to be prominent from. It is possible the many barrows in the vicinity were intended to be intervisible. The setting of the features is shared, including (in the immediate landscape) the barrows on the ridge as a group, and also the valley areas from which the earthworks are visible, which would most likely incorporate an area of contemporary settlement/territory. This setting is altered through modern landscape management and farm buildings. The landscape position affords 360 degree vantage views across the landscape. The sea makes up a significant proportion of the views south from Firle beacon, and the proposed development would be prominent in this view. The long-distance views from the monuments are considered a by-product of the location on a ridge (possibly a natural territorial division), and the intention to construct at a high-point, the views of the sea. There is no significant association with the sea.

Visual Receptor	Visual Impact Assessment
	Nevertheless, given the elevated vantage view that the locale imparts over the seascape, the development as proposed is considered to represent a change within the setting of the heritage assets. But in relation to an assessment of the impact to the significance of the assets, the archaeological value, prominence of the earthworks, the dominance of the natural feature on which they are constructed, intended intervisibility, and associations with the surrounding landscape would remain unaffected, and the impact is negligible. Assessment also representative of RSK IDs 28, 29, 30, 34, 36, 51, 52, 53, 77, 116, 122, 140, 147, 148, 149, 150, 151, 152, 166, 172, 178, 190, 196, 221, 222, 223, 224, 225, 226, & 261).
RSK ID V240 Chanctonbury Ring hillfort and Romano-Celtic temples >20km study area	The significance of the heritage asset lies primarily in its archaeological value, as a prominent Iron Age site exhibiting defensive/display qualities, intended dominance over the surrounding landscape, and as a vantage point providing long-distance views over the surrounding landscape. The hillfort was most likely constructed to be visible from the surrounding plains, and this relationship defines its wider setting, albeit substantially altered. Given the elevated vantage point, the development as proposed is considered within the extreme distant setting of the monument. Any intended intervisibility between the hillfort's hinterland and/or contemporary hillforts would remain unaffected. Similarly the immediate prominence of the earthworks would remain unaffected. Whilst the vantage point would afford a view of the proposed development, it is considered that the relevant historical view from this location is with the land- rather than sea-scape. The designation description describes the monument significance and view as follows, "The hillfort and temple, which survive as earthworks and buried remains, enjoy extensive views towards the Channel coast c.8km to the south and the Weald to the north". As views of the seascape are not considered of fundamental significance to the understanding of the monument, the visual change brought about by the development would be negligible. Assessment also representative of RSK IDs 241, 242, 243, 244, 245, 246, & 247.
South Downs (prominent receptors) – Scheduled Monuments - Minor significance impacts	
RSK IDs: V199 Hollingbury Hillfort (LVIA-VP22) V250 Thundersbarrow Hill V269 Cissbury Ring Hillfort V270 Highdown Hill	The significance of each heritage asset lies primarily in its archaeological value as a prominent example Iron Age site exhibiting defensive/display qualities, intended dominance over the surrounding landscape, and as a vantage point providing long-distance views over the surrounding landscape. The hillforts were most likely constructed to be visible from the surrounding plains, and this relationship defines its wider setting, albeit substantially altered. The setting includes an empty expanse of the seascape to the south. Any intended intervisibility between the hillforts' hinterland and/or contemporary hillforts would remain unaffected. Similarly the immediate prominence of the earthworks would remain unaffected. Whilst the vantage point would afford a view of the proposed development, and the development would therefore lie within the setting of the asset, it is considered that the relevant historical view from this location is with the land- rather than sea-scape thus the visual change brought about by the development would be negligible.

Visual Receptor	Visual Impact Assessment
Camp (15 – 20km study area)	
Sea-front properties – Listed Buildings - Moderate significance impacts	
RSK IDs: V318, V357, V391 – 4, V423 – 4, V481, V500, V555, 557 – 8, V562, 567 – 70, V572 – 3, V599 – 600 Plate 23, Appendix 25.4 <15km study area	Structure constructed directly on, and orientated towards the seafront. Significance lies in its architectural value, but the focussed sea-views contribute to the significance of the heritage asset, in that the siting was intentional for this reason, and this setting contributes to the character of the asset. The setting thus includes an expanse of adjacent seascape, currently, and formerly undeveloped (however it is also noted that this view is subject to constant change). The development as proposed would introduce a fundamental element of change within a view that contributes to the way the heritage asset was designed to be used and appreciated. However, it is considered that this change would not sever the intended relationship with the seascape, nor an ability to interpret this intended relationship. Furthermore, it is considered that distance and relative scale are a mitigating factor. Architectural value would be preserved.
Sea-front properties: Kemp Town Enclosures – Listed Buildings - Moderate significance impacts	
RSK IDs: V539, V541, V580 – 82, V602 – 3 Plate 17, Appendix 25.4 <15km study area	Structures constructed on seafront. The elevated principal rooms on the first floor are constructed to overlook the RPG, with the sea as a backdrop. The location and orientation of the formally designed townscape intentionally incorporates the sea view, and as such the southerly view constitutes a key element of its setting. Significance of the group of structures therefore lies partially within its intended relationship with the seascape, and also in their architectural value. There is also an intended, but more immediate relationship with Kemp Town RPG. The development as proposed would introduce a fundamental element of change within a view that contributes to the way the heritage asset was designed to be used and appreciated. However, it is considered that this change would not sever the intended relationship with the seascape, nor an ability to interpret this intended relationship. Intervisibility between designated elements within the shared setting would remain preserved. The intention for the sea to form a backdrop to views from the first floor of the designated structure would remain apparent. Furthermore, it is considered that distance and relative scale are a mitigating factor. Architectural value would be preserved.
Piers – Listed Buildings - Moderate significance impacts	
RSK ID V601 The West Pier Plate 24, Appendix 25.4	Feature is a relic with architectural significance severely compromised. Although the development as proposed would be prominently located within a significant part of the asset's setting, it is not intrusive so as to interfere with the current interpretation of the heritage asset.

Visual Receptor	Visual Impact Assessment
<15km study area	
RSK ID V606 The Palace Pier (LVIA VP-12) Plate 25, Appendix 25.4 <15km study area	Pleasure pier and associated structures. 1891-1901, added to in 1906, 1910-1911 and 1930; restored and added to in c1945, c1973 and since 1984. Significance lies in architectural value. There is a visual relationship between the seascape expanse as far as the horizon which serves to define the setting. Historically and presently, the attraction of the heritage asset is the clear relationship with the sea/seascape setting. Although the development as proposed would be located within the setting of the asset, it is not considered intrusive so as to sever the relationship with the sea, and thus the interpretation of the heritage asset. A visual change would be apparent, however on the whole it is considered that architectural and historical values would remain preserved.
Conservation Areas – Moderate significance impacts	
RSK IDs: V677 Marine Parade & Hinterland, V702 Brunswick Town, V723 Regency Square, V726 Sackville Gardens, Hove <15km study area	CA significance lies in its architectural value. The seaside context contributes to the overall character and appeal of the CA, thus setting includes the adjacent expanse of empty sea as far as the horizon. Many structures fronting the sea are designated and afford direct views out over the seascape. Intended southerly views from the CA that are considered fundamental to its character would be changed, however, the development as proposed is located sufficiently offshore such that its relative scale would not be overbearingly apparent. It would not sever the relationship with the sea, nor interfere substantially with architectural interpretations of individual elements as seaside properties. Architectural value would be preserved.
RSK IDs: V695 Steyne Gardens V718 Pembroke and Princes, Hove <15km study area	CA significance lies in its architectural value. The seaside context contributes to the overall character and appeal of the CA, thus setting includes the adjacent expanse of empty sea as far as the horizon. The CA comprises built elements and open space, both of which contain orientated designed elements that include the sea as a backdrop, and within which sightlines are aligned with the proposed development. Intended southerly views from the CA that are considered fundamental to its character would be changed, however, the development as proposed is located sufficiently offshore such that its relative scale would not be overbearingly apparent. It would not sever the CA's intended relationship with the sea. Architectural value would be preserved.
RSK ID V696 South Street <15km study area	CA significance lies in its architectural value. Inclusion of the pier in the designation clearly contributes to the overall character and appeal of the CA, thus setting includes the adjacent expanse of empty sea as far as the horizon. The pier provides views out to, and a relationship with the sea that is considered fundamental to the significance of the monument and the CA as a whole. The proposed development would not substantially interfere with this relationship, and the development as proposed is located sufficiently offshore such that its relative scale would not be overbearingly apparent. It would not sever the CA's intended relationship with the sea. Architectural value would be preserved.

Visual Receptor	Visual Impact Assessment
RSK ID V711 Kemp Town <15km study area	CA significance lies in its architectural and artistic values. The seaside context contributes to the overall character and appeal of the CA. The location and orientation of the formal townscape was intentionally designed to embrace the sea view, and as such the southerly view constitutes a key element of its setting and significance. Many structures fronting the sea are designated and afford direct views out over the seascape. Intended southerly views from the CA that are considered fundamental to its character would be changed, however, the development as proposed is located sufficiently offshore such that its relative scale would not be overbearingly apparent. It would not sever the relationship with the sea, nor interfere substantially with architectural interpretations of individual elements as seaside properties. Architectural and artistic values would be preserved.

Decommissioning

Substation

25.7.49 Upon decommissioning, no impacts on the setting or visual context of heritage assets are predicted.

Offshore Wind Farm

25.7.50 Forty two moderate significance visual impacts and 49 minor significance visual impacts to designated heritage assets are predicted as a result of the operational phase of the offshore wind farm. Upon decommissioning any visibility/impacts would be fully reversed.

25.8 Further Assessment and Mitigation Measures

Prior to Construction

Scheduled Monument Consent

25.8.1 Every effort has been made to limit impact on the SM, Tottington Mount Cross Dyke (RSK ID 99). The impact will be justified by the retrieval and dissemination of archaeological data, which would increase understanding of an otherwise poorly researched class of monument. The impact to the Scheduled Monument RSK ID 99 will be mitigated through a methodology agreed with EH.

25.8.2 A WSI will be submitted should consent for the Project be granted, and will include provision for advance excavation, recording, palaeoenvironmental sampling and analysis and, where possible, scientific dating.

Trial Trenching

25.8.3 In line with current best practice further information will be obtained for known sites where an archaeological impact is probable or possible, including areas of archaeological potential where no archaeological sites are currently recorded. The assessment strategy proposed will be undertaken primarily by archaeological trial trenching.

25.8.4 Trial trenches will generally be machine excavated under archaeological supervision to the top of archaeological horizons or natural subsoil, whichever is encountered first. They will subsequently be cleaned and investigated by hand. The trench dimensions will vary according to location and target but generally are expected to be 20m x 1.8m in area and up to 1.2m in depth.

25.8.5 The location of the trial trenches will be determined on a targeted basis, using data from the DBA, FRS, geoarchaeological assessment and geophysical survey to locate trenches to areas of known or potential archaeological interest. This scope of the trial trenching will be limited to investigating areas of greatest archaeological interest, in order to determine appropriate mitigation strategies

prior to construction. A minimum period of three months prior to construction for the completion of the trial trenching programme is recommended.

25.8.6 The trial trenching strategy and methodology will be determined in consultation with the archaeological curators and subject to a written scheme of investigation (WSI). A suitable programme of post excavation assessment and publication will be agreed with relevant authorities.

Earthwork Survey

25.8.7 Where heritage assets are preserved as surface earthworks, advance topographical survey will record the profile for reinstatement purposes following construction.

Geoarchaeological/palaeoenvironmental Assessment

25.8.8 In terms of further assessment and mitigation, indicative methodological approaches are identified for potential archaeological remains or deposits rich in palaeoenvironmental potential in each of the cable route's 55 zones in the geoarchaeological assessment (Appendix 25.5).

25.8.9 A watching brief over site investigation groundworks provides an advance opportunity to record archaeological data in order to provide a basis for the determination of further stages of archaeological investigation and mitigation.

25.8.10 Large areas of surface geology mapped as essential solid would be subject to an initial walk over survey to identify structural surface features such as solution hollows and fissures.

25.8.11 Should fine-grained archaeology or sites be encountered through suggested surveys, mitigation through excavation or, in the case of exceptional archaeology, preservation in situ will be developed in agreement with the relevant authorities.

During Construction

Mitigation Options

25.8.12 The information obtained from surveys and assessments will be used to define site-specific and, where appropriate, area-specific mitigation strategies. The following generic principles are generally adopted as appropriate mitigation in the case of physical impacts on heritage assets:

- Preservation *in situ*: the preservation in situ of sensitive archaeological remains can be achieved through changes at the design stage or localised variations to the construction methodology during the construction stage to avoid areas of high archaeological sensitivity, by reducing the working width, laying geotextile matting or bog mats and/or careful reinstatement procedures; and/or

- Preservation by record: where preservation in situ is not feasible or desirable, an alternative mitigation is to preserve the information though archaeological excavation and recording. This may be undertaken either pre-construction as detailed work or as part of a watching brief.

25.8.13 A documentary record is not as valuable as retaining a heritage asset, whether it is designated, or of equivalent significance, or not. In the event that buried archaeological remains are found that are not of equivalent significance to a scheduled monument, preservation in situ would still be considered a preferable mitigation approach, and will thus be implemented where warranted and achievable.

25.8.14 A generic WSI for excavation will be prepared that would identify the site-specific mitigation proposals, taking account of all of the survey information available to help determine the appropriate proposal for mitigation. This document will be developed in consultation with the archaeological curators and will include adequate provision for post excavation assessment, analysis and publication of results.

Excavation

25.8.15 Full archaeological advance-excavation will be undertaken following topsoil stripping scheduled in the groundworks methodology of the construction programme, and in advance of further groundworks such as cable trenching. This advance excavation will only occur at known heritage assets identified through DBA and/or trial trenching, agreed in advance through consultation and according to a previously agreed WSI.

Controlled Strip

25.8.16 Controlled topsoil strip will be undertaken where archaeological potential has been identified. Main works-scheduled top/subsoil stripping activities in areas of archaeological potential, to be agreed through consultation, will be archaeologically led, according to a pre-approved WSI.

Watching Brief

25.8.17 An archaeological watching brief will be undertaken during construction on groundworks, which would be confirmed through consultation. This is to safeguard against the potential for identifying previously unrecorded archaeological remains within the areas of groundworks necessary for the onshore cable route, substation and landfall. An appropriately qualified archaeologist, in accordance with a WSI that has been approved by relevant authorities, would undertake the watching brief.

Field Boundary Recording

25.8.18 Archaeological mitigation will be developed and agreed to address impacts on historic field boundaries at road and field boundary crossings, and palaeoenvironmental potential at stream crossings. During the watching brief phase, break-through crews will be accompanied by a monitoring archaeologist. Specific aims of the watching archaeologist are to observe and record any historic re-defining of field boundaries (earlier walls overlain and obscured by hedges, or re-cut ditches for example), buried land surfaces, and the collection of dating evidence from ditches. Sketched profiles will include dimensions and notes will be taken on both the below and above ground components of all boundaries.

25.8.19 Suitable analysis of the body of data generated will be agreed with relevant authorities during the project post-excavation assessment stage, with the aim to categorise each boundary into relative importance and, if possible, date.

Geoarchaeological/palaeoenvironmental Assessment

25.8.20 Where pre-construction field-surveys have not gathered sufficient data to fully archaeologically mitigate any construction-phase works, consultee-agreed GSC zones, pre-defined based on geoarchaeological/palaeoenvironmental desk-based and field assessments will be subject to a watching brief during construction. An appropriately qualified archaeologist, in accordance with a WSI that has been approved by the relevant authorities, will undertake the watching brief.

During Operation

25.8.21 In this case, no potential for significant impacts or substantial harmful effects on known heritage receptors has been identified, and no further assessment or mitigation is required.

During Decommissioning

25.8.22 There are no predicted impacts on terrestrial heritage assets during decommissioning, therefore no further assessment or mitigation is required.

25.9 Significance of Residual Effects

During Construction

25.9.1 Subject to the implementation of the mitigation measures outlined above, and the completion of an appropriate programme of post excavation assessment and publication, the assessment predicts there would be no residual physical impacts on any archaeological or cultural heritage assets (see Table 25.14).

During Operation

25.9.2 There are predicted residual visual effects on 91 designated onshore heritage assets during operation.

During Decommissioning

25.9.3 There are no predicted residual effects on onshore heritage assets during/following decommissioning.

25.10 Cumulative

25.10.1 The cumulative direct impacts of other developments would be no greater than that of each individual development on the archaeological resource. Following the implementation of appropriate mitigation in the case of each development, there would be a neutral cumulative impact on the archaeological resource within the cable route study area.

Table 25.14: Summary of Impacts, Mitigation and Significance of Residual Effects

Aspect	Effect	Proposed Mitigation Measures	Sensitivity	Magnitude	Residual Effect
Construction Phase					
Designated heritage assets	Significant direct physical impact to RSK ID 99, Cross Dyke on Tottington Mount	Preservation by record - advance excavation/research as per Scheduled Monument Consent	High	Medium	None
Non-designated heritage assets	Non-significant direct physical impacts to numerous known heritage assets	Preservation in situ – avoidance through design where possible Preservation by record – advance excavation	Very Low/Low/ Medium/Uncertain	None/Negligible/ Low/Medium/High	None
Historic landscapes/ unknown heritage assets	Uncertain direct physical impacts to heritage assets discovered during construction	Archaeological 'controlled strip' Archaeological watching brief Preservation in situ – avoidance through design where possible Preservation by record – advance excavation	Uncertain	Uncertain	None
Geoarchaeological/ palaeoenvironmental potential	Uncertain direct physical impacts to deposits of geoarchaeological and palaeoenvironmental potential during	Preservation in situ – avoidance through design where possible Preservation by record – advance excavation	Uncertain	Uncertain	None

Aspect	Effect	Proposed Mitigation Measures	Sensitivity	Magnitude	Residual Effect
	construction				
'Important' field boundaries	Non-significant direct physical impacts to Parish boundaries	Preservation in situ – avoidance through design where possible Preservation by record – advance excavation	Uncertain	Uncertain	None
Operational Phase					
Designated heritage assets	No visual/indirect effects identified through substation.	None proposed	High	None	None
Designated heritage assets	Non-significant visual effects to 91 designated heritage assets	None proposed	High	Minor - Moderate	Minor - Moderate
Decommissioning Phase					
All terrestrial heritage assets	Following implementation mitigation, there would be no residual impacts on any archaeological or cultural heritage receptors.	None proposed	Very Low/Low/ Medium/High	None	None

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