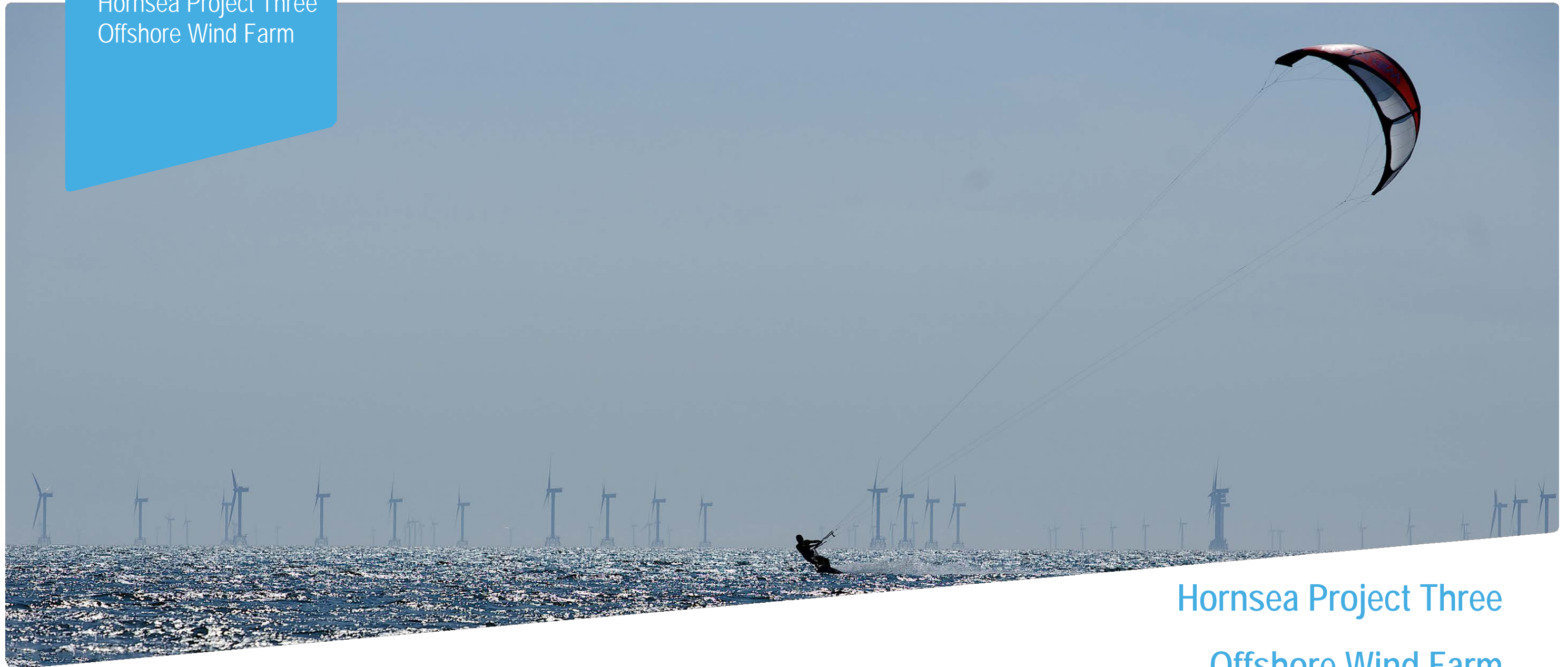


Hornsea Project Three  
Offshore Wind Farm



## Hornsea Project Three Offshore Wind Farm

Preliminary Environmental Information Report:  
Annex 1.1 – Hornsea Project One and Hornsea Project Two Consultation of Relevance to Hornsea Three

Date: July 2017

Environmental Impact Assessment

Preliminary Environmental Information Report

Volume 4

Annex 1.1 – Hornsea Project One and Hornsea Project Two Consultation of Relevance to Hornsea Three

**Liability**

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

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This report is also downloadable from the Hornsea Project Three offshore wind farm website at:

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

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## Acronyms

Acronym	Description
AEZ	Archaeological Exclusion Zone
BDMPS	Biologically Defined Minimum Population Scale
C.M.E	Cooperative Maritime Etaploise
CA	Cruising Association
CEA	Cumulative Effect Assessment
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CoS	Chamber of Shipping
CPA	Closest Point of Approach
CRM	Collision Risk Modelling
cSAC	Candidate Special Area of Conservation
DCF	Data Collection Framework
EEFPO	Eastern England Fish Producers Organisation
EIA	Environmental Impact Assessment
EMF	Electromagnetic Fields
EPS	European Protected Species
ERCoP	Emergency Response and Cooperation Plan
EWG	Expert Working Group
FSA	Formal Safety Assessment
HMR	Helicopter Main Route
HRA	Habitats Regulation Assessment
HSC	Historic Seascape Character
ICES	International Council for the Exploration of the Seas
IFCA	Inshore Fisheries and Conservation Authority
IMO	International Maritime Organisation
IPC	Infrastructure Planning Commission
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
MCA	Maritime Coastguard Agency

Acronym	Description
MCZ	Marine Conservation Zone
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMMP	Marine Mammal Monitoring Plan
MMO	Marine Management Organisation
MU	Management Unit
NFFO	National Federation of Fishermen's Organisations
NHV	Noordzee Helikopters Vlaanderen
NOAA	National Oceanic and Atmospheric Administration
NRA	Navigational Risk Assessment
NSPP	North Sea Palaeolandscapes Project
ORJIP	Offshore Renewables Joint Industry Project
OSPAR	The Convention for the Protection of the Marine Environment of the North-East Atlantic
PCH	Percentage of birds at Collision Height
PCM	Post-construction monitoring
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PO	Producers Organisation
RAC	Regional Advisory Council
REWS	Radar Early Warning System
RYA	Royal Yachting Association
SAC	Special Area of Conservation
SAR	Search and Rescue
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
SSC	Suspended Sediment Concentration
TH	Trinity House
TWT	The Wildlife Trust
UKC	Under Keel Clearance

Acronym	Description
VFR	Visual Flight Rules
VMS	Vessel Monitoring System
WFD	Water Framework Directive
WSI	Written Scheme of Investigation

## Units

Unit	Description
km	kilometre
m	metre
nm	nautical mile

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## 1. Hornsea Project One and Hornsea Project Consultation

### 1.1 Offshore consultation

1.1.1.1 The Hornsea Three array area lies to the east of Hornsea Project One and Hornsea Project Two offshore wind farms (Figure 1.1). The proposed Hornsea Three array area has similarities, both in terms of the nature of the development and its location to Hornsea Project One and Hornsea Project Two array areas. As such, where matters have been raised during consultation on Hornsea Project One and Hornsea Project Two, and are relevant to the Hornsea Three Environmental Impact Assessment (EIA), they have been considered within the Hornsea Three Preliminary Environmental Information Report (PEIR) where appropriate. A summary of the matters raised according to each offshore PEIR topic, together with how they have been considered in Hornsea Three, are set out in Table 1.1 below.

### 1.2 Onshore consultation

1.2.1.1 From the Norfolk coast, underground onshore cables will connect the offshore wind farm to an onshore HVDC converter/HVAC substation, which will in turn, connect to an existing National Grid substation. Hornsea Three will connect to the Norwich Main National Grid substation, located to the south of Norwich. Hornsea Three has a different onshore and offshore cable corridor, as well as grid connection, to Hornsea Project One and Hornsea Project Two (see Figure 1.1). As such, the matters raised during Hornsea Project One and Hornsea Project Two consultation are not necessarily applicable to Hornsea Three and as such, have not been summarised within this annex.

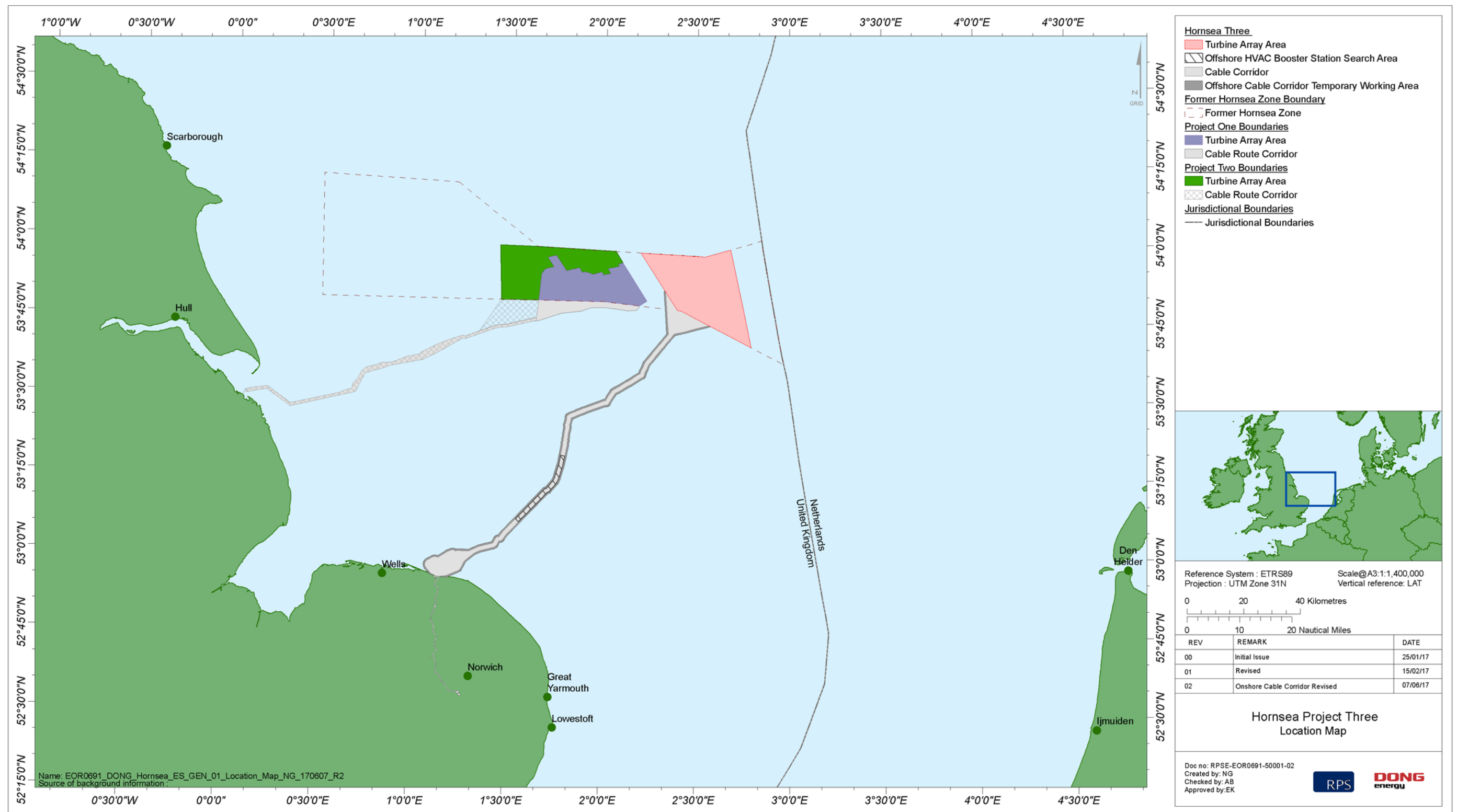


Figure 1.1: Location of the proposed Hornsea Three offshore wind farm project within the former Hornsea Zone.

Table 1.1: Summary of key consultation issues raised during consultation activities undertaken for Hornsea Project One and Hornsea Project Two.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
<i>Marine processes</i>				
December 2010 November 2012	Joint Nature Conservation Committee (JNCC), Natural England, Environment Agency, Marine Management Organisation (MMO) and Centre for Environment, Fisheries and Aquaculture Science (Cefas)	Hornsea Project One and Hornsea Project Two	Potential impacts of cable installation and potential for scour protection and rock armouring to interrupt sediment transport (bedload) along the cable route corridor.	A quantitative assessment of changes in suspended sediment concentration (SSC) and bed levels has been completed, as presented in volume 2, chapter 1: Marine Processes, section 1.11.2. Potential changes to sediment transport pathways due to cable protection measures are considered in volume 2, chapter 1: Marine Processes, section 1.11.9.
December 2010 November 2012	JNCC, Natural England and MMO	Hornsea Project One and Hornsea Project Two	Potential for Hornsea Project One and Hornsea Project Two in combination to affect marine processes, in particular wave height at the coastline, and for associated changes to the sediment transport regime to impact on the coast.	The cumulative effects of Hornsea Project One, Hornsea Project Two and Hornsea Three are considered in volume 2, chapter 1: Marine Processes, section 1.13.6.
March 2013	JNCC, Natural England and MMO	Hornsea Project One	Changes to waves associated with Hornsea Project One may impact on offshore sandbanks.	This potential effect is considered in volume 2, chapter 1: Marine Processes, section 1.11.6 and in volume 5, annex 1.1: Marine Processes Technical Annex, section 8.
December 2010 May 2012	Infrastructure Planning Commission (IPC) (now the Planning Inspectorate (PINS))	Hornsea Project One	Potential to suspend and transport potentially contaminating materials	A quantitative assessment of changes in SSC and bed levels in response to construction related activities has been completed in volume 2, chapter 1: Marine Processes, section 1.11.2. Contaminated sediments are assessed in chapter 2 Benthic Ecology.
December 2010	JNCC and Natural England	Hornsea Project One	Potential impacts on the hydrodynamic regime resulting from the installation of turbines.	This potential effect is considered in volume 2, chapter 1: Marine Processes, section 1.11.6. An assessment of hydrodynamics has been completed to consider changes to the flow regime and is presented in volume 5, annex 1.1: Marine Processes Technical Annex, section 7.
May 2012	PINS	Hornsea Project One	Cumulative impacts associated with dredging activities in proximity to the proposed development.	The potential for cumulative changes to marine processes associated with aggregate dredging activities are considered in volume 2, chapter 1: Marine Processes, section 1.13.2.
September 2012	JNCC and Natural England	Hornsea Project One	Details should be provided in relation to: the requirements for excavation of gravity base foundation; the disposal of excavated materials; the material used for infilling; and the potential implications of this in relation to associated increases in SSC, scour and scour protection requirements.	Details of the installation of gravity base foundations are provided in volume 1, chapter 3: Project Description. The influence of gravity base foundation installation on SSC are described in volume 2, chapter 1: Marine Processes, section 1.11.2. A full scour assessment is presented in volume 5, annex 1.1: Marine Processes Technical Annex, section 11. Results are summarised in volume 2, chapter 1: Marine Processes, section 1.11.3.
September 2012	JNCC and Natural England	Hornsea Project One	Noted that whilst gravity base foundations are considered the worst case for suspended sediment due to the degree of bed preparation, drilling for monopiles or steel jackets will generate material from greater depth which may have different sediment quality and should be considered.	The influence of gravity base foundation bed preparation activities, as well as drilling of monopile and jacket foundations on SSC have all been assessed, as presented in volume 2, chapter 1: Marine Processes, section 1.11.2.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
September 2012	MMO and Cefas	Hornsea Project One	Requested the provision of validation assessments for model performance of the flow model (TELEMAC-2D), together with any similar assessments carried out for the SWAN modelling.	The Hornsea Three assessment draws upon the numerical modelling carried out for Hornsea Project One and Hornsea Project Two. Validation assessments for the flow and wave modelling carried out to support the Hornsea Project One and Hornsea Project Two assessments are contained within volume 5, annex 1.1: Marine Processes Technical Annex, section 7 and 8.
September 2012 November 2012	MMO, Cefas and Environment Agency	Hornsea Project One and Hornsea Project Two	Potential changes (immediate or long-term, direct or indirect) on the intertidal area resulting from infrastructure in the landfall area, including potential impacts on tidal defences.	Effects of the cable installation in the Hornsea Three landfall area are presented in volume 2, chapter 1: Marine Processes, section 1.11.5. Effects of the operational presence of the cable (and cable protection measures) in the Hornsea Three landfall area are presented in volume 2, chapter 1: Marine Processes, section 1.11.9.
March 2013	MMO, JNCC and Natural England	Hornsea Project One	The clearance of sandwaves associated with cable burial activities may affect the wave regime with associated impacts at the coast	The potential for sandwave clearance to influence the wave regime is considered within volume 5, annex 1.1: Marine Processes Technical Annex, section 4.
July 2014	Natural England	Hornsea Project Two	Cable burial depth in the intertidal area should be future proofed in terms of climate change.	A full cable burial risk assessment will be undertaken post consent and pre construction to ensure appropriate levels of conservatism are factored into the cable installation plan. A cable landfall assessment is also presented in volume 5, annex 1.1: Marine Processes Technical Annex, section 6. This assessment considers the nature of ongoing shoreline change at the landfall and the potential for cables and other project infrastructure to impact coastal processes.
July 2014	Natural England	Hornsea Project Two	Justification is sought as to why any cable protection will be left in-situ following de-commissioning.	Cable protection may be removed or left in-situ. A Decommissioning Programme will be produced and no decommissioning activities shall commence until plans for the carrying out of such activities have been approved. Potential effects associated with decommissioning activities at the Hornsea Three landfall area are presented in volume 2, chapter 1: Marine Processes, section 1.11.10.
<b><i>Benthic Subtidal and Intertidal Ecology</i></b>				
December 2010	PINS	Hornsea Project One	EIA should address: effects of total seabed loss; introduction of hard substrate; seabed disturbance; increased suspended sediments and smothering; accidental release of contaminants; and operation and maintenance of the development.	These impacts are summarised in volume 2, chapter 2: Benthic Subtidal and Intertidal Ecology, Table 2.14 and assessed in section 2.11.
July 2012	MMO	Hornsea Project One	Consideration of the potential Annex I Sabellaria reefs within the offshore cable corridor is required.	Annex I habitats in the Hornsea Three benthic ecology study area are described in volume 2, chapter 2: Benthic Subtidal and Intertidal Ecology, section 2.7.1.
July 2012	MMO and Cefas	Hornsea Project One	Recommendation to use only one biotope classification system. Limitations of using biotopes must also be recognised.	One biotope system has been used. Biotopes are summarised in volume 2, chapter 2: Benthic Subtidal and Intertidal Ecology, Table 2.10 and Table 2.11.
November 2012	PINS	Hornsea Project Two	Consideration should be given to the total loss of seabed area resulting from the construction of the wind farm array and associated cabling.	Total maximum temporary and long term habitat losses resulting from wind farm construction are detailed in volume 2, chapter 2: Benthic Subtidal and Intertidal Ecology, Table 2.14 and discussed in section 2.11.2.
November 2012	Environment Agency	Hornsea Project Two	Consideration of Water Framework Directive (WFD) biological quality elements (including benthic invertebrates) and predictions of changes in Ecological Status should be made.	Consideration of the WFD is provided in chapter 5, annex 2.2: Water Framework Directive Assessment.
July 2014	Natural England	Hornsea Project Two	Concerns relating to the consideration of habitat loss under foundation structures and associated scour as long term but temporary.	All habitat loss under foundations, scour protection and cable protection has been considered as long term and not temporary (see volume 2, chapter 2: Benthic Subtidal and Intertidal Ecology, section 2.11.2).



Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
July 2014	Lincolnshire Wildlife Trust and Yorkshire Wildlife trust	Hornsea Project Two	Expect that if Annex 1 habitat is found within the offshore cable corridor that suitable measures are taken to avoid them.	Designed in measures are set out in volume 2, chapter 2: Benthic Subtidal and Intertidal Ecology, Table 2.18.
<b>Fish and Shellfish Ecology</b>				
December 2010	IPC (now PINS)	Hornsea Project One	EIA should address the maximum design scenario for decommissioning, effects of underwater noise and vibration on spawning grounds and effects of EMF on fish and shellfish.	These impacts are assessed throughout volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11, with maximum design scenarios for these impacts presented in Table 3.12.
March 2013	Lincolnshire Wildlife Trust and Yorkshire Wildlife Trust		Assessment of the beneficial impacts of reef effects from foundations.	The effects of habitat creation in terms of reef building and introduced hard substrate are presented in volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11 and section 3.13.
March 2013	MMO and Cefas		Raised concerns with respect to the effects of underwater noise and vibration on herring spawning grounds, effects of EMF on migratory fish species, habitat modification including artificial reef effects, impacts on shellfish (suspended sediments and habitat loss) and consideration of fish as prey species, particularly sandeel species.	These impacts are assessed throughout volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11.1 for construction related impacts and section 3.11.2 for impacts during the operational phase.
March 2013	JNCC and Natural England		Comments on EMF effects on migratory fish species and cable burial, queries on cable protection and maintenance during the operational phase, potential impacts of piling on early life stages and cumulative effects (beneficial and adverse) of subsea structures acting as fish aggregating devices.	These impacts are assessed throughout volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11.1 for construction related impacts and section 3.11.2 for impacts during the operational phase. The cumulative effects assessment includes consideration of introduction of hard substrates to the marine environment (volume 2, chapter 3: Fish and Shellfish Ecology, section 3.13 and Table 3.22).
July 2012	MMO and Cefas	Hornsea Project Two	Agreement in principle on the data acquisition strategy, comments on monitoring strategy for Hornsea Project Two and consideration of commercial fisheries in fish and shellfish ecology Environmental Statement chapter.	Potential monitoring requirements are considered based on the outcome of the impact assessments assessed throughout volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11. Commercial fisheries information is considered in the baseline characterisation (volume 5, annex 3.1: Fish and Shellfish Technical Report).
November 2012	MMO and Cefas		EIA should address impacts on shellfisheries, sandeel habitats, noise impacts on herring spawning and early life stage fish and shellfish and impacts on The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Threatened and Declining Species.	These impacts are assessed throughout volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11.1 for construction related impacts and section 3.11.2 for impacts during the operational phase.
November 2012	PINS		Reference to comments from MMO, on species to be considered in EIA, and comments from JNCC/Natural England on species of conservation importance and valuation of fish and shellfish receptors.	MMO, Natural England and JNCC have been consulted throughout the Evidence Plan process (see volume 2, chapter 3: Fish and Shellfish Ecology, section 3.5.1 and DONG Energy, 2017a).
November 2012	JNCC and Natural England		Importance of fish and shellfish as prey for breeding seabird populations should be addressed further.	Importance of fish and shellfish receptors as prey species has been considered in valuation of receptors (see volume 5, annex 3.1: Fish and Shellfish Technical Report) and throughout the assessment of impacts (volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11).
July 2014	Lincolnshire Wildlife Trust and Yorkshire Wildlife Trust		Discussion of potential positive effects of fisheries exclusion on fish and shellfish ecology.	Effects of potentially reduced fishing pressure within Hornsea Three array area on fish communities have been discussed in volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11.2.
July 2014	MMO and Cefas		Comments on herring and sandeel resource assessment to be carried out according to published methodologies, the reporting of historic herring spawning grounds and comments on monitoring for sandeel and herring habitat.	These analyses have been undertaken and are fully presented in volume 5, annex 3.1: Fish and Shellfish Technical Report. Potential monitoring requirements are considered based on the impact assessments assessed throughout volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
			Limitations of data, including ability of otter and beam trawls to collect sandeel.	Limitations of the baseline data, including survey data, are discussed in volume 2, chapter 3: Fish and Shellfish Ecology, section 3.7.8 and volume 5, annex 3.1: Fish and Shellfish Technical Report.
July 2014	Natural England		Concerns with respect to noise contours presented in Hornsea Project Two assessment and potential redistribution of fish within a relatively large area.	Full assessment of noise impacts is presented in volume 2, chapter 3: Fish and Shellfish Ecology, section 3.11.1 and section 3.13.2.
<b>Marine Mammals</b>				
March 2013	JNCC and Natural England	Hornsea Project One	Presentation of a most likely scenario would be useful to put the worst case into context.	Assessment for Hornsea Three includes a range of scenarios, refined throughout the EIA process and in consultation with the Marine Mammal Expert Working Group (EWG), that would help explore potential effects (volume 2, chapter 4: Marine Mammals, section 4.11). Where possible, the assessment in the Environmental Statement will present additional information that will provide a more realistic context to help understand that the impacts assessed for the maximum design scenario are very precautionary.
March 2013	Rijkswaterstaat North Sea (Ministry of Infrastructure and Environment)	Hornsea Project One	Consideration of proposed Natura 2000 sites and other areas of ecological importance for transboundary impacts.	Marine mammal features have been described for Natura 2000 sites scoped into the Hornsea Three assessment (see volume 2, chapter 4: Marine Mammals, section 4.7) and impacts have been assessed within the Draft Report to Inform the Appropriate Assessment for Hornsea Three (DONG Energy, 2017b)
November 2012	PINS	Hornsea Project Two	Information should be provided within the Environmental Statement which will assist the decision maker to meet the duty of engaging with the Habitats Directive when licensing this activity. Appropriate requirements to secure necessary mitigation should be agreed with Natural England / the MMO.	European Sites designated under the Habitats Directive and marine mammal features of these sites have been described within this PEIR (see volume 2, chapter 4: Marine Mammals, section 4.7). These sites have been considered within the Draft Report to Inform the Appropriate Assessment for Hornsea Three (DONG Energy, 2017b). Appropriate mitigation will be discussed and agreed with the Marine Mammal EWG.
November 2012	PINS	Hornsea Project Two	Potential risk to European Protected Species (EPS) should be set out in full.	A draft EPS licence application will be submitted alongside the Environmental Statement for Hornsea Three, in accordance with the latest guidance from the MMO. Volume 2, chapter 4: Marine Mammals, section 4.6.4 discusses the legislation in respect of EPS.
November 2012/ April 2015	PINS and Natural England	Hornsea Project Two	Consideration of potential for vessels using ducted propellers to cause corkscrew injury to harbour seal using the offshore cable corridor and mitigation measures required.	Hornsea Three will follow best practice guidelines, the detail of which will be discussed and agreed with the Marine Mammal EWG (see volume 2, chapter 4: Marine Mammals, section 4.10). The most recent advice from Statutory Nature Conservation Bodies (SNCBs) (February 2015) suggests that mitigation and monitoring may not be required as recent scientific evidence suggests that predation by grey seal is a primary cause of corkscrew injury.
April 2015	Natural England	Hornsea Project Two	Possible designation of a Special Area of Conservation (SAC) for harbour porpoise and implications for the Hornsea Project Two EIA and Habitats Regulation Assessment (HRA).	Volume 2, chapter 4: Marine Mammals, section 4.6.2 considers the southern North Sea candidate SAC (cSAC) for harbour porpoise. Consideration of the impact of Hornsea Three on this cSAC has been addressed in the Draft Report to Inform the Appropriate Assessment for Hornsea Three (DONG Energy, 2017b).
April 2015	Natural England	Hornsea Project Two	Consideration of piling noise from projects piling at the same time as Hornsea Project Two.	The cumulative impacts from subsea noise have been assessed using the maximum design scenarios for each project and with appropriate context so that the effects are not overestimated (volume 2, chapter 4: Marine Mammals, section 4.13).
April 2015	Natural England	Hornsea Project Two	Effects of vessel disturbance should be considered and possible tipping points.	This issue has specifically been discussed with the Marine Mammal EWG for Hornsea Three with reference to the study by Pirota <i>et al.</i> (2015) and agreed that a more refined approach should be taken to try to quantify increase in vessel disturbance (volume 2, chapter 4: Marine Mammals, section 4.11).

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
April 2015	Natural England	Hornsea Project Two	Use of noise reduction at source techniques and application to mitigation.	For Hornsea Three, mitigation for injury has been discussed in brief during the Marine Mammal EWG meeting (on 28 March 2017) with the intention to discuss in more detail with SNCBs at post-consent (within the Marine Mammal Monitoring Plan (MMMP)) once project parameters have been refined (see proposed mitigation within volume 2, chapter 4: Marine Mammals, section 4.11).
April 2015	Natural England	Hornsea Project Two	Entanglement with anchored monopiles.	A literature review was undertaken to provide additional information to assess this impact based on studies by Benjamins <i>et al.</i> (2014) and Harnois <i>et al.</i> (2015). The impact is considered to be of low risk to marine mammals and therefore has been scoped out of further assessment.
April 2015	Natural England	Hornsea Project Two	Cumulative assessment should take account of other activities including seismic surveys, gas fields and Dutch military activities.	This issue, specifically Dutch military activities, was discussed with the Marine Mammal EWG, highlighting that the effects related to injury rather than behaviour. Since injury will be mitigated there was not considered to be the potential for cumulative effects. However, Natural England requested that information on potential subsea noise should be included in the CEA to demonstrate the range of introduced noise that could occur. Cumulative effects of subsea noise, where information on other projects/plans is available are presented in volume 2, chapter 4: Marine Mammals, section 4.13.1). Due to uncertainty as to when seismic surveys will take place, the nature of the equipment to be used, and new guidance on the use of multi-beam in shallower water (JNCC, 2017), seismic surveys have not been considered within the CEA.
July 2014	The Wildlife Trusts (TWT)	Hornsea Project Two	Query over adequacy of survey methodologies and extent of marine mammal study area. TWT questioned why aerial surveys were not used in the assessment.	For Hornsea Three, the survey method (volume 2, chapter 4: Marine Mammals, section 4.6.5) and study area (volume 2, chapter 4: Marine Mammals, section 4.3) was consulted on and agreed with the Marine Mammal EWG. Aerial surveys were included for Hornsea Three to inform the baseline; particularly with respect to harbour porpoise (volume 2, chapter 4: Marine Mammals, Table 4.7).
July 2014	TWT and Whale and Dolphin Conservation (WDC)	Hornsea Project Two	The study area for the CEA should include the whole North Sea e.g. for harbour porpoise, and not be limited to the southern North Sea (i.e. SCANS block U).	For Hornsea Three the cumulative study area was discussed with the Marine Mammal EWG and was agreed, for each species, to be the same area as proposed for the reference populations within the Management Units (MUs) (volume 2, chapter 4: Marine Mammals, section 4.7.1).
July 2015	WDC	Hornsea Project Two	Concern over use of Southall <i>et al.</i> (2007) noise thresholds in the assessment.	For Hornsea Three the subsea noise approach was agreed with the Marine Mammal EWG and was also reviewed by acousticians at Cefas. At the time of drafting the PEIR, no formal response had been received from Cefas via the MMO. The National Oceanic and Atmospheric Administration (NOAA) thresholds (NMFS, 2016) were applied to the assessment for injury whilst Southall <i>et al.</i> (2007) guidelines were applied in respect of behavioural disturbance (see volume 2, chapter 4: Marine Mammals, section 4.11.1).

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
<i>Offshore Ornithology</i>				
October 2013 (Hornsea Project One) and April 2015 (Hornsea Project Two)	JNCC and Natural England	Hornsea Project One and Hornsea Project Two	<p>During Hornsea Project One, JNCC and Natural England recommend the use of the 'Basic' Band model (Options 1 or 2), not the 'Extended' Band Model (Options 3 and 4). This current advice is based on reservations regarding some of the assumptions underpinning these options, and in particular stems from the uncertainty around the appropriateness of applying Avoidance Rates derived using the 'Basic' Band model to the 'Extended' Band model.</p> <p>During Hornsea Project Two, Natural England did not support the use of Option 4 of the Band Model for undertaking assessment of the risk of collision. Natural England acknowledged that the Extended Band Model (option 3 and 4) is a more refined mathematical model that considers the effect of flight height distribution of birds within the rotor swept area on the probability of collision, there are key methodological issues that need to be resolved in order to validate outputs from Extended Band Model. Natural England advised that the Basic Band Model (Band 2012) is used to estimate collision risks, using either Option 1 or Option 2 depending on the availability and suitability of site specific data. Natural England advise the presentation of both Option 2 and Option 1 outputs for several species due to uncertainties in the site specific flight height data.</p>	<p>Collision risk outputs using those Band (2012) model options as appropriate for the data available, and a range of avoidance rates will be presented in volume 5, annex 5.3: Collision Risk Modelling. Moreover, the update to the Band collision risk model by Masden (2015) will be used where possible. The model update allows for a better understanding of the uncertainty associated with the predicted collision impact of a wind farm development and provides confidence limits, which previously has been absent.</p> <p>When using the Band (2012) model, the PEIR will focus on 'Basic' model Option 1 and 'Extended' model Option 3, making use of the generic flight height information data (from Johnston <i>et al.</i>, 2014). The Applicant understands Natural England's position regarding the Extended Band model but believes the Extended model with site specific flight height data is the most accurate predictor of likely collision rates currently available and therefore provides the most robust impact assessment. However, the aerial survey programme for Hornsea Three is not yet complete with only data from April 2016 to February 2017 currently incorporated into the analyses presented in volume 5, annex 5.3: Collision Risk Modelling and used in the current assessment. As such, the baseline characterisation for the site is only partially complete. This has implications for the calculation of the proportion of birds at rotor height at Hornsea Three, not least a limited flight height dataset. Therefore at this stage only generic flight height information (from Johnston <i>et al.</i>, 2014) has been used to calculate collision risk estimates. Cook <i>et al.</i> (2014) provides the most contemporary published information on avoidance rates that can inform the collision assessment. The avoidance rates recommended by Cook <i>et al.</i> (2014) are applied within the current assessment where applicable and note any minor variations, where identified, by the joint SNCB response.</p> <p>There is no awareness of any specific updates ongoing to the Cook <i>et al.</i> (2014) work with respect to application to the Extended Model. Ongoing empirical data collection is underway through the Offshore Renewables Joint Industry Project (ORJIP). Where the data allows, the Applicant favours the use of Option 4 (the Extended Model) in using the combination of the most sophisticated model and site specific flight height data. In the absence of adequate site specific flight height data, the Applicant favours the use of Option 3 (the Extended Model). The Applicant has implemented a precautionary 98% avoidance rate for gannet and kittiwake for Options 3 (Extended Model) in the absence of recommendations from Cook <i>et al.</i> (2014).</p> <p>In light of Cook <i>et al.</i> (2014) and the joint SNCB response this chapter presents 'Basic' and 'Extended' CRM outputs at various rates of avoidance (volume 5, annex 5.3: Collision Risk Modelling).</p>

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
October 2013 (Hornsea Project One) and April 2015 (Hornsea Project Two)	JNCC and Natural England	Hornsea Project Two	Natural England raised during Hornsea Project Two the issue of inherent uncertainty around the outputs of the Collision Risk Modelling (CRM), some of which comes from natural variability in the input data (e.g. monthly counts of birds) and some of which is due to imperfect understanding of how systems work (e.g. avoidance rates and collision models). It was considered that variability and uncertainty in the site specific percentage of birds at collision height (PCH) information needs to be accounted for in CRM, in particular given the concerns about the ability of boat based observers to accurately assign birds in flight to 5m flight height bands as well as other uncertainties and variability in the data. Where site specific data on flight heights are used in the CRM, Natural England requested methods be considered for incorporating the uncertainty in PCH figures derived from the boat based survey data in the assessment of collision risk so that the effects of uncertainty in the input data on the assessment of population impacts can be understood and evaluated.	Digital video aerial survey has been used for the project-specific baseline surveys. In this approach the well-established practice of using a mathematical principle called parallax effect is used to compute the flight height of a bird from aerial imagery. The aerial survey programme for Hornsea Three is not yet complete with only data from April 2016 to February 2017 currently incorporated into the analyses presented in volume 5, annex 5.3: Collision Risk Modelling and used in the current assessment. As such, the baseline characterisation for the site is only partially complete. This has implications for the calculation of the proportion of birds at rotor height at Hornsea Three not least a limited flight height dataset. Therefore at this stage only generic flight height information (from Johnston <i>et al.</i> , 2014) has been used to calculate collision risk estimates. The update to the Band collision risk model by Masden (2015) will be used where possible. The model update allows for a better understanding of the uncertainty associated with the predicted collision impact of a wind farm development and provides confidence limits, which previously has been absent.
October 2013 (Hornsea Project One) and April 2015 (Hornsea Project Two)	JNCC and Natural England	Hornsea Project One and Hornsea Project Two	During Hornsea Project One, JNCC and Natural England advised the use of a generic 2 km buffer for all but the most sensitive species (divers and sea ducks which require a 4 km buffer). Natural England raised during Hornsea Project Two that the guidance in the interim displacement advice note (Natural England and JNCC, 2012) should be followed. Impacts should be calculated and presented using the full range of mortality rates (0 to 10%) and displacement rates (30 to 70%) for key species.	The PEIR uses 2 km and 4 km buffers as advised, other than for assessment of temporary construction effects, where the populations within Hornsea Three only are considered. The spatial extent to which the effects of operational displacement will be assessed for each species will follow the interim guidance presented in Natural England and JNCC (2012). The guidance recommends that, for all but the most sensitive species for which a 4 km buffer should be used (divers and seaducks), a 2 km buffer around the wind farm footprint should be used. A range of displacement rates and mortality figures will be presented within a table, following the recommendations of the interim guidance presented in Natural England and JNCC (2012). A single level of displacement will be selected within the table to take forward for the purposes of assessment based on available literature and expert knowledge. See volume 2, chapter 5: Offshore Ornithology, section 5.6.4 on the approach to assessing displacement.
July 2014	Natural England	Hornsea Project Two	Natural England advised for Hornsea Project Two that there is inadequate discussion around the effect of incomplete surveys in the individual species accounts, which variability in survey coverage has not been adequately accounted for and can be misinterpreted.	Currently no issues regarding survey coverage either temporarily or spatially have occurred or are anticipated. If problems arise then further discussion will be provided.
October 2013	JNCC and Natural England	Hornsea Project One	There were queries regarding how proportioning was been undertaken for unidentified birds. There was noted inconsistency between the Technical Report and Appendix C as to how unidentified individuals were apportioned to corresponding species. Clarification was requested on exactly what methodology was used. Without this clarity, it was stated to be difficult to have certainty in the estimates provided for those species where unidentified groupings (from the survey data) may be relevant.	Unidentified birds assigned to a species group, have been assigned to species pro-rata according to the ratio of species.
October 2013 and July 2014	JNCC and Natural England	Hornsea Project One and Hornsea Project Two	During Hornsea Project One, Natural and JNCC advises that for adequate assessment of EIA impacts in particular, it was considered important to present predicted mortality (from collision and displacement) against a range of appropriate population scales. Particularly important is to characterise and define the Biologically Defined Minimum Population Scale (BDMPS) for each receptor species. During Hornsea Project Two, Natural England noted that it was not always clear when BDMPS population scales have been used for each species for the different seasons and what the population size relevant to these scales are and what the justification/evidence for the different scales is.	Full seasonal breakdowns of overall collision mortality and displacement have been provided (volume 2, chapter 5: Offshore Ornithology, section 5.11.2) For the breeding season the BDMPS for each species will be defined by breeding colony populations with connectivity to Hornsea Three. Connectivity is determined through analyses of the likely foraging ranges of breeding features. During the non-breeding season seabird populations, BDMPS will be defined by the species-specific seabird populations presented by Furness (2015). Migratory species will be dealt with separately using specific data sources (e.g. Wright <i>et al.</i> , 2012).

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
July 2014	Natural England	Hornsea Project Two	Natural England raised during Hornsea Project Two that although sensitivity scores from Furness and Wade (2012) and Langston (2010) were presented, the overall risk value allocated to species is taken as the highest score across the table from Langston (2010), this downgrades the vulnerability of a number of species to collision risk. Natural England do not support the use of Langston (2010) in the context of defining sensitivity.	Furness and Wade (2012) has been superseded by Wade <i>et al.</i> , (2016). This will be the primary reference used to inform the sensitivity scores of receptors except in cases where impacts are not included or where particular species are not included. Where this is the case, other standard references such as Maclean <i>et al.</i> (2009) and Langston (2010) will be consulted.
July 2014	Natural England	Hornsea Project Two	Natural England raise during Hornsea Project Two, that it is not clear how the population estimates for birds in the project plus 2 km buffer have been derived from the Hornsea Project Two array area and 4 km buffer population estimates. In particular, whether the number of birds analysed as being in the project plus 2 km buffer is based on survey data corresponding only to this area or whether it has been derived by scaling down the population totals from the wider Hornsea Project Two array area and 4km buffer area. It would be helpful if the monthly bird data for the Project and 2km buffer could be presented in the same format that the Hornsea Project Two array area and 4 km buffer data are presented throughout the reports (e.g. in Table 7.24 of the Ornithology Technical Report).	The population estimates for Hornsea Three and 4 km buffer have not been scaled to produce the Hornsea Three and 2 km buffer population estimates. Data for the Hornsea Three plus 2 km buffer polygon has been extracted from GIS files and distance analysis applied to derive population and density estimates.
October 2013	JNCC and Natural England	Hornsea Project One	Natural England and JNCC advised that breeding seasons are carefully defined in the assessment, with reference to a range of relevant literature. Natural England and JNCC recognised that there is uncertainty surrounding an exact approach to this and welcomed further discussion and clarification with the Applicants over the definition of seasons for some key species (for example auks and kittiwakes). The breeding season should be considered as beginning before egg-laying: whilst prospecting visits to colonies in the winter months should not be incorporated into the season used, we would expect the start of the defined breeding season to reflect the peak arrival of breeding birds to their colonies, based on best available evidence. The close of the breeding season should also be chosen carefully with respect to fledging/colony departure, as it will have a significant bearing on the definition of the post-breeding season.  During Hornsea Project Two, Natural England noted that the breeding seasons used for seabird species follows those used during the Hornsea Project One application. This is an area where there is the potential for ongoing debate about the most appropriate definition of due to variations between colonies and the literature. The work that Natural England has commissioned to look at non-breeding season population scales for seabird species may result in updates to our advice on appropriate seasonal divisions to use in the assessment. The final results of this work will be available in the autumn of 2014.	Impact on bird populations from effects individuals may sustain as a consequence of Hornsea Three will be assessed in relation to relevant biological seasons and the appropriate reference populations as derived from Furness (2015) and Kober <i>et al.</i> (2010), refined with existing data from the former Hornsea Zone and expert opinion. For most species, there is an overlap between the times of year when birds are migrating and breeding in the North Sea. Moreover Furness (2015) defines a migration-free breeding season nested within the wider temporally defined breeding season. The migration-free breeding season is defined as that part of the breeding season, when substantial migration of the species is not occurring in UK waters. See section 1.3.5 of annex 5.1: Baseline Characterisation Report on seasonal definitions.
October 2013	JNCC, Natural England and Royal Society for the Protection of Birds (RSPB)	Hornsea Project One	Natural England and JNCC welcomed the tiered approach demonstrated by the Applicants in their Environmental Statement as a means of characterising cumulative impacts into various tiers of projects already consented versus those further back in the consenting process. However, they highlighted the need for impacts to be considered in light of revised regional population scales for EIA elements of receptor species. Moreover, it was considered necessary that any assessment be presented, as far as is possible, in a "common currency" between developments (i.e. it is confusing to present CRM figures at a range of avoidance rates and from different models within a CEA). The amalgamation of qualitative and quantitative assessments requires careful consideration. Consequently, Natural England and JNCC did not conclude that the Hornsea development does not have an adverse effect on key species from certain Special Protection Areas (SPAs), or an impact at an EIA level, for a number of species, based on the current information presented by the developer.	All relevant projects and plans considered cumulatively alongside Hornsea Three have been allocated into 'Tiers', reflecting their current stage within the planning and development process (see volume 2, chapter 5: Offshore Ornithology, section 5.12). Where possible data are presented from other projects in the CEA in a "common currency" as discussed in volume 2, chapter 5: Offshore Ornithology, section 5.13.2.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
October 2013	JNCC and Natural England	Hornsea Project One	Natural England and JNCC did not agree with 99% avoidance rate for gannets as the sole basis for assessment of collision impacts. Natural England and JNCC feel the presentation of collision mortality estimates at both 98% and 99% avoidance rates is appropriate.	A range of avoidance rates will be presented within the PEIR, including RSPB's preferred avoidance rate for gannet in the breeding season of 98.0 and for non-breeding season of 98.9 for the basic model.  The proposed avoidance rates for Hornsea Three are primarily based on a research project commissioned by Marine Scotland (Cook <i>et al.</i> 2014) which indicated appropriate avoidance rates for five key seabird species (gannet, kittiwake, lesser black-backed gull, herring gull and great black-backed gull), noting that JNCC <i>et al.</i> (2014) clarified that it was SNCB advice to use a rate of 98.9% for kittiwake when applying the Basic version of the model. Cook <i>et al.</i> (2014) makes no recommendation regarding avoidance rates for use with the Extended Band model for northern gannets and black-legged kittiwakes due to a lack of species-specific data. For application of the Extended version of the model to kittiwake and gannet, it is proposed that a minimum avoidance rate of 98% is assumed, considered as suitably precautionary based on the findings of SMart Wind and Forewind (2013).
October 2013	RSPB	Hornsea Project One	In particular, the use of 99% avoidance rate for gannets, and 1 km buffer for auk displacement. It was understood that the use of Band Option 4 for CRM is under review by both Scottish Natural Heritage and Marine Scotland. Pending the outcome of these reviews, the RSPB cannot accept the outputs from models using this method.	A range of avoidance rates will be presented in PEIR. The British Trust for Ornithology (BTO) report on behalf of Marine Scotland (Cook <i>et al.</i> 2014) has made the recommendation that a gannet avoidance rate of 98.9% is appropriate for the 'Basic' Band Model. The report did not however make a recommendation for the 'Extended' Band Model. On 25 November 2014, the SNCBs published their responses to Cook <i>et al.</i> (2014). The SNCBs in general supported the conclusions of the report including a Basic Model avoidance rate of 98.9 (± 0.2 SD). Cook <i>et al.</i> (2014) makes no recommendation regarding avoidance rates for use with the Extended Band model for gannet due to a lack of species-specific data. For application of the Extended version of the model to gannet, it is proposed that a minimum avoidance rate of 98% is assumed, considered as suitably precautionary based on the findings of SMart Wind and Forewind (2013).  The PEIR uses 2 km and 4 km buffers following the interim guidance presented in Natural England and JNCC (2012), other than for assessment of temporary construction effects, where the populations within Hornsea Three only are considered.
October 2013	RSPB	Hornsea Project One	Given the importance of the area to seabirds and the uncertainty over the Project's impacts, should consent be granted then a robust package of post-construction monitoring (PCM) was considered essential. The results of this PCM should inform Hornsea Project Two, and Hornsea Project Two should not be accepted without such information. The RSPB's comments on Hornsea Project One were given without prejudice to our views on Hornsea Project Two.	Comment noted. It is accepted that the draft Marine Licence for Hornsea Three is likely to include ornithological surveys as part of PCM.
<b>Commercial Fisheries</b>				
February 2011	North Sea Demersal Regional Advisory Council (RAC) meeting	Hornsea Project One and Hornsea Project Two	Queries are raised over the extent of Safety Zones around operational turbines.	Hornsea Three intends to apply for safety zones of 500 m around construction and major maintenance works. During the operational phase, it has been assumed that 500 m safety zones will also be sought around manned platforms. The impact on safety zones has therefore been considered within the impact assessment as set out in volume 2, chapter 6: Commercial Fisheries, section 6.11 and in Table 6.8.
August 2012	National Federation of Fishermen's Organisations (NFFO)	Hornsea Project One and Hornsea Project Two	Cumulative impacts of Special Areas of Conservation (SACs) and Marine Conservation Zones (MCZs) - reasonable to assume mobile gears will be excluded.  Queries are raised over the extent of Safety Zones around operational turbines.	The cumulative effect of Hornsea Three, alongside MCZs and SACs, as well as other projects, plans and activities in the southern North Sea, are considered within the CEA presented in volume 2, chapter 6: Commercial Fisheries, section 6.13 below.  As above, the extent of Safety Zones and how they are considered in this assessment is summarised in volume 2, chapter 6: Commercial Fisheries, Table 6.8.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
August 2012	Eastern England Fish Producers Organisation (EEFPO)	Hornsea Project One and Hornsea Project Two	Concern over electromagnetic fields (EMF) on shellfish and elasmobranchs. Importance of <i>Nephrops</i> grounds north of the former Hornsea Zone. Extent and frequency of maintenance vessel movements.	EMF is considered within chapter 3: Fish and Shellfish Ecology. The impact of sedimentation is assessed within chapter 3: Fish and Shellfish Ecology, and in volume 2, chapter 6: Commercial Fisheries, section 6.11. The impact of increased vessel movements is assessed in volume 2, chapter 6: Commercial Fisheries, section 6.11.
August 2012	North Shields <i>Nephrops</i> demersal otter trawling fleet; Anglo Scottish Fishermen's Association and Anglo Scottish Fish Producers Organisation	Hornsea Project One and Hornsea Project Two	Vessels targeting <i>Nephrops</i> do not fish within the former Hornsea Zone, but concern over sedimentation for <i>Nephrops</i> grounds immediately north of the former Hornsea Zone. Data under-representing landings from the area. Agree to provide landings declarations for individual vessels.	The potential impacts to the <i>Nephrops</i> resource are considered in detail within chapter 3: Fish and Shellfish Ecology. This has informed the commercial fisheries EIA (volume 2, chapter 6: Commercial Fisheries, section 6.11). MMO data corroborate those reported at an ICES level for the Botney Gutt Functional Unit. Landings declarations remain outstanding and have not informed the EIA.
September 2012	Danish Fishermen's Association	Hornsea Project One and Hornsea Project Two	Further information on sandeel fishing activity and operational requirements provided by consultees. Proportion of effort/importance for sandeel areas within the former Hornsea Zone. A longer data series is recommended to account for natural fluctuations across sandeel grounds in the North Sea. Discussion on location of key sandeel grounds within the former Hornsea Zone and potential to fish within the wind farm.	Sandeel fishing is shown in volume 2, chapter 6: Commercial Fisheries, Figure 6.15 and has informed the baseline assessment (volume 2, chapter 6: Commercial Fisheries, section 6.7 as well as the impact assessment (volume 2, chapter 6: Commercial Fisheries, section 6.11)). Approximate effort levels provided in the meeting inform the baseline assessment (volume 2, chapter 6: Commercial Fisheries, section 6.7 and volume 5, annex 6.1: Commercial Fisheries Technical Report). A ten year data set for landings statistics has been analysed and presented in volume 5, annex 6.1: Commercial Fisheries Technical Report.
September 2012	VisNed CPO Nederlandse Visserbond Dutch Fish Product Board Plus follow up meeting with VisNed and six vessel owners	Hornsea Project One and Hornsea Project Two	Recommended that a longer time series for data are considered based on changing fishing patterns over last 10 years. Scale at which the Vessel Monitoring System (VMS) data are presented (which equates to 1/16th of an International Council for the Exploration of the Seas (ICES) rectangle). The key issue remains extent of cable burial. It is highly likely that Dutch beam trawlers will explore alternative grounds if they are excluded from the Hornsea Project One and Hornsea Project Two array areas. Concern is raised over EMF effects.	Landings data, for a ten year period, for these vessels has been obtained, together with VMS analysis from Wageningen Economic Research and is presented within volume 5, annex 6.1: Commercial Fisheries Technical Report. Details of burial and extent of protection for all cables are provided in volume 2, chapter 6: Commercial Fisheries, Table 6.8. The potential for beam trawl displacement is acknowledged within the gear conflict impact to potting vessels (volume 2, chapter 6: Commercial Fisheries, section 6.11). EMF is considered in detail within chapter 3: Fish and Shellfish Ecology.
October 2012	From Nord (a French Fisheries Producers Organisation (PO) Cooperative Maritime Etaploise (C.M.E.) CRPMEM Nord Copeche	Hornsea Project One and Hornsea Project Two	MCZs in relation to key fishing grounds across Silver Pitt. It is expected that 500 to 1,000 m would allow fishing between turbines for French demersal trawlers. Detail on French vessel activity provided. Confidentiality issues make obtaining further data difficult	The cumulative effect of Hornsea Three, alongside European Marine Sites (including MCZs) and SACs, as well as other projects, plans and activities in the southern North Sea, are considered within the CEA presented in volume 2, chapter 6: Commercial Fisheries, section 6.13 below. Approximate effort levels and location inform the baseline (volume 2, chapter 6: Commercial Fisheries, section 6.7 and volume 5, annex 6.1: Commercial Fisheries Technical Report). Landings data from EU Data Collection Framework (DCF) includes landings by French vessels by ICES rectangle, presented in baseline (volume 2, chapter 6: Commercial Fisheries, section 6.7 and volume 5, annex 6.1: Commercial Fisheries Technical Report).



Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
September 2012	Rederscentrale	Hornsea Project One and Hornsea Project Two	The former Hornsea Zone is of lower concern compared to MCZs and other Round 3 zones, although navigational issues are raised. Will consider the potential for co-existence (due to the extent of current North Sea wind farm developments).	A maximum design scenario is assessed in the EIA (volume 2, chapter 6: Commercial Fisheries, Table 6.8), which details the minimum turbine spacing of 1 km between turbines. Longer steaming distances are considered as a separate impact within the commercial fisheries EIA specifically related to the additional steaming that would be required for commercial fishing vessels that would otherwise operate within the array area (see volume 2, chapter 6: Commercial Fisheries, section 6.11). Changes to navigational routes for commercial fishing vessels (not actively engaged in fishing) are considered within chapter 7: Shipping and Navigation). Potential for co-existence is acknowledged; however see maximum design scenarios in volume 2, chapter 6: Commercial Fisheries, Table 6.8.
September 2012	Eastern Inshore Fisheries and Conservation Authority (IFCA)	Hornsea Project One and Hornsea Project Two	Cumulative effects related to disturbance or loss of fishing grounds leading to displacement of fishing effort.	The cumulative effect of Hornsea Three, alongside other projects, plans and activities in the southern North Sea, on the loss of fishing grounds and displacement of effort leading to gear conflict are assessed within the CEA presented in volume 2, chapter 6: Commercial Fisheries, section 6.13 below.
<b>Shipping and Navigation</b>				
December 2010	Royal Yachting Association (RYA)	Hornsea Project One	The RYA believes that the threat to recreational yachts can be minimised by specifying: <ul style="list-style-type: none"> <li>• A minimum rotor height clearance above Mean High Water Springs (MHWS) of 22 m; and</li> <li>• A minimum underwater clearance of 4 m below Mean Low Water Springs (MLWS).</li> </ul>	Hornsea Three has a minimum rotor height of 34.97 m above Lowest Astronomical Tide (LAT). A Cable Burial Risk Assessment will be undertaken (post consent) to assess under keel clearance (UKC). See section 7.8 and section 23 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment.
December 2010	Maritime Coastguard Agency (MCA)	Hornsea Project One	The MCA recommended that turbines should not be set out in curves, circles or a random arrangement as this could hinder Search and Rescue (SAR) operations and make navigation for smaller vessels more difficult.	Hornsea Three SAR impacts are considered in section 22.16 and appendix C of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment and assessed within section 7.9.
January 2011	Chamber of Shipping (CoS)	Hornsea Project One and Hornsea Project Two	The CoS has extensive experience of assisting with the planning and development of offshore renewable projects in UK waters and would be happy to provide further input from a shipping perspective. CoS also believe it will be vital to include the shipping industry in the future discussions on the development of the greater Hornsea Zone.	Initial consultation with regular operators was undertaken for Hornsea Three; feedback was limited. See January 2017 entry in table 7.4 and section 14 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment. The proposed navigational corridor minimises impacts on future case routing (see section 7.11).
February 2011	Cruising Association (CA)	Hornsea Project One and Hornsea Project Two	The CA has concerns that any heavy population of the former Hornsea Zone as a whole, particularly to the west, could cause an in combination or cumulative effect on cruising routes.	Recreational activity at the Hornsea Three array area is very low; cumulatively even considering Hornsea Project One and Hornsea Project Two recreational activity is also very low. Cumulative scenarios are considered in section 7.11 and section 21 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment. Recreational activity is considered within section 7.5.2 and section 15.2 of volume 5, annexes 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment respectively.
February 2011	MCA and Trinity House (TH)	Hornsea Project One and Hornsea Project Two	TH raised concerns regarding cumulative impacts on the east coast, including the former Hornsea Zone, former East Anglia Zone (now Vattenfall and Scottish Power projects) and Galloper offshore wind farm. TH stressed the fact that these zones/projects need to be considered from a cumulative perspective in relation to shipping and navigation.	Future case routing is considered in section 7.5.5 and section 17 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment. Cumulative scenarios for Hornsea Three are considered in section 7.11 and section 21 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment respectively. Identified impacts are assessed in section 7.9.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
October 2011	DFDS Seaways	Hornsea Project One and Hornsea Project Two	DFDS Seaways have concerns relating to further development within the Hornsea Zone. Deviations will mean that vessels will need to increase speed to continue to meet current scheduling.	Consultation and future case routeing for DFDS Seaways in relation to Hornsea Three is noted and considered in section 14 and section 17 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment respectively. Effects have been identified as broadly acceptable (not significant) given the increased sea room (see section 22.4 of the volume 5, annex 7.1). Related impacts are assessed in section 7.9.
July 2012	CoS	Hornsea Project One and Hornsea Project Two	CoS raised the issue of the cumulative impact of the Hornsea Zone as a whole where impacts such as route changes and assessment of deviations should be considered.	Future case routeing is considered in section 7.5.5 and section 17 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment. Cumulative scenarios for Hornsea Three are considered in section 7.11 and section 21 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment respectively.
September 2012	Rijkswaterstaat North Sea (the Dutch Ministry of Infrastructure and Environment)	Hornsea Project One	Rijkswaterstaat North Sea advised that when assessing safety of shipping the following needs to be incorporated: <ul style="list-style-type: none"> <li>• Ability to comply with the international collision regulation;</li> <li>• Consideration of general IMO vessel routing;</li> <li>• Size and manoeuvring characteristics of the vessel transiting site etc.;</li> <li>• Radar interference; and</li> <li>• Vessel traffic services, pilotage.</li> </ul>	A Formal Safety Assessment (FSA) for Hornsea Three has been undertaken in section 22 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment.
November 2012	TH	Hornsea Project Two	The possible cumulative and in combination effects on shipping routes and patterns should be fully assessed. The decommissioning plan should include a scenario where upon decommissioning and completion of removal operations an obstruction is left on site (attributable to the wind farm) which is considered to be a danger to navigation and which it has not proved possible to remove. Such an obstruction may be required to be marked until such time as it is either removed or no longer considered a danger to navigation, the continuing cost of which would need to be met by the development/operator.	Future case routeing is considered in section 7.5.5 and section 17 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment. Cumulative scenarios for Hornsea Three are considered in section 7.11 and section 21 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment respectively. Identified impacts are assessed in section 7.9.
December 2012	MCA and TH	Hornsea Project Two	Discussed potential impact of Hornsea Project Two upon SAR operations. MCA agreed with Smart Wind an approach to include self-help facilities and advised this should be outlined in the Draft Environmental Statement as a concept and detailed in the post consent phase within the Emergency Response and Cooperation Plan (ERCoP).	Hornsea Three SAR impacts are considered in section 22.16 and appendix C of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment and assessed within section 7.9.
January 2013	MCA and TH	Hornsea Project One and Hornsea Project Two	The MCA and TH advised that they would prefer turbine layout within the Hornsea Project One and Hornsea Project Two array area to be grid based such that a SAR vessel or helicopter can navigate on a fixed course from one side of the Hornsea Project One and Hornsea Project Two array areas to the other in at least two axes.	Internal navigation within the Hornsea Three array area is considered in section 22.12 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment and assessed in section 7.9.
February 2013	CA	Hornsea Project One	The CA recommends that any offshore cable corridors in depths of less than 10 m are buried to a minimum of 1 m below the seabed to avoid snagging by anchors.	A Cable Burial Risk Assessment will be undertaken post consent - see section 7.8 and section 23 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
March 2013	CoS	Hornsea Project One	<p>CoS identified the following issues with regard to the Draft Environmental Statement:</p> <ul style="list-style-type: none"> <li>When assessing the route deviation impacts of future projects, Hornsea Project Two should take the existing 0.01 to 0.5% deviations resulting from Hornsea Project One into account;</li> <li>CoS were extremely concerned over the potential increase in interaction between vessels and oil and gas infrastructure resulting from route deviation to the south of the former Hornsea Zone. The use of the 10 nm buffer for traffic analysis makes a current assessment of vessel interaction with this infrastructure extremely difficult; and</li> <li>The requirement for 500 m safety zones around individual turbine structures during construction, major maintenance and decommissioning as standard practice were agreed. Any application for permanent 50 m safety zones during normal operations will need to be supported by a Navigational Risk Assessment (NRA) outlining a robust safety case.</li> </ul>	<p>Future case routing is considered in section 7.5.5 and section 17 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment. Cumulative scenarios for Hornsea Three are considered in section 7.11 and section 21 of volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment respectively. Identified impacts are assessed in section 7.10.</p> <p>500 m safety zones will be applied for during the construction phase around infrastructure and installation vessels. Operational safety zones of 500 m around accommodation platforms are considered in section 7.8 and section 23 within volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment.</p>
April 2013	CoS, TH, MCA and RYA	Hornsea Project Two	<p>Discussion regarding no permanent operational 50 m safety zones around turbines will be applied for; 500 m safety zones around platforms may be applied for subject to justification.</p>	<p>500 m safety zones and pre commissioning 50 m safety zones will be applied for during the construction phase. Operational safety zones of 500 m around accommodation platforms are considered in section 7.8 and section 23 within volume 5, annex 7.1: Hornsea Three Array Area, Offshore Cable Corridor and Offshore HVAC Booster Station Search Area Navigational Risk Assessment.</p>
<b>Aviation, Military and Communications</b>				
October 2012	BOND	Hornsea Project One	<p>Discussed aviation operations to inform the assessments including:</p> <ul style="list-style-type: none"> <li>BOND conduct airborne radar approaches to platforms approximately 15 % of the time;</li> <li>All airborne radar approaches must have a 1 nm lateral separation from obstacles;</li> <li>All airborne radar approaches are flown into wind with up to 30 degrees angle either side; and</li> <li>Typically 5 to 10 % of BOND flights are low level and require use of Helicopter Main Routes (HMRs).</li> </ul>	<p>The impact on platforms within 9 nm consultation zones overlapping with the Hornsea Three array area is assessed in volume 2, chapter 8: Aviation, Military, section 1.11.3.</p> <p>The impact on HMRs is assessed in volume 2, chapter 8: Aviation, Military, section 1.11.1.</p>
January 2013	Helicopter operators	Hornsea Project One and Hornsea Project Two	<p>Representation from BOND, Bristow, Noordzee Helikopters Vlaanderen (NHV). Discussed operational input to assessment:</p> <ul style="list-style-type: none"> <li>Icing levels;</li> <li>Transit heights;</li> <li>HMRs;</li> <li>Consultation zone impingement;</li> <li>Flying routes;</li> <li>Services provided by Anglia radar; and</li> <li>Approach procedures.</li> </ul>	<p>The impact on HMRs is assessed in volume 2, chapter 8: Aviation, Military, section 1.11.1.</p> <p>The impact on platforms with 9 nm consultation zones overlapping with the Hornsea Three array area is assessed in volume 2, chapter 8: Aviation, Military, section 1.11.3.</p>
January 2013	Aviation stakeholders including helicopter operators, oil and gas operators and regulators	Hornsea Project One and Hornsea Project Two	<p>Discussion on aviation assessment; methodology and its conclusions.</p> <p>HMR discussion: The dual purpose of the HMR was discussed as providing both a safe means of flying to and from offshore installations and as an identification of common flight paths. The HMR structure was not seen as of paramount importance to safeguard air traffic. When operating under Visual Flight Rules (VFR) pilots could continue to use the HMRs. and therefore they should not be moved.</p>	<p>The impact on HMRs is assessed in volume 2, chapter 8: Aviation, Military, section 1.11.1.</p>

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
January 2013	Aviation stakeholders including helicopter operators, oil and gas operators and regulators	Hornsea Project One and Hornsea Project Two	The principles for assessing the impact on platform access within the 9 nm consultation zone was agreed. Discussion was had on impact of turbines in close proximity to platforms and any possible alternative access was identified. Minimum separation distance of a wind turbine from a gas platform is defined by the platform safety case. Helicopter operators wish to avoid any situation where they are in an effective corridor approach to a platform with infrastructure present on both sides of their flight path. Circular flight ascent and descent can be used in certain circumstances but cannot be used for all instrument approaches. The use of aviation markers can only be considered to a platform operated by the destination platform. Satellite technology is not an operational consideration at the present time.	The impact on platforms within 9 nm consultation zones overlapping with the Hornsea Three array area is assessed in volume 2, chapter 8: Aviation, Military, section 1.11.3.
<i>Marine Archaeology and Ordnance</i>				
October 2013	English Heritage (now Historic England)	Hornsea Project One	English Heritage (now Historic England) noted the importance of an agreed Archaeological Written Scheme of Investigation (WSI).	In response to Historic England's comments on Hornsea Project One, a draft WSI has been included as an annex to the Hornsea Three marine archaeology PEIR chapter (volume 5, annex 9.2). The Draft WSI will be updated, where appropriate, following pre-application consultation and submitted as an annex to the Environmental Statement.
October 2013	English Heritage (now Historic England)	Hornsea Project One	English Heritage (now Historic England) noted the assumption made that construction of gravity base foundations (which is also assumed to be inclusive of other related designs such as suction caissons) is "low" on the basis of avoidance of already identified anomalies subject to agreed Archaeological Exclusion Zones (AEZs). However, this assumption does not seem to take adequate account of the risk that in the process of seabed preparation that other archaeological material may be encountered.	Gravity base foundations are a potential foundation option considered in the Hornsea Three project description (see volume 1, chapter 3: Project Description). The impact from gravity base foundations on marine archaeology has been fully considered in volume 2, chapter 9: Marine Archaeology, section 9.10 below. The Draft WSI, including consideration of AEZs, is included as an annex to this marine archaeology PEIR chapter (volume 5, annex 9.2). The Draft WSI will be updated, where appropriate, following pre-application consultation and submitted as annex to the Environmental Statement.
September 2013	English Heritage (now Historic England)	Hornsea Project Two	English Heritage (now Historic England) noted that if no further geo-archaeological information was available for the Hornsea Two array area, it may be that existing information should be examined by a third party to validate the baseline.	Information regarding palaeolandscapes, obtained across the former Hornsea Zone and the North Sea Palaeolandscapes Project (NSPP), have been considered in the Hornsea Three EIA and are presented in volume 5, annex 9.1: Marine Archaeology Technical Report and a summary is presented in volume 2, chapter 9: Marine Archaeology, section 9.6 below. The information obtained regarding palaeochannels is consistent appropriate to inform the baseline characterisation for the Hornsea Three EIA and therefore no further geotechnical surveys are considered to be necessary. However, a geotechnical survey of the Hornsea Three array area and offshore cable corridor will be undertaken in 2017 and the results of which will be presented in the Environmental Statement if available (see volume 2, chapter 9: Marine Archaeology, section 9.5.5). In addition, pre-construction geotechnical surveys at all turbine locations and, other areas of impact including substations, the export cable route etc. will be undertaken prior to the commencement of construction (see volume 2, chapter 9: Marine Archaeology, section 9.9).
March 2013	English Heritage (now Historic England)	Hornsea Project Two	Historic England stress the importance of prior discussion to agree survey objectives and survey methodologies to ensure data generated is of sufficient quality	In response to Historic England's comments on Hornsea Project Two, Historic England have been consulted on developing and agreeing the evidence gathering approaches, in advance of the commencement of the Hornsea Three field surveys (see volume 2, chapter 9: Marine Archaeology, Table 9.4).

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
<i>Seascope and Visual Resources</i>				
December 2010	IPC (now PINS)	Hornsea Project One	The IPC requested that the seascope and visual resources assessment considers the visual impacts of the wind farm on land based receptors, the visual impacts of the offshore cable corridor where it comes onshore and the visual impacts in relation to recreational users.	The visual effects on principal visual receptors identified in Hornsea Project One and Hornsea Project Two have been considered in Hornsea Three (volume 2, chapter 10: Seascope and Visual Resources, section 10.7.7). Hornsea Three considers the cumulative effects of underground cables and the various project components within the array SVIA study area and the offshore HVAC booster SVIA study area (volume 2, chapter 10: Seascope and Visual Resources, section 10.1) Onshore and intertidal landscape and visual effects have been considered in a separate chapter (volume 3, chapter 5: Landscape and Visual Resources). The SVIA considers the potential seascope and visual impacts of Hornsea Three (section 10.11) and the cumulative seascope and visual impacts (volume 2, chapter 10: Seascope and Visual Resources, section 10.13) on commercial and recreational receptors at sea.
			Night-time impacts of any lighting needs to be considered.	An indicative lighting plan for Hornsea Three has taken into consideration the impact of proposed aviation and navigation lighting (volume 2, chapter 10: Seascope and Visual Resources, section 10.1 and Figure 10.6).
			There is a requirement that all infrastructure and ancillary components of the scheme are included in the assessment and the duration of these features or structures.	The assessment outlines a description of infrastructure and ancillary components of the scheme in relation to seascope and visual matters.
			The EIA topics should set out clearly the interpretation of 'significant' in the context of the EIA Regulations.	Hornsea Three considers all significance criteria for present day seascope, historic seascopes and visual resources (volume 2, chapter 10: Seascope and Visual Resources, section 10.8). Those effects considered to be of significance in EIA terms are summarised in volume 2, chapter 10: Seascope and Visual Resources, Table 10.27.
December 2010	JNCC and Natural England	Hornsea Project One	JNCC and Natural England accepted that the wind farm will not be seen by onshore receptors, however, assessment will need to consider potential for impact on offshore receptors.	Hornsea Three includes principal offshore visual receptors and summarises the likely visual effects on these receptors (volume 2, chapter 10: Seascope and Visual Resources, section 10.1 for Hornsea Three and section 10.13 for the cumulative assessment). Hornsea Three includes other existing schemes/activities within the array SVIA study area and the offshore HVAC booster SVIA study area.
			The assessment should consider the potential for impact on offshore visual receptors.	Hornsea Three includes offshore visual receptors in its assessment, considering the visual effects upon a variety of visual receptors including recreational and commercial users.
March 2013	JNCC and Natural England	Hornsea Project One	The assessment should the quantify the impact to passengers and workers on board commercial ferries or cruise liners the proportion and number of cruises which take place during the hours of darkness.	Hornsea Three includes the timetable of ferry crossings and assesses impacts of the Newcastle–Amsterdam Ferry, which is considered the most sensitive receptor group (see volume 2, chapter 10: Seascope and Visual Resources, Table 10.8, Table 10.20 and section 10.11.2).
			Consideration of night-time impacts during construction and decommissioning, specifying the number of phases and estimated duration.	Night-time impacts during construction and decommissioning have been considered in volume 2, chapter 10: Seascope and Visual Resources, section 10.11.1.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
December 2010	Norfolk County Council	Hornsea Project One	The Environmental Statement would need to provide an assessment of the development of the landscape and seascape character; an assessment of the visual intrusion caused by the development; photomontages illustrating the impact of the development; and cumulative impact assessment taken together with other operational wind farms, permitted wind farms in the area and development proposals likely to come forward.	Onshore and intertidal landscape and visual effects have been considered in a separate chapter (volume 3, chapter 5: Landscape and Visual Resources). The SVIA considers the potential seascape and visual impacts of Hornsea Three (volume 2, chapter 10: Seascape and Visual Resources, section 10.11) and the cumulative seascape and visual impacts (volume 2, chapter 10: Seascape and Visual Resources, section 10.13) on commercial and recreational receptors at sea.  Photomontages are not used, as wirelines are more appropriate due to the associated difficulties in obtaining baseline photography of a consistent and known height in relation to a fixed datum. Sample photographs are used in the technical report (volume 5, annex 10.1: Seascape and Visual Resources Technical Report), as seascape characterisation of two locations representative of the Newcastle–Amsterdam ferry crossings, but six representative offshore locations have been selected for the creation of wirelines of the proposed layout.  The Hornsea Three SVIA follows PINS Advice Note Nine: Rochdale Envelope (PINS, 2012) for Nationally Significant Infrastructure projects relating to matters of cumulative assessment. These include those under construction, permitted (not yet implemented) and submitted applications (not yet determined); projects on the Planning Inspectorate's Programme of Projects, those identified in the relevant Development Plan and those in other plans and programmes which set the framework for future development.
December 2010	English Heritage (now Historic England)	Hornsea Project One	Hornsea Three should reference the English Heritage Action Plan for the delivery of the Council of Europe European Landscape Convention.	This has been included as a data source for the Historic Seascape Character (HSC) assessment (volume 2, chapter 10: Seascape and Visual Resources, section 10.6).
			Matters relating to the setting of a feature are to be considered separately from HSC.	Hornsea Three has separated the assessments for seascape/visual and HSC within this chapter (volume 2, chapter 10: Seascape and Visual Resources, section 10.11).
October 2013	English Heritage (now Historic England)	Hornsea Project One	Historic England questioned the appropriateness of determining any change as 'temporary' given the longevity of this proposed project and in recognition of the sequence of similar projects that are proposed within the former Hornsea Zone.	This comment has been noted and the assessment made as appropriate (volume 2, chapter 10: Seascape and Visual Resources, section 10.1).
June 2013	English Heritage (now Historic England)	Hornsea Project One	Historic England asked that every effort be made to utilise the information generated for the HSC work commissioned following the pilot HSC study for the area between Withernsea and Skegness	This comment has been noted and the assessment made as appropriate (volume 2, chapter 10: Seascape and Visual Resources, sections 10.5 and 10.1)
November 2012	PINS	Hornsea Project Two	Appropriate cross-reference should be made to the impact of the offshore development on the setting of coastal historic assets assessed in the landscape and visual study, as well as of impacts on seascape historic character.	The settings of coastal historic assets are assessed in volume 3, chapter 5: Historic Environment.
November 2012	English Heritage (now Historic England)	Hornsea Project Two	We concur with the approach described in section 7.7 Landscape, Seascape and Visual Amenity. We therefore require the Environment Statement to address how any perceived and spatially mapped concept of seascape historic character may be changed by the proposed development subject to this scoping exercise and in reference to associated changes caused by Hornsea Project Two.	The SVIA identifies how any perceived and spatially mapped concept of HSC may be changed by the proposed development at volume 2, chapter 10: Seascape and Visual Resources, section 10.11 and 10.13.
			The second bullet point of paragraph 7.7.26 of the Scoping Opinion states that <i>"the seascape is likely to experience direct, adverse impacts in Broad Character Types within which the turbines and substations for Hornsea Project Two are located, however we recommend that the approach adopted in the Environmental Statement is one that seeks to determine the extent of change in Broad Character Type from the present spatial description and how that change might equate to impact"</i> (refer to paragraph 7.7.28 of the Hornsea Project Two Scoping Report).	The SVIA identifies how the extent of change in Broad Character Type from the present spatial description and how that change might equate to impact at volume 2, chapter 10: Seascape and Visual Resources, section 10.11 and Table 10.21.

Date	Consultee	Issue raised on Hornsea Project One, Hornsea Project Two or in relation to both	Issues raised	Response to issue raised and/or where considered in this chapter
September 2013	English Heritage (now Historic England)	Hornsea Project Two	With respect to seascapes, Historic England asked whether the World War I losses were a definable characteristic attributable to this area.	This comment has been noted and the assessment made as appropriate (volume 2, chapter 10: Seascape and Visual Resources, section 10.1).
July 2014	English Heritage (now Historic England)	Hornsea Project Two	Historic England asked that every effort be made to utilise the information generated for the HSC work commissioned following the pilot HSC study for the area between Withernsea and Skegness	This comment has been noted and the assessment made as appropriate (volume 2, chapter 10: Seascape and Visual Resources, section 10.1).
<b>Infrastructure and Other Users</b>				
Various (2011 to 2014)	Oil and gas operators	Hornsea Project One and Hornsea Project Two	Issues raised by oil and gas operators: <ul style="list-style-type: none"> <li>Existing assets and future exploration interests;</li> <li>Changes to vessel movements in proximity to platforms;</li> <li>Need for communication on timing of operations;</li> <li>Potential effects on Radar Early Warning Systems (REWS); and</li> <li>Need for pipeline crossing and proximity agreements.</li> </ul>	Information gathered during Hornsea Project One and Hornsea Project Two consultation has been used to inform the Hornsea Three assessments on oil and gas operations. Potential impacts on the interests of oil and gas operators are discussed in volume 2, chapter 11: Infrastructure and Other Users, section 11.11 and section 11.13.
May 2013	ConocoPhillips	Hornsea Project One and Hornsea Project Two	Discussed methodology for assessing REWS and agreed this was acceptable. Discussed the technical implications on ConocoPhillips REWS (on the Saturn platform) including: increase in track table size, fluctuating returns, and use of non-acquire zones. Agreed that shadowing effects from the turbines were not a significant issue. Identified that while the location of the REWS is on Saturn platform, it is also protecting the Mimas platform and so this should be included in the assessment. Discussed the displacement of shipping routes towards the Mimas, Saturn and Tethys platforms and the impact on REWS and Closest Point of Approach (CPA).	The methodology for assessing effects on REWS and CPA is described in volume 5, annex 11.1: Radar Early Warning Systems Technical Annex. The impact on REWS installed on ConocoPhillips operated platforms is assessed in volume 2, chapter 11: Infrastructure and Other Users, section 11.11.2, with the cumulative impact assessed in section 11.13.3. The displacement of shipping routes and its impact on CPA to ConocoPhillips operated platforms will be assessed and presented in the Environmental Statement which will be submitted in Quarter 2 of 2018.
September 2014	ConocoPhillips	Hornsea Project One and Hornsea Project Two	Discussed impact of Hornsea Project Two on REWS. Discussed the displacement of shipping routes further south (than for Hornsea Project One alone) towards the Mimas, Saturn and Tethys platforms and the impact on REWS and CPA.	The impact on REWS installed on ConocoPhillips operated platforms is assessed in volume 2, chapter 11: Infrastructure and Other Users, section 11.11.2, with the cumulative impact assessed in section 11.13.3. The displacement of shipping routes and its impact on CPA to ConocoPhillips operated platforms will be assessed and presented in the Environmental Statement which will be submitted in Quarter 2 of 2018.

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