Hornsea Project Four: Environmental Statement (ES)

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Volume A3, Chapter 6: Land Use and Agriculture

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Glossary

Term	Definition
Code of Construction Practice (CoCP)	A document detailing the overarching principles of construction, contractor protocols, construction-related environmental management measures, pollution prevention measures, the selection of appropriate construction techniques and monitoring processes.
Commitment	A term used interchangeably with mitigation and enhancement measures. The purpose of Commitments is to reduce and/or eliminate Likely Significant Effects (LSEs), in EIA terms. Primary (Design) or Tertiary (Inherent) are both embedded within the assessment at the relevant point in the EIA (e.g. at Scoping, Preliminary Environmental Information Report (PEIR) or ES). Secondary commitments are incorporated to reduce LSE to environmentally acceptable levels following initial assessment i.e. so that residual effects are acceptable.
Cumulative effects	The combined effect of Hornsea Four in combination with the effects from a number of different projects, on the same single receptor/resource. Cumulative impacts are those that result from changes caused by other past, present or reasonably foreseeable actions together with Hornsea Project Four.
Design Envelope	A description of the range of possible elements that make up the Hornsea Project Four design options under consideration, as set out in detail in the project description. This envelope is used to define Hornsea Project Four for Environmental Impact

Term	Definition
	Assessment (EIA) purposes when the exact engineering parameters are not yet known. This is also often referred to as the "Rochdale Envelope" approach.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
EIA Directive	European Union Directive 85/337/EEC, as amended by Directives 97/11/EC, 2003/35/EC and 2009/31/EC and then codified by Directive 2011/92/EU of 13 December 2011 (as amended in 2014 by Directive 2014/52/EU).
EIA Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations').
Energy balancing infrastructure (EBI)	The onshore substation includes energy balancing Infrastructure. These provide valuable services to the electrical grid, such as storing energy to meet periods of peak demand and improving overall reliability.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	A document reporting the findings of the EIA and produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations.
Environmental Stewardship	Environmental Stewardship is an agri-environment scheme that provides funding to farmers and other land managers in England in return for delivering environmental management on their land. There are three elements to the scheme: High Level Stewardship (HLS); Entry Level Stewardship (ELS); and Organic Entry Level Stewardship (OELS).
Export cable corridor (ECC)	The specific corridor of seabed (seaward of Mean High-Water Springs (MHWS)) and land (landward of MHWS) from the Hornsea Four array area to the Creyke Beck National Grid substation, within which the export cables will be located.
High Voltage Alternating Current (HVAC)	High voltage alternating current is the bulk transmission of electricity by alternating current (AC), whereby the flow of electric charge periodically reverses direction.
High Voltage Direct Current (HVDC)	High voltage direct current is the bulk transmission of electricity by direct current (DC), whereby the flow of electric charge is in one direction.
Hornsea Project Four Offshore Wind Farm	The term covers all elements of the project (i.e. both the offshore and onshore). Hornsea Four infrastructure will include offshore generating stations (wind turbines), electrical export cables to landfall, and connection to the electricity transmission network. Hereafter referred to as Hornsea Four.
Landfall	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) tide and the Transition Joint Bay (TJB) inclusive of all construction works, including the offshore and onshore ECC, intertidal working area and landfall compound. Where the offshore cables come ashore east of Fraisthorpe.
Maximum Design Scenario	The maximum design parameters of each Hornsea Four asset (both on and offshore) considered to be a worst case for any given assessment.

Term	Definition
Mineral Safeguarding Areas	Mineral Safeguarding Areas are areas that contain known mineral resources that warrant protection due to their economic value. Mineral safeguarding is a process to prevent non-mineral development impeding on the future extraction of mineral resources deemed as being of local and national importance.
Mitigation	A term used interchangeably with Commitment(s) by the Applicant. Mitigation measures (Commitments) are embedded within the assessment at the relevant point in the EIA (e.g. at Scoping, PEIR or ES).
National Grid Electricity Transmission (NGET) substation	The grid connection location for Hornsea Four.
Onshore substation (OnSS)	Comprises a compound containing the electrical components for transforming the power supplied from Hornsea Project Four to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid. If a HVDC system is used the OnSS will also house equipment to convert the power from HVDC to HVAC.
Order Limits	The limits within which Hornsea Project Four (the 'authorised project') may be carried out.
Orsted Hornsea Project Four Ltd.	The Applicant for the proposed Hornsea Project Four Offshore Wind Farm Development Consent Order (DCO).
Planning Inspectorate (PINS)	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Trenchless Techniques	Also referred to as trenchless crossing techniques or trenchless methods. These techniques include Horizontal Directional Drilling (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench.

Acronyms

Acronym	Definition
ALC	Agricultural Land Classification
BMV	Best and Most Versatile
CoCP	Code of Construction Practice
CRoW	Countryside and Rights of Way Act 2000
CSS	Countryside Stewardship Scheme
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EBI	Energy Balancing Infrastructure
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
ELM	Environmental Land Management
ELS	Entry Level Stewardship
EP1HS	Extended Phase 1 Habitat Survey
ERYC	East Riding of Yorkshire Council

Acronym	Definition
ESAS	Environmentally Sensitive Areas Scheme
ES	Environmental Statement
GAEC	Good Agricultural and Environmental Condition
HDD	Horizontal Directional Drilling
HLS	Higher-Level Stewardship
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IPC	Infrastructure Planning Commission
LCT	Landscape Character Type
LPA	Local Planning Authority
LSE	Likely Significant Effect
LWS	Local Wildlife Site
MAFF	Ministry of Agriculture, Fisheries and Food
MDS	Maximum Design Scenarios
MHWS	Mean High Water Springs
NE	Natural England
NGET	National Grid Electricity Transmission
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NSRI	National Soil Resources Institute
OAS	Organic Aid Scheme
OELS	Organic Entry Level Stewardship
OS	Ordnance Survey
OnSS	Onshore Substation
PEIR	Preliminary Environmental Information Report
PINS	(The) Planning Inspectorate
PRoW	Public Rights of Way

Units

Unit	Definition
cm	Centimetre
ha	Hectare
km	Kilometre
kV	Kilovolt
m	Metre

6.1 Introduction

6.1.1.1 Orsted Hornsea Project Four Limited (the 'Applicant') is proposing to develop Hornsea Project Four Offshore Wind Farm (hereafter 'Hornsea Four'). Hornsea Four will be located approximately 69 km offshore the East Riding of Yorkshire in the Southern North Sea and will be the fourth project to be developed in the former Hornsea Zone. Hornsea Four will include both offshore and onshore infrastructure including an offshore generating station (wind farm), export cables to landfall, and on to an onshore substation (OnSS) with energy balancing infrastructure (EBI), and connection to the electricity transmission network.

6.1.1.2 This chapter of the Environmental Statement (ES) presents the results of the Environmental Impact Assessment (EIA) for the potential impacts of Hornsea Four on land use and agriculture. Specifically, this chapter considers the potential impact of Hornsea Four landward of Mean High-Water Springs (MHWS) during its construction, operation and maintenance, and decommissioning phases.

6.1.1.3 This chapter describes the impacts of any temporary and permanent land take within the onshore study areas that may occur to the following receptors:

- **Land use**: human beings (including landowners, occupiers, local communities and other land users), as well as Public Rights of Way (PRoW), cycle routes and coastal paths; and
- **Agriculture**: The availability and use of the land for agricultural practice.

6.1.1.4 Hornsea Four also has the potential to impact land use and agriculture through changes to other components of the environment (e.g. through specific source-pathway-receptor linkages), as discussed in other technical chapters within this ES. For a full understanding of wider land use implications, the reader is directed to the following:

- **Chapter 1: Geology and Ground Conditions**;
- **Chapter 3: Ecology and Nature Conservation**;
- **Chapter 4: Landscape and Visual**;
- **Chapter 7: Traffic and Transport**; and
- **Chapter 9: Air Quality**.

6.2 Purpose

6.2.1.1 The primary purpose of the ES is to support the Development Consent Order (DCO) application for Hornsea Four under the Planning Act 2008 (the 2008 Act). This ES constitutes the environmental information for Hornsea Four and sets out the findings of the EIA.

6.2.1.2 The ES has been finalised with due consideration of pre-application consultation to date (see **Volume B1, Chapter 1: Consultation Report** and **Table 6.4: Consultation responses**) and the ES will accompany the application to the Planning Inspectorate (PINS) for Development Consent.

6.2.1.3 This ES chapter:

- Presents the existing environmental baseline established from desk studies, the findings of walkover surveys undertaken in February, September and October 2019 as well as information and feedback collated from consultation with stakeholders and landowners;
- Presents the potential environmental effects on land use and agriculture arising from Hornsea Four, based on the information gathered and the analysis and assessments undertaken;
- Identifies any assumptions and limitations encountered in compiling the environmental information; and
- Highlights any identified monitoring and/or mitigation measures which could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

6.3 Planning and Policy Context

6.3.1.1 Planning policy on offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to land use and agriculture, is contained in the Overarching National Policy Statement (NPS) for Energy (EN-1; DECC 2011).

6.3.1.2 NPS EN-1 includes guidance on what matters are to be considered in the assessment. These are summarised in **Table 6.1**.The UK planning and policy context for Hornsea Four is set out in **Volume A1, Chapter 2: Planning and Policy Context**. In addition to the NPS for Energy (EN-1), the most relevant of these in relation to land use and agriculture are:

- Countryside and Rights of Way Act (CRoW) 2000;
- The Commons Act 2006;
- The Environmental Stewardship (England) Regulations 2005 (as amended);
- Marine and Coastal Access Act 2009;
- The Wildlife and Countryside Act 1981 (as amended);
- Natural Environment White Paper 2011; and
- National Planning Policy Framework (NPPF) 2019.

Table 6.1: Summary of NPS EN-1 relevant to land use and agriculture.

Summary of NPS EN-1 provisions	How and where considered in the ES
"*The ES should identify existing and proposed land uses near the project, any effects of replacing an existing development or use of the site with the proposed project or preventing a development or use on a neighbouring site from continuing. Applicants should also assess any effects of precluding a new development or use proposed in the development plan*" (EN-1, paragraph 5.10.5).	Existing land use within and adjacent to the Hornsea Four Order Limits is identified in **Section 6.7**. For details of foreseeable future developments see **Volume A4, Annex 5.5: Onshore Cumulative Effects** and **Volume A4, Annex 5.6: Location of Onshore Cumulative Schemes.** No existing or proposed developments have been identified that could be affected by Hornsea Four.

Summary of NPS EN-1 provisions	How and where considered in the ES
	No impacts to new developments, site designations or uses proposed in the East Riding Yorkshire Local Plan Strategy (East Riding Yorkshire Council, 2016) have been identified.
"*Applicants will need to consult the local community on their proposals to build on open space, sports or recreational buildings and land. Taking account of the consultations, applicants should consider providing new or additional open space including green infrastructure, sport or recreation facilities, to substitute for any losses as a result of their proposal. Applicants should use any up-to-date local authority assessment or, if there is none, provide an independent assessment to show whether the existing open space, sports and recreational buildings and land is surplus to requirements*" (EN-1, paragraph 5.10.6).	The proposals avoid direct effects (including construction) on open space including parks; ornamental gardens; natural/semi-natural green space; green corridors; amenity green space; sports/playing pitches; allotments; cemeteries / churchyards; and open space provision for young people. A programme of community consultation has been undertaken to inform the project design, DCO application and attendant EIA to ensure that local views have been considered in the development of Hornsea Four. **Volume A1, Chapter 6: Consultation** summarises the consultation approach taken by Hornsea Four, with further details provided in **Volume B1 Chapter 1: Consultation Report**.
"*During any pre-application discussions with the applicant the local planning authority (LPA) should identify any concerns it has about the impacts of the application on land use, having regard to the development plan and relevant applications and including, where relevant, whether it agrees with any independent assessment that the land is surplus to requirements*" (EN-1, paragraph 5.10.7).	Pre-application discussions have been undertaken with the local authority (East Riding of Yorkshire Council (ERYC)) through the Evidence Plan process. This process of consultation has included the discussion of the works associated with Hornsea Four and has allowed ERYC to comment on the project design. Further details are provided in **Section 6.4**. **Volume A1, Chapter 6: Consultation** summarises the consultation approach taken by Hornsea Four, with further details provided in **Volume B1 Chapter 1: Consultation Report**.
"*Applicants should seek to minimise impacts on the "best and most versatile" agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed. For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination*" (EN-1, paragraph 5.10.8).	Effects on the Best and Most Versatile (BMV) agricultural land and soil quality are assessed in **Section 6.11**. Minimisation of impacts to BMV agricultural land have been undertaken where possible. However, the predominant land cover within the wider study area is classed as BMV land, and therefore the ability to avoid use of BMV land is extremely limited. More widely, effects due to any existing contaminated land are presented in **Chapter 1: Geology and Ground Conditions.**
"*Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-*	Sterilisation of future mineral resources has been assessed, as discussed in **Chapter 1: Geology and**

Summary of NPS EN-1 provisions	How and where considered in the ES
term potential of the land use after any future decommissioning has taken place" (EN-1, paragraph 5.10.9).	**Ground Conditions** of the Preliminary Environmental Information Report (PEIR) (Orsted 2019a). The assessment concluded that no likely significant effect on Mineral Safeguarding Areas during the operational phase of the project would arise. In line with the proportional approach to the Hornsea Four EIA this potential impact is therefore not considered in detail within this ES but is set out under ID GGC-O-3 within the Geology and Ground Conditions tab of **Volume A4, Chapter 5: Impacts Register**.
"*The general policies controlling development in the countryside apply with equal force in Green Belts but there is, in addition, a general presumption against inappropriate development within them. Such development should not be approved except in very special circumstances. Applicants should therefore determine whether their proposal, or any part of it, is within an established Green Belt and if it is, whether their proposal may be inappropriate development within the meaning of Green Belt policy*" (EN-1, paragraph 5.10.10).	No areas of designated Green Belt will be affected by the proposals. The closest designated green belt (around the city of York) is located approximately 30 km at its nearest point from any part of Hornsea Four.
"*However, infilling or redevelopment of major developed sites in the Green Belt, if identified as such by the local planning authority, may be suitable for energy infrastructure. It may help to secure jobs and prosperity without further prejudicing the Green Belt or offer the opportunity for environmental improvement. Applicants should refer to relevant criteria133 on such developments in Green Belts*" (EN-1, paragraph 5.10.11).	
"*An applicant may be able to demonstrate that a particular type of energy infrastructure, such as an underground pipeline, which, in Green Belt policy terms, may be considered as an "engineering operation" rather than a building is not in the circumstances of the application inappropriate development. It may also be possible for an applicant to show that the physical characteristics of a proposed overhead line development or wind farm are such that it has no adverse effects which conflict with the fundamental purposes of Green Belt designation*" (EN-1, paragraph 5.10.12).	
"*Although in the case of much energy infrastructure there may be little that can be done to mitigate the direct effects of an energy project on the existing use of the proposed site (assuming that some at least of that use can still be retained post project construction) applicants should nevertheless seek to minimise these effects and the effects on existing or planned*	Impacts on existing land use are minimised through the commitment to reinstate working areas to pre-existing conditions in line with latest guidance (Co10). The majority of land traversed by the onshore Export Cable Corridor (ECC) is agricultural and following construction the expectation is that

Summary of NPS EN-1 provisions	How and where considered in the ES
uses near the site by the application of good design principles, including the layout of the project" (EN-1, paragraph 5.10.19).	farming practices will continue above the buried cable. The project's configuration, routing and layout has taken account of multiple environmental criteria including land use with the processes followed set out in **Volume A1, Chapter 3: Site Selection and Consideration of Alternatives**. The design of the OnSS takes full account of the local environment and land uses and incorporates good design principles (set out in **Volume F2, Chapter 13: Outline Design Plan**)

6.3.1.3 NPS EN-1 also highlights several factors relating to the determination of an application and in relation to mitigation. These are summarised in **Table 6.2**.

Table 6.2: Summary of NPS EN-1 policy on decision making relevant to land use and agriculture.

Summary of NPS EN-1 provisions	How and where considered in the ES
"*Where the project conflicts with a proposal in a development plan, the Infrastructure Planning Commission (IPC)* [hereafter the Secretary of State (SoS)] *should take account of the stage which the development plan document in England or local development plan in Wales has reached in deciding what weight to give to the plan for the purposes of determining the planning significance of what is replaced, prevented or precluded. The closer the development plan document in England or local development plan in Wales is to being adopted by the LPA, the greater weight which can be attached to it*" (EN-1, paragraph 5.10.13).	No such conflict with projects or proposals identified in a development plan have been identified, reference should be made to **Volume A4, Annex 5.5: Onshore Cumulative Effects** and **Annex 5.6: Location of Onshore Cumulative Schemes.**
"*The SoS should not grant consent for development on existing open space, sports and recreational buildings and land unless an assessment has been undertaken either by the local authority or independently, which has shown the open space or the buildings and land to be surplus to requirements or the SoS determines that the benefits of the project (including need), outweigh the potential loss of such facilities, taking into account any positive proposals made by the applicant to provide new, improved or compensatory land or facilities. The loss of playing fields should only be allowed where applicants can demonstrate that they will be replaced with facilities of equivalent or better quantity or quality in a suitable location*" (EN-1, paragraph 5.10.14).	As stated in **Table 6.1** (response to EN-1, paragraph 5.10.6) no loss of open space will occur as a result of Hornsea Four. No assessment on loss is therefore required to determine if such resources are surplus to requirement.

Summary of NPS EN-1 provisions	How and where considered in the ES
"*Ensure that applicants do not site their scheme on the best and most versatile agricultural land without justification. It should give little weight to the loss of poorer quality agricultural land (in grades 3b, 4 and 5)*" (EN-1, paragraph 5.10.15).	Effects on the BMV agricultural land and soil quality are assessed in **Section 6.11**. Minimisation of impacts to BMV agricultural land have been undertaken where possible. However, the predominant land cover within the wider study area is classed as BMV land, and therefore the ability to avoid of BMV land is extremely limited.
"*In considering the impact on maintaining coastal recreation sites and features, the SoS should expect applicants to have taken advantage of opportunities to maintain and enhance access to the coast. In doing so the SoS should consider the implications for development of the creation of a continuous signed and managed route around the coast, as provided for in the Marine and Coastal Access Act 2009*" (EN-1, paragraph 5.10.16).	In line with consultation comments received at PEIR, amendments to the Hornsea Four Order Limits have been made to avoid use of the road used as the primary vehicular access to the beach at landfall (**Volume A1 Chapter 3: Site selection and Consideration of Alternatives**). Impacts of construction that affect recreational use of the coast through temporary disruption to beach access and coastal paths have been assessed and no likely significant effect identified (**Section 6.8.1**). No operational phase effects have been identified. The English Coast path is a designated National Trail which runs along the stretch of coastline affected by the project (i.e. Fraisthorpe Beach). Hornsea Four has recognised this and a specific commitment (Co158) has been included to avoid or minimise impacts on the English Coast path, through site design considerations and phasing within working constraints for the landfall construction. Additionally, a further commitment (Co192) has been included to ensure the beach at landfall will not be closed for public access during construction, unless an unforeseen and unplanned event occurs during which access is required. Furthermore, the Outline Enhancement Strategy (**Volume F2, Chapter 14: Outline Enhancement Strategy**) sets out proposed measures to provide enhancement including improvements to PRoW across the onshore Hornsea Four Order Limits, where feasible.
"*When located in the Green Belt, energy infrastructure projects are likely to comprise 'inappropriate development'. Inappropriate development is by definition harmful to the Green Belt and the general planning policy presumption against it applies with equal force in relation to major energy*	As stated in **Table 6.1** (response to EN-1, paragraph 5.10.10), no areas of designated Green Belt will be affected by Hornsea Four.

Summary of NPS EN-1 provisions	How and where considered in the ES
infrastructure projects. The SoS will need to assess whether there are very special circumstances to justify inappropriate development. Very special circumstances will not exist unless the harm by reason of inappropriateness, and any other harm, is outweighed by other considerations. In view of the presumption against inappropriate development, the SoS will attach substantial weight to the harm to the Green Belt when considering any application for such development while taking account, in relation to renewable and linear infrastructure, of the extent to which its physical characteristics are such that it has limited or no impact on the fundamental purposes of Green Belt designation" (EN-1, paragraph 5.10.17).	
"*Where green infrastructure is affected, the SoS should consider imposing requirements to ensure the connectivity of the green infrastructure network is maintained in the vicinity of the development and that any necessary works are undertaken, where possible, to mitigate any adverse impact and, where appropriate, to improve that network and other areas of open space including appropriate access to new coastal access routes*" (EN-1, paragraph 5.10.20).	No green infrastructure (i.e. multi-functional greenspace networks which supports natural and ecological processes and is integral to the health and quality of life of sustainable communities) has been identified as being affected by Hornsea Four. As stated previously, no open space will be affected post-construction. However, specific assessment on PRoW and access to the coast (including the English Coast Path) has been assessed and no likely significant effect was identified (**Section 6.8.1**).
"*The SoS should also consider whether mitigation of any adverse effects on green infrastructure and other forms of open space is adequately provided for by means of any planning obligations, for example exchange land and provide for appropriate management and maintenance agreements. Any exchange land should be at least as good in terms of size, usefulness, attractiveness and quality and, where possible, at least as accessible. Alternatively, where Sections 131 and 132 of the Planning Act 2008 apply, replacement land provided under those sections will need to conform to the requirements of those sections*" (EN-1, paragraph 5.10.21).	The proposals avoid direct effects (including construction) on open space including parks; ornamental gardens; natural/semi-natural green space; green corridors; amenity green space; sports/playing pitches; allotments; cemeteries / churchyards; and open space provision for young people. Given the lack of potential for direct effects, and with the potential for indirect effects considered to be low, no predicted significant effects on open space and green infrastructure have been identified (**Section 6.7.5**) avoiding the need to secure mitigation via planning obligations. However, commitments to reduce effects on PRoW (Co 79) and the English Coast Path (Co 158) are set out within the Outline PRoW Management Plan, which forms appendix C of the outline Code of Construction Practice (CoCP) (**Volume F2, Chapter 2: Outline Code of Construction Practice**) which is secured by Requirement 17 of the DCO.
"*Where a proposed development has an impact upon a Mineral Safeguarding Area (MSA), the SoS should ensure that*	As stated in **Table 6.1** (response to EN-1, paragraph 5.10.9) impacts on Mineral Safeguarding Areas have been assessed as part of the EIA, as discussed

Summary of NPS EN-1 provisions	How and where considered in the ES
appropriate mitigation measures have been put in place to safeguard mineral resources" (EN-1, paragraph 5.10.22).	in Chapter 1: Geology and Ground Conditions of the PEIR (Orsted 2019a) and confirmed in **Volume A4, Annex 5.1: Impacts Register**, and no likely significant effect was identified.
"*Where a project has a sterilising effect on land use (for example in some cases under transmission lines) there may be scope for this to be mitigated through, for example, using or incorporating the land for nature conservation or wildlife corridors or for parking and storage in employment areas*" (EN-1, paragraph 5.10.23).	The OnSS will sterilise land use throughout its operational life resulting in a small loss of agricultural resource. Permanent disruption / reduction of land (LUA-O-6) has been scoped out of the assessment (as agreed by PINS in their scoping opinion (PINS 2018)) subject to inclusion of a CoCP (Co124) due to no likely effect being determined.
"*Rights of way, National Trails and other rights of access to land are important recreational facilities for example for walkers, cyclists and horse riders. The SoS should expect applicants to take appropriate mitigation measures to address adverse effects on coastal access, National Trails and other rights of way. Where this is not the case the SoS should consider what appropriate mitigation requirements might be attached to any grant of development consent*" (EN-1, paragraph 5.10.24).	Assessment of rights of access have been were assessed as part of the EIA, as set out in the PEIR (Orsted, 2019b) and confirmed in **Volume A4, Annex 5.1: Impacts Register**, and no likely significant effect was identified (further detail is provided in **Section 6.8.1**). It should be noted that **Chapter 7: Traffic and Transport** assesses impacts on pedestrians using paths alongside the highway network but not specifically users of other rights of way, trails, and other access. Additionally, a further commitment (Co192) has been included to ensure the beach at landfall will not be closed for public access during construction, unless an unforeseen and unplanned event occurs during which access is required. Long-term diversions for PRoW routes were agreed with ERYC in October 2019, refer to the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**).

6.3.1.4 NPS EN-1 states at paragraph 4.1.5 that:

> "*Other matters that the Secretary of State may consider important and relevant to its decision-making may include Development Plan Documents or other documents in the Local Development Framework. In the event of a conflict between these or any other documents and an NPS, the NPS prevails for the purposes of SoS decision making given the national significance of the infrastructure*".

6.3.1.5 **Table 6.3** provides details of the regional and local planning policy documents and the policies contained within these relevant to land use and agriculture.

Table 6.3: Summary of regional and local planning policies relevant to land use and agriculture.

Document	Policy / Guidance	How and where considered in the ES
East Riding Yorkshire Local Plan Strategy Document (April 2016)	S8: Connecting people and places *"Existing and disused public transport, cycling and footpath networks and facilities, including Public Rights of Way (PRoW), will be enhanced and/or protected, particularly within and linking to the Major Haltemprice Settlements, Principal Towns, and Towns."*	Effects on cycling and footpath networks were assessed as part of the EIA, as set out in the PEIR (Orsted, 2019b) and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**), and no likely significant effect was identified (see further at **Section 6.8.1**). Furthermore, the Outline Enhancement Strategy (**Volume F2, Chapter 14: Outline Enhancement Strategy**) includes proposed measures to provide enhancement, including improvements to PRoW across the onshore Hornsea Four Order Limits, where feasible.
	C3: Providing public open space for leisure and recreation *"Proposals should maintain and/or enhance the quantity, quality and accessibility of open space and address any shortfalls in provision".*	The proposals avoid direct effects (including construction) on open space including parks; ornamental gardens; natural/semi-natural green space; green corridors; amenity green space; sports/playing pitches; allotments; cemeteries / churchyards; and open space provision for young people. Given the lack of potential for direct effects, and with the potential for indirect effects considered to be low, no predicted significant effects on open space and green infrastructure have been identified (**Section 6.7.5**) avoiding the need to secure mitigation via planning obligations. An assessment on the impact of PRoW was assessed as part of the EIA, as set out in the PEIR (Orsted

Document	Policy / Guidance	How and where considered in the ES
		2019b) and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**), and no likely significant effect was identified (see further at **Section 6.8.1**).
	A2: Bridlington Coastal sub area *"Sensitively maintain the character of the undeveloped coast, particularly the Flamborough Heritage Coast, and improve public access to, and enjoyment of, the coast, ensuring that development proposals protect and enhance its distinctive landscape, conservation initiatives and the quality of the natural environment."*	Effects on public access to the coast were assessed as part of the EIA, as set out in the PEIR (Orsted, 2019b) and confirmed in **Volume A4, Annex 5.1: Impacts Register**, and no likely significant effect was identified (**Section 6.8.1**). Additionally, a further commitment (Co192) has been included to ensure the beach at landfall will not be closed for public access during construction, unless an unforeseen and unplanned event occurs during which emergency access is required. Long-term diversions for coastal access routes were agreed with ERYC in October 2019 (ON-HUM-3.6), refer to the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**).

6.4 Consultation

6.4.1.1 Consultation is a key part of the DCO application process. Consultation regarding land use and agriculture has been conducted through Evidence Plan Technical Panel meetings, the EIA scoping process (Orsted 2018) and formal consultation on the PEIR under Section 42 of the 2008 Act. An overview of the project consultation process is presented within **Volume A1, Chapter 6: Consultation**. Agreements made with consultees within the Evidence Plan process are set out in the topic specific Evidence Plan Logs which are appendices to the Hornsea Four Evidence Plan (**Volume B1, Annex 1.1: Evidence Plan**), an annex of the Hornsea Four Consultation Report (**Volume B1, Chapter 1: Consultation Report**). All agreements within the Evidence Plan Logs have unique identifier codes which have been used throughout this document to signpost to the specific agreements made (e.g. ON-HUM-1.1).

6.4.1.2 A meeting to specifically discuss PRoW was held with ERYC in October 2019. This meeting discussed the potential impacts on specific PRoW routes, the requirements for stopping-up and/or diversions of PRoWs, as well as matters such as PRoW diversion and signage principles to be included in the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**).

6.4.1.3 A summary of the key issues raised during consultation specific to land use and agriculture is provided in **Table 6.4** together with how these issues have been considered in the production of this ES.

Table 6.4: Consultation responses.

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
PINS	23 November 2018, Scoping Opinion	Temporary disruption of coastal recreational use: construction phase. *"The Scoping Report does not provide an accurate estimate of the duration of the construction works which will affect coastal recreational use, however Figure 3.7 indicates works could be ongoing for a month or more in two successive years. It is noted that Co79 (Commitment) intends to deliver mitigation in the form of Public Right of Way (PRoW)/footpath diversions however; the nature and extent of this are not known. Given the scale of the works at the landfall location the Inspectorate considers that significant effects during construction could arise, and considers that the ES should provide an assessment of effects on coastal recreational receptors."*	Details on Hornsea Four and duration of works for construction are included in **Volume A1, Chapter 4: Project Description**. The total duration of the landfall compound and construction works will be 32 months. An assessment of such temporary disruption has been undertaken as part of the EIA, as set out in the PEIR (Orsted, 2019b) and confirmed in **Volume A4, Annex 5.1: Impacts Register**, and no likely significant effect was identified (**Section 6.8.1**). Co192 ensures the beach at landfall will not be closed for public access during construction, unless an unforeseen and unplanned event occurs during which access management is required.

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
			Long-term diversions for coastal access routes were agreed with ERYC in October 2019 (ON-HUM-3.6), refer to the Outline PRoW Management Plan, which form append C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**)
PINS	23 November 2018, Scoping Opinion	Temporary disruption from reduction of land: decommissioning phase *"While it is accepted that the cabling will remain in situ and that relatively minimal areas of land will be affected by decommissioning the above ground structures of the Proposed Development, the Scoping Report does not indicate the duration of the decommissioning phase. The Inspectorate considers that these works may be of sufficient duration to give rise to significant effects, and therefore does not agree that this matter can be scoped out of the ES based on the current information."*	Details on Hornsea Four and duration of works for the decommissioning phase are included in **Volume A1, Chapter 4: Project Description.** A proportionate assessment was undertaken as part of the EIA, as set out in the PEIR (Orsted 2019b) and confirmed in **Volume A4, Annex 5.1: Impacts Register** and no likely significant effect was identified (further information is presented in **Section 6.8.1**).
PINS	23 November 2018, Scoping Opinion	Cumulative land and agriculture effects: onshore construction *"While it is appreciated that these effects will be temporary, given the large scale of the Proposed Development and other developments identified in Section 8 the Inspectorate considers that significant effects could occur if developments affect the same geographical area and in temporal extent. This might be when impacts are sequential or overlapping. The Inspectorate would expect to see an assessment in the ES where significant effects could occur."*	Consideration on any cumulative effects on the land during construction is detailed in **Section 6.12**.

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
Public Health England	23 November 2018, Scoping Opinion	*"Within the land use assessment any impacts on access to publicly accessible open space must be identified and mitigation measures identified. Where open space will require restoration the mitigation measures must identify the quality of the natural environment to be achieved and measures to promote access across the life course."*	Potential direct effects on publicly accessible land were assessed as part of the EIA, as set out in the PEIR (Orsted 2019b) and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**), and no likely significant effect was identified (see further at **Section 6.8.1**). Co192 ensures the beach at landfall will not be closed for public access during construction, unless an unforeseen and unplanned event occurs during which access management is required.
Natural England	23 November 2018, Scoping Opinion	*"Soils should be considered in line with Paragraph 112 of the NPPF.* *The applicant should consider the following issues as part of the Environmental Statement:* *1. The degree to which soils are going to be disturbed/harmed as part of this development and whether 'best and most versatile' agricultural land is involved. This may require a detailed survey if one is not already available. For further information on the availability of existing agricultural land classification (ALC) information see www.magic.gov.uk. Natural England Technical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land also contains useful background information.*	It should be noted that PINS agreed to scope out the effect of soil compaction during construction in their Scoping Opinion (PINS Scoping Opinion November 2018, ID:4.13.4) (as detailed in **Chapter 1: Geology and Ground Conditions**). Effects on the BMV agricultural land and soil quality are assessed in **Section 6.11**. Assessment has been undertaken using publicly available agricultural land classification (ALC) data. While this data does not distinguish between Grade 3a and 3b ALC land, assessments have been based on the assumption that all Grade 3 land within the available ALC data is 3a (not 3b) – thereby falling in to the BMV category. This is a highly

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
		2. If required, an agricultural land classification and soil survey of the land should be undertaken. This should normally be at a detailed level, e.g. one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres. *3. The Environmental Statement should provide details of how any adverse impacts on soils can be minimised. Further guidance is contained in the Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites."*	conservative and protective approach which over-estimates the area of BMV land. As such it is considered that ALC surveys are not required. See **Section 6.7.8** for comments on Data Limitations and **Section 6.11** for effects on the BMV agricultural land and soil quality.
Natural England	23 November 2018, Scoping Opinion	*"Traffic and transport will assess the impact on PRoW and non-designated access routes during construction, this should include the England Coast Path."*	Potential effects on PRoW, including the England Coast Path and other non-designated access routes, , were assessed as part of the EIA, as set out in the PEIR and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**), and no likely significant effect was identified (see further at **Section 6.8.1**). Potential impacts on access routes during construction are discussed in **Chapter 7: Traffic and Transport** assessing impacts on pedestrian delay and amenity, with mitigation measures, if necessary, set out in the Construction Traffic Management Plan, which forms appendix F of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**) (Co144).
Berwick Parish Council	September 2019, Section 42, Response to PEIR	*"several C-class roads crossed by the cable corridor are used to connect PROWs or to access PROWs that intersect the highway"*	All main roads will be crossed by Horizontal Directional Drilling (HDD) (Co1).

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
		"although these roads are open to motorised traffic, users include pedestrians and horse riders. Of particular interest to Beswick Parish Council are the proposed crossings (by HDD) of Wilfholme Lane and Barfhill Causeway. Other interests lie in adjacent parishes, particularly Carr Lane, Watton, and Station Road, Lockington"	**Chapter 7: Traffic and Transport** assesses impacts on pedestrian delay and amenity, with mitigation measures, if necessary, set out in the Outline Construction Traffic Management Plan, which forms appendix F of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**) (Co144).
ERYC	September 2019, Section 42, Response to PEIR	*"The temporary closures and diversions outside of the DCO will need consultation with parish councils and user groups before applying for the order two months prior to required commencement."*	A PRoW specific meeting was held with ERYC in October 2019 to agree requirements for temporary diversions and the stopping up of PRoW. Details of which are presented in the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**).
JLAF	September 2019, Section 42, Response to PEIR	*Skidby Footpath No. 16.* *"The Consultation Document (Volume 3, Chapter 6) appears dismissive of the value of this PRoW"* *"designation of PROWs as part of a national or regional route does not make them more important and that local usage is often more intense for daily exercise, health (both physical and mental) and enjoyment of the countryside"*	The value of all PRoW for physical activity and access to the countryside are recognised and Skidby Footpath 16 has been discussed with ERYC as an important and valued receptor. Further details regarding the permanent diversion of Skidby Footpath No.16 are available in the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**) (ON-HUM-1.3).

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
JLAF	September 2019, Section 42, Response to PEIR	*"JLAF notes with concern what appears to be an omission of consideration of the impact on Woodmansey Bridleway No. 30 of the access road to the Onshore Substation (Temporary Works) from the A1079 "* *"JLAF asks for clarification of proposals regarding diversion of this bridleway which connects with Rowley Bridleway No.13, the western end of which also appears to be affected by an access road to the cable corridor."*	Woodmansey Bridleway No. 30 and Rowley Bridleway No.13 will be affected by the access road to the OnSS. A PRoW specific meeting was held with ERYC in October 2019 to agree requirements for a diversion. Details are available in the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**) (ON-HUM-3.7). The Applicant is aware that a planning application has been approved by ERYC for the Jocks Lodge development (Planning Application Reference: 20/01/0731/ST/ELF). The development will not impact the diversion of Rowley Bridleway No. 13 as a result of Hornsea Four.
JLAF	September 2019, Section 42, Response to PEIR	*"The National Planning Policy Framework (paragraph 98) states that 'Planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users'"* *"Given the inevitable disruption to the PROW network during project delivery, JLAF is disappointed that the scope for potential enhancements to the network – in accordance with paragraph 98 - is not strongly evident within the PEIR (Volume 3, Chapter 6)."*	During reinstatement of PRoW, opportunities will be explored for the provision of improved wayfinding signage within the order limits (**See Volume F2, Chapter 14: Outline Enhancement Strategy**), and will be reinstated in accordance with the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**).

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
		"It is however acknowledged that enhancements could potentially be delivered through the allocation of Section 106 (or other similar) funding specifically relating to rights of way and public access, and JLAF therefore requests the provision of such funding for this project to mitigate the negative impacts and ensure that PROW enhancements are delivered"	The permanent diversion of Skidby Footpath No.16 will be incorporated into the additional landscaping to be provided west of the OnSS (**See Volume F2, Chapter 14: Outline Enhancement Strategy**).
Natural England	September 2019, Section 42, Response to PEIR	*Sections 6.6.2.1 and 6.7.3.7* *"An ALC soil survey has not been carried out and this does not comply with para 170 of the NPPF. Natural England clearly stated that a detailed survey of ALC soils should be carried out where other data is not already available. Without an ALC survey it is impossible to show whether the route sustainable for BMV soils. As shown by the phase 1 survey, around 373 ha of arable land will be affected by the project, which is well in excess of the 20ha standard for assessment of BMV soils."* *Table 6.7; ALC Map [Figure 6.2]* *"Shows that a large part of the project goes through some of the BMV soils in the area."* *Table 6.14* *"The table uses the division between Grades 3a and 3b for very high and high sensitivity. But this data is not available to make that assessment."*	NPPF paragraph 170 does not prescribe the undertaking of any particular types of survey (including ALC soil surveys). This paragraph states that, *"protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)"*. The paragraph also states that, *"Planning policies and decisions should contribute to and enhance the natural and local environment by"* a range of factors, including (but not restricted to): *"recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland"*. Assessment has been undertaken using publicly available ALC data. While this data does not distinguish

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
			between Grade 3a and 3b ALC land, assessments have been based on the assumption that all Grade 3 land within the available ALC data is 3a (not 3b) – thereby falling in to the BMV category. This is a highly conservative and protective approach which over-estimates the area of BMV land. See **Section 6.7.8** for comments on Data Limitations and **Section 6.11** for effects on the BMV agricultural land and soil quality.
Natural England	September 2019, Section 42, Response to PEIR	*Section 6.11.1.14* *"This assessment is incorrect. It is clear that the sensitivity is very high and the magnitude is at least minor. From the matrix in Table 6.16 this produces a Moderate to Major Significant effect. It cannot be said that the impact is localised (it goes through 373ha of arable land over a large LPA) and it has the potential to change workability/land use as a linear feature could impede the temporary working of the farm."*	Some of the definitions within **Table** 6.16 have been updated since the PEIR to differentiate between permanent, medium-term and short-term loss of BMV soils. This has been undertaken to better define the magnitude of effect. Reassessment using these updated definitions has been undertaken. Development of a CoCP (based on **Volume F2, Chapter 2: Outline CoCP**) (Co124) to minimise disruption to land users (including farmers) will be implemented to assist farmers in accessing and cultivating land outside of the direct onshore ECC footprint as far as possible.

Consultee	Date, Document, Forum	Summary of comment(s) received	Where addressed in the ES
Natural England	September 2019, Section 42, Response to PEIR	*"The assessment has not mentioned whether the imported backfill material (in section 4.10.1.27 of Volume 1, Chapter 4: Project Description) will affect any of the BMV soils after restoration. It is unclear if this will degrade any BMV soils."*	Soil condition surveys and intrusive soil survey trial pits will take place to identify and describe the physical and nutrient characteristics of the existing soil profiles (Co 61). Such work will inform the reinstatement under Co10 relating to the sustainable use of soils and maximise the potential for quick recovery of BMV soils post-construction. Further details are provided in the Outline Soil Management Strategy, which forms appendix B of **Volume F2, Chapter 2: Outline CoCP.**
Natural England	September 2019, Section 42, Response to PEIR	*"Target burial depth of 1.2 m is probably reasonable for re-instatement, but it is only a target. Depths less than this may impact on BMV soils."*	Cables will be installed to a target depth of 1.2 m below the existing surface level of the ground, which is the project Maximum Design Scenario (MDS). Cables will not be buried at a depth that impedes future farming operations. Individual variations to this target depth will be agreed with landowners through the heads of terms process.

6.5 Study area

6.5.1.1 The study area for the land use and agriculture assessment is shown on **Figure 6.1**, and includes the onshore Hornsea Four Order Limits, and:

- All receptors within 1 km of:
  - Landfall (including logistics compounds and connection works areas);
  - Onshore ECC (including temporary works areas); and
  - The OnSS (including permanent and temporary storage areas, EBI and the 400kV ECC search area to connect into the NGET Creyke Beck substation.

6.5.1.2 The land use and agriculture study area at Scoping and PEIR included all receptors within and up to 5 km from the Hornsea Four project footprint due to potential visual effects on recreational receptors. However, for the ES, the study area has been refined to 1 km. While

this change has not been agreed with relevant stakeholders, it is considered that a 1 km boundary is sufficient given the limited significant impacts identified through the EIA, as presented in the Scoping Report (Orsted 2018) and PEIR (Orsted 2019b). The potential for only direct impacts on land use and agriculture has been identified and therefore 1 km reflects the maximum potential distance within which the impacts on land use and agriculture have the potential to be significant.

6.5.1.3 An assessment on the onshore landscape and visual receptors, including an assessment of visual impact on recreational receptors, is set out in **Chapter 4: Landscape and Visual**.

500000

520000

460000

440000

N

GRID
NORTH

Barmston

Lissett

Foston on
the Wolds

Brigham

Rotsea

Scorborough

Leconfield

Cherry
Burton

Bishop
Burton

Beverley

Woodmansey

Bridlington
Bay

Hornsea

Driffield

Yorkshire Wolds

Kingston upon Hull

Date: 14/07/2021

Author: 303273

Name: HOW04RH0004_LocationPlan

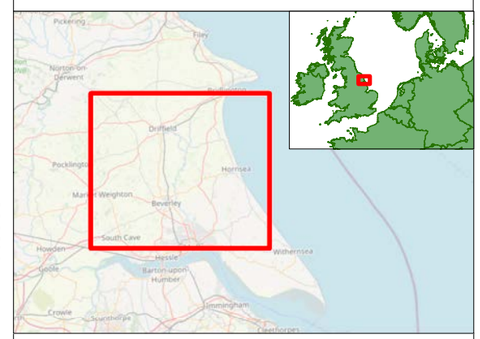
Hornsea Four

Figure 6.1

Land Use and Agriculture
Study Area

Order Limits

1 km Study Area



Coordinate system: British National Grid

Scale@A3: 1:140,000

0 1.25 2.5 5 Kilometres

0 0.75 1.5 3 Miles

REV	REMARK	DATE
	First Issue for PEIR	09/07/2019
A	Updated following PEIR consultations, for DCO	14/07/2021

Title: Land Use and
Agriculture Study Area
Document no: HOW04RH0004
Created by: AZ
Checked by: CT
Approved by: PS

Royal HaskoningDHV

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6.6 Methodology to inform baseline

6.6.1 Desktop Study

6.6.1.1 A desk study was undertaken to obtain and collate information and data on the current land use and agriculture practices (including soil resources) across the land use and agriculture study area (as defined in Paragraph 6.5.1.1). The sources of information used to obtain this information is presented in Table 6.5.

Table 6.5: Key sources of land use and agriculture data.

Source	Summary
EMAP Website	Utilities Search (gas and oil pipelines, mains water and sewage, telecoms and fibre-optic cables) (https://www.groundsure.com/report/reportutility)
ERYC	Definitive map of PRoW; and East Riding of Yorkshire Landscape Character Assessment 2018 (Aecom, 2018)
ERYC Core Strategy and Development	ERYC Local Plan Strategy Document (April 2016); and Holderness District Wide Local Plan (adopted 1999)
Google Maps	Publicly available aerial imagery
Historic England	Registered Parks and Gardens
National Soil Resources Institute (NSRI) Cranfield University	Soil Classification (www.magic.defra.gov.uk)
NE	ALC (www.magic.defra.gov.uk)
	Countryside Environmental Stewardship Schemes (2016) Management Areas (www.magic.defra.gov.uk)
	CRoW Act (2000) Registered Common Land (www.magic.defra.gov.uk)
	English Coast Path Routes (www.magic.defra.gov.uk, (www.gov.uk/environment/access-to-the-countryside) England Coast Path: Easington to Filey Brigg - Natural England's Proposals. Chapter 3: Hornsea to Wilsthorpe, 2018. (Natural England, 2018)
North and East Yorkshire Ecological Data Centre	Local Wildlife Sites (LWS)
Ordnance Survey (OS) 1:10,000 scale mapping	Transport networks including roads and railway lines plus urban areas
APEM Ltd.	High-resolution (3 cm) aerial photography data
OS Address Base Premium	Addresses, properties and land areas.
OS Greenspace	Designated and non-designated public access areas.

6.6.2 Site Specific Surveys

6.6.2.1 The desk-based data identified in **Table 6.5** is sufficiently comprehensive to underpin this ES assessment. Specific walkover surveys of all PRoW routes that cross the Hornsea Four Oder Limits was undertaken in September and October 2019. The findings of which have been used to inform the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**), the findings of which have been incorporated into **Section 6.7** of this chapter.

6.6.2.2 Additionally, as part of the Extended Phase 1 Habitat Survey (EP1HS) (**Volume A6, Annex 3.1: Extended Phase 1 Habitat Survey Report Part A** and **Volume A6, Annex 3.2: Extended Phase 1 Target Note Tables Part B**) notes were made in relation to the land use, habitats and recreational uses of the land, as well as footpaths in order to ground truth desk-based data and identify any specific receptors in proximity to the project area that needed to be taken account of. This survey area included all habitats within the onshore Hornsea Four Order Limits, plus an additional 50 m buffer.

6.6.2.3 A summary of the surveys undertaken to inform the baseline presented in this chapter is provided in **Table 6.6**.

Table 6.6: Summary of site-specific survey data.

Title and year	Summary	Coverage of Hornsea Four development area
Hornsea Four EP1HS, 2019 and 2021	A walkover survey was undertaken as part of EP1HS to ground truth findings from the desk-based study between 6 and 15 February 2019 and between 4 and 13 September 2019. As part of this survey effort land use was noted to support the primary focus of identifying ecological habitats (e.g. relating to crops harvested and farming land).	100% coverage of the Hornsea Four Order Limits.
Hornsea Four PRoW and Recreation survey, 2019	Walkover surveys were undertaken to predominantly characterise PRoW crossings within the Hornsea Four Order Limits on the 4 and 30 September 2019 and the 1 October 2019. Notes were also taken to identify recreational receptors (e.g. golf courses, parks, play areas etc.) within the land use and agriculture study area.	Approximately 85 % coverage of PRoW crossings within the Hornsea Four Order Limits.

6.7 Baseline environment

6.7.1 Existing baseline

6.7.1.1 The information presented in this section has drawn on the findings obtained during the desk-based data collection exercise and the findings of the walkover surveys undertaken in February, September and October 2019. To aid the characterisation of the baseline environment, a description of the baseline has been made using the following classifications:

- **Agriculture**: identifies the agricultural land cover and where applicable describes the crop being grown. This baseline also includes details of the (ALC which provides a description of the grades of land found within the land use and agriculture study area in the context of its versatility and suitability for growing crops;
- **Soil Types and Distribution**: identifies the soil found within the land use and agriculture study area including texture, type, geology and fertility;
- **Stewardship Schemes**: identifies and describes any land or agri-environment schemes present in the land use and agriculture study area;
- **Land Use and Recreation**: identifies high level land use with specific identification of any recreational receptors; and,
- **Public Rights of Way (PROW) and Cycle Routes**: identifies all such designated routes within the land use and agriculture study area.

6.7.1.2 The description of the baseline conditions provided in the subsequent sections has been divided into the following three development footprint areas:

- Landfall (including accesses);
- Onshore ECC (including compounds and accesses); and
- OnSS and EBI site (including associated 400 kV NGET connection search area and temporary and permanent accesses).

6.7.2 Agriculture

6.7.2.1 Agriculture in the Yorkshire and Humber region is primarily arable (including arable crops, permanent grassland and temporary grass). The average farm size of 90 ha is slightly greater than the English average of 85 ha. Cereal farming predominates, with wheat, barley and oil seed rape as common crops. Alongside cereal farming, root crops, potatoes and field vegetables are grown. Some livestock farming is also present in the region, principally cattle, pigs, poultry and sheep (Defra 2016).

6.7.2.2 The walkover surveys from February and September/October 2019 confirmed that the majority of land within the land use and agriculture study area comprised arable land. At the time of the February surveys these areas were predominantly sewn with winter crop (such as *Brassica spp.*), ploughed, or under winter cover. For further details on the current agricultural land use and associated crops, reference should be made to **Volume A6, Annex**

3.1: Extended Phase 1 Habitat Survey Report Part A and Volume A6, Annex 3.1: Extended Phase 1 Habitat Survey Report Part B.

6.7.2.3 The ERYC Landscape Character Assessment (Aecom 2018) has been used to identify the key characteristics of agricultural land within the land use and agriculture study area. The study area includes six Landscape Character Types (LCTs), which are all defined as types of farmland, as listed in Table 6.7 and illustrated on Figure 6.2.

Table 6.7: Landscape character types and a summary of their key agricultural characteristics within the Hornsea Four land use and agriculture study area.

Landscape Character Type	Key characteristics
13 Open High Rolling Farmland	• *"Elevated rolling landform of the Yorkshire Wolds dip slope falling east;* • *Large and very large rectilinear regular arable fields;* • *Fragmented hedgerows that are severely clipped; and* • *Very few trees resulting in an open landscape."*
16 Sloping Farmland	• *"Gently rolling landform sloping gradually down to the east;* • *Intermittent scattered woodland blocks throughout;* • *Intensively farmed rectilinear arable fields of large to medium size, interspersed with less regular early enclosure fields particularly around villages; and* • *Hedgerow trees in places."*
17 Farmed Urban Fringe	• *"Gently undulating to flat landform generally below 20m AOD;* • *Strong urban influences encroaching into rural areas;* • *Hedgerow boundaries around medium to large sized fields;* • *Mixed land use combining agriculture, horticulture and recreation; and* • *Neglected appearance of some fields and hedgerows."*
18 Low Lying Drained Farmland	• *"Flat, low lying flood plain generally below 10m AOD;* • *Sparse tree and woodland cover; and* • *Rectilinear field systems with hedgerow and drainage ditch boundaries."*
19 Open Farmland	• *"Gently undulating topography, hummocky in places;* • *Very open landscape with few trees overall;* • *Irregular field pattern of pre-parliamentary enclosure;* • *Hedgerow field boundaries with few trees; and* • *Intensive farmed arable landscape."*
20 Coastal Farmland	• *"Flat to gently undulating topography sloping gently eastwards; and* • *Fragments of historic field pattern around villages and hamlets."*

6.7.2.4 Across England and Wales, the ALC has been implemented to classify agricultural land on a regional level in terms of both its quality and versatility. The ALC classification is presented as a national strategic map and divided into five grades (MAFF 1988) as well as 'Non-Agricultural' and 'Urban' land.

6.7.2.5 The BMV agricultural land are classified as: Grades 1, 2 and 3a. These comprise land that is most flexible, productive and efficient in response to inputs and can best deliver future crops for food and non-food uses such as biomass, fibres and pharmaceuticals. ALC grades 3b, 4 and 5 are considered less productive, although land designated as such may hold value in relation to nature conservation and landscape interests.

6.7.2.6 The ALC underpins the principles of sustainable development, and is used by Defra, and others, for determining the quality of farmland and providing advice to local planning authorities, developers and the public if a development is proposed on agricultural land or other 'greenfield' sites that could grow crops.

6.7.2.7 Using data from Natural England, **Figure 6.3** shows the location of ALC within the land use and agriculture study area. No differentiation is made within this data set between ALC Grades 3a and 3b, therefore, further consideration of this information in this chapter has assumed all ALC Grade 3 is classified as 3a, therefore conforming to the description of BMV agricultural land. This assumption is reinforced as being reasonable as ERYC's Land Management Action Plan (ERYC 2011) identifies that more than 90% of ERYC's agricultural land is considered of excellent or good quality (ALC Grades 2 and 3a).

6.7.2.8 The Hornsea Four Order Limits characterises a series of contrasting ALC grades. The assessment presented in this chapter focusses only on direct effects to ALC land within the Hornsea Four Order Limits. Indirect effects on ALC land in the wider land use and agriculture study area are not considered to be significant. ALC Grade 2 covers 67.87 % of the total onshore Hornsea Four Order Limits, followed by Grade 3 covering 30.03 % (see **Figure 6.3** and **Table 6.8**).

6.7.2.9 It should be noted that within the wider ERYC jurisdiction, both Grade 2 and Grade 3 land represents a substantial coverage of land (42.84 % and 43.70 % respectively).

Table 6.8: ALC classifications within the Hornsea Four Order Limits.

ALC Grade	Landfall (including accesses)		Onshore ECC (including logistics compounds and accesses)		OnSS and 400 kV NGET connection area (including permanent accesses)		Hornsea Four Order Limits	
	(Ha)	*(%)*	*(Ha)*	*(%)*	*(Ha)*	*(%)*	*(Ha)*	*(%)*
1	0	0 %	0	0 %	0	0 %	0	0 %
2	16.73	39.64 %	233.51	66.69 %	52.97	100 %	300.85	67.87 %
3	17.26	40.90 %	115.54	33.00 %	0	0 %	133.10	30.03 %
4	0	0 %	0	0 %	0	0 %	0	0 %
5	0	0 %	0	0 %	0	0 %	0	0 %
No ALC grading	8.21	19.45 %	1.11	0.32 %	0	0 %	9.34	2.11 %
Total	42.20	100 %	350.16	100 %	52.97	100 %	443.29	100 %

Note: The grey shaded rows (ALC grades 1 – 3) denote the BMV agricultural land with an assumption that all Grade 3 land is 3a (not 3b). This is a highly conservative and protective approach which over-estimates the area of BMV land.

Landfall

6.7.2.10 Grade 3 soils comprise 40.90 % of the total order limits for the landfall area (not including the beach), with Grade 2 soils accounting for 39.64 % of the total landfall area (**Table 6.8**).

It should be noted that the landfall compound area will be a maximum of 4 ha within the order limits.

Onshore ECC

6.7.2.11 The order limits for the onshore ECC area is predominantly comprised of both ALC Grades 2 (66.69 %) and 3 land (33.00 %), covering a combined area of 349.05 ha (**Table 6.8**). This represents 0.23 % and 0.11 % of all Grade 2 and 3 land respectively within the wider ERYC jurisdiction.

6.7.2.12 Grade 2 land predominates the order limits of the onshore ECC to the south of Scorborough, with further Grade 2 areas near Foston on the Wolds and the section of the order limits of the onshore ECC closest to landfall.

6.7.2.13 Cottingham and Beverley are both defined as 'Urban' land by the ALC and comprise 4.91 % of the total ALC within the jurisdiction of ERYC. Areas of 'Non-Agricultural' land also exist within the land use and agriculture study area, notably to the immediate west of Beverley due to the presence of Beverley and East Riding Golf Course and Beverley Racecourse.

OnSS and 400 kV NGET connection area

6.7.2.14 The land within the order limits at the OnSS (including temporary works area and, permanent access track and 400kv NGET connection search area) comprises entirely of ALC Grade 2 land covering an area of 52.97 ha, which comprises 0.05 % of the total ALC Grade 2 within the ERYC boundary. The permanent works areas of the Hornsea Four Order Limits represent an area of 18.91 ha. It should be noted that almost all of the land within the land use and agriculture study area surrounding the OnSS area is ALC Grade 2 (see **Figure 6.3**) making avoidance of such BMV land impossible considering the footprint requirement of the OnSS.

Hornsea Four
Figure 6.2
Landscape Character Areas

500000 520000 460000 440000

N
GRID NORTH

14A 14B 14C 14D 15C 16A 16B 16C 16D 16E 16F 17A 17B 17C 18A 18B 18C 18D 18E 18F 19A 19B 19C 19D 20B 20C 10A 10B 10D 10G 10H 11A 11B 11C 12A 13A 13B 13C 13D 1A 6B 7B 8B 9D 21D

Yorkshire Wolds
Vale Of York
Holderness
Humberhead Levels
Humber Estuary

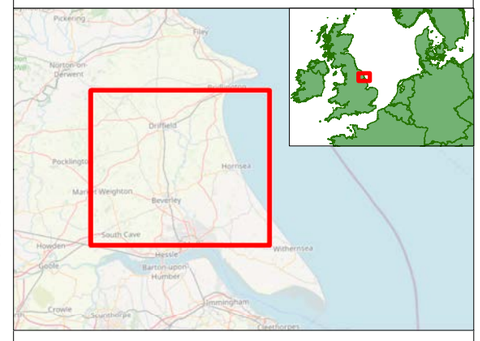
Barmston
Lissett
Foston on the Wolds
Brigham
Rotsea
Scorborough
Leconfield
Cherry Burton
Bishop Burton
Beverley
Woodmansey

Bridlington Bay

Order Limits
1 km Study Area
National Character Area

East Riding of Yorkshire
Landscape Character Areas

- Urban
- 1: Flat Open Farmland
- 6: Wooded Open Farmland
- 8: M62 Corridor
- 10: Complex Incised Sloping Wooded Farmland
- 11: Jurassic Hills Farmland
- 12: Sloping Wooded Farmland
- 13: Open High Rolling Farmland
- 14: Central Dissected Plateau
- 15: Wolds Valley Farmland
- 16: Sloping Farmland (Edge of Wolds)
- 17: Farmed Urban Fringe
- 18: Low Lying Drained Farmland
- 19: Open Farmland
- 20: Coastal Farmland



Coordinate system: British National Grid
Scale@A3: 1:140,000
0 1.25 2.5 5 Kilometres
0 0.75 1.5 3 Miles

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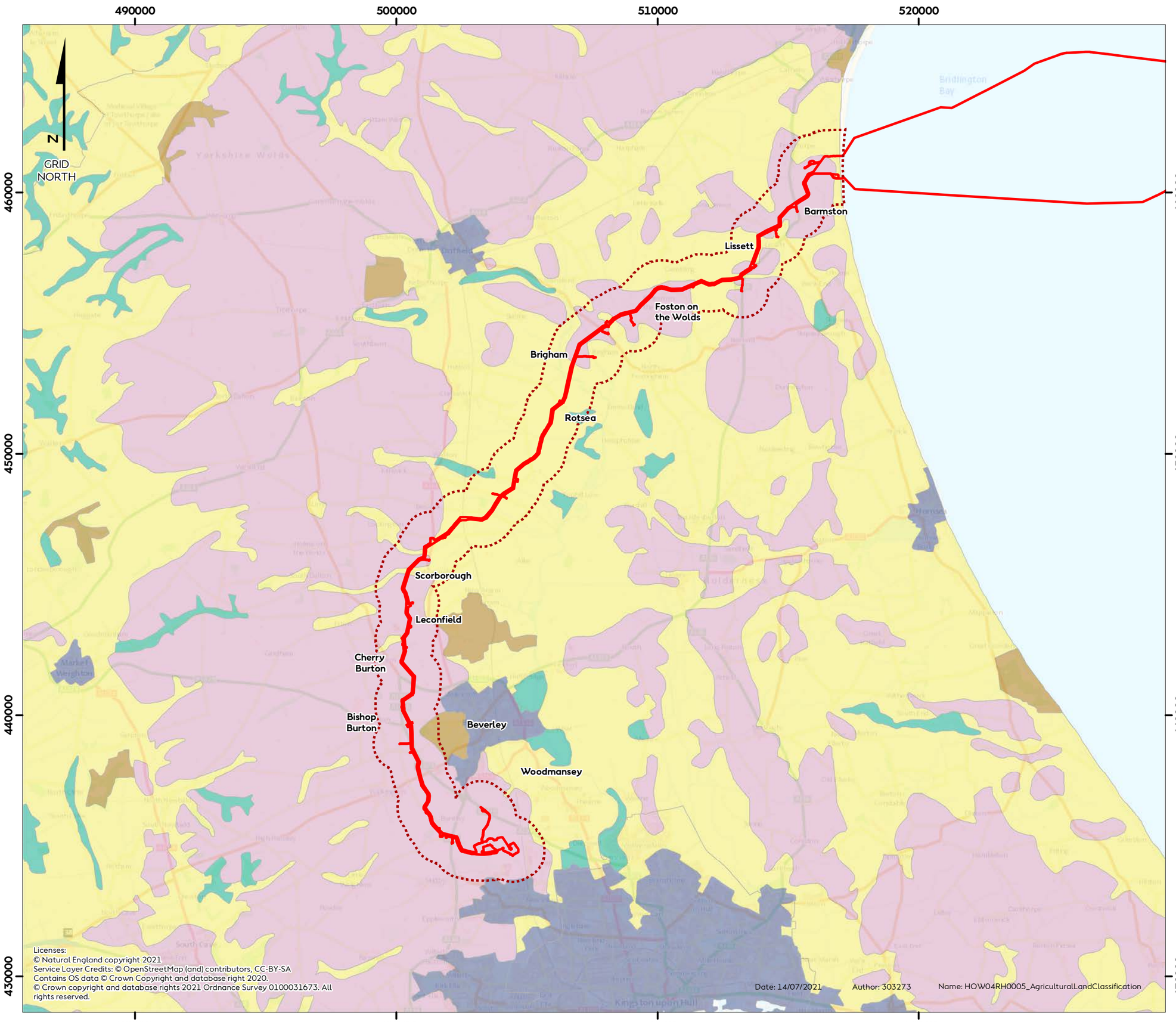
Royal HaskoningDHV
Ørsted

Date: 14/07/2021 Author: 303273 Name: HOW04RH0106_LandscapeCharacterArea

Hornsea Four

Figure 6.3

Agricultural Land Classifications

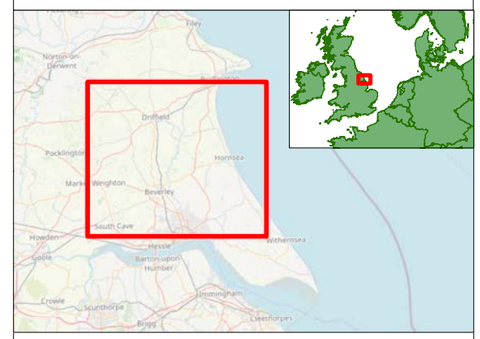


Order Limits

1 km Study Area

Agricultural Land Classification Grade

- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Non Agricultural
- Urban



Coordinate system: British National Grid

Scale@A3: 1:140,000

0 1.25 2.5 5 Kilometres

0 1.25 2.5 5 Miles

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6.7.3 Soil Types and Distribution

6.7.3.1 This section provides a description of the soil types within the land use and agriculture study area and has been informed using classifications taken directly from the NSRI (Table 6.9).

6.7.3.2 The Hornsea Four Order Limits characterises a series of contrasting soil profiles as listed in Table 6.9. The soils along the onshore ECC and within the OnSS range from low to high fertility (without the addition of fertilizers) and low to moderate fertility at the landfall.

Table 6.9: Soil types within the Hornsea Four land use and agriculture study area.

Soil type	Typical habitats	Land cover	Texture	Drainage type	Natural fertility	Expected crops	Distribution of Soils
Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Seasonally wet pastures and woodlands	Grassland and arable some woodland	Loamy and clayey	Impeded drainage	Moderate	Mostly suited to grass production for dairying or beef; some cereal production often for feed. Timeliness of stocking and fieldwork is important, and wet ground conditions should be avoided at the beginning and end of the growing season to avoid damage to soil structure. Land is tile drained and periodic moling or subsoiling will assist drainage	Landfall (within the temporary access track north of Conygarth Hill). Sporadic land pockets distributed along the onshore ECC including Gembling, Foston on the Wolds, Scorborough, Arram, as well as the permanent OnSS site.
Freely draining, slightly acidic loamy soils	Neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands	Arable and grassland	Loamy	Freely draining	Low	Suitable for range of spring and autumn sown crops; under grass the soils have a long grazing season. Free drainage reduces the risk of soil damage from grazing animals or farm machinery. Shortage of soil moisture most likely limiting factor on yields, particularly where stony or shallow	Landfall, including the temporary access tracks, compound areas and the landfall connection works before connecting onto Fraisthorpe beach). Along the entire extent of the coastline, inland of Fraisthorpe Beach and Barmston. An area stretching either side of the A165 in Lissett.
Slightly acidic loamy and clayey soils with impeded drainage	Wide range of pasture and woodland types	Arable and grassland	Loamy some clayey	Slightly impeded drainage	Moderate to high	Reasonably flexible but more suited to autumn sown crops and grassland; soil conditions may limit safe groundwork and grazing, particularly in spring	The onshore ECC south of Leconfield, through to Cherry Burton, Bishop Burton, Bentley and through to the temporary storage area at the OnSS site.

Soil type	Typical habitats	Land cover	Texture	Drainage type	Natural fertility	Expected crops	Distribution of Soils
Loamy and sandy soils with naturally high groundwater and a peaty surface	Wet meadows	Mostly arable	Peaty	Naturally wet	Low to high	Cereals, roots, potatoes and field vegetables provided groundwater is controlled. Ease of working and winter harvesting, which can be damaging to structure, dependent on texture and drainage of subsoil. Irrigation needed on lighter soils	Three sections of the onshore ECC located east of Wilfholme, north of Scorborough.
Loamy and clayey floodplain soils with naturally high groundwater	Wet flood meadows with wet carr woodlands in old river meanders	Grassland some arable	Loamy and clayey	Naturally wet	Moderate	Productive grassland provided drainage is maintained. Risk of poaching and soil damage early and late in the grazing season. Cereal production where flood risk is low	Northern extent of the onshore ECC that crosses over the River Hull at Brigham Ings. As well as a section of the ECC that boarders the land west of Rotsea.
Freely draining lime-rich loamy soils	Herb-rich chalk and limestone pastures; lime-rich deciduous woodlands	Arable with grassland at higher altitude	Loamy	Freely draining	Lime-rich	Well suited to spring and autumn-sown cereals and other crops including grass but the land is mostly nitrate vulnerable	Onshore ECC directly north of Scarborough that intersects the Beverley Road (A164), as well as the entire land covering the 400kV NGET connection search area.

6.7.4 Environmental Stewardship and Countryside Stewardship Schemes

6.7.4.1 The Environmental Stewardship agri-environmental scheme provides funding and advice to farmers, tenants and other land managers to encourage effective environmental management of land (Natural England 2015).

6.7.4.2 Environmental Stewardship builds on Defra's previous agri-environmental schemes, the existing Environmentally Sensitive Areas Scheme (ESAS) and the Countryside Stewardship Scheme (CSS). Historical agreements under the ESAS and CSS are in some cases continuing and are therefore also discussed where relevant in this chapter.

6.7.4.3 The aim of Environmental Stewardship is to protect, maintain and conserve the environmental landscape and associated wildlife. On behalf of Defra, NE (2015) are responsible for driving this scheme and providing an incentive for effective land management to farmers and land managers in England through funding initiatives.

6.7.4.4 Environmental Stewardship comprises of three components:

- **Entry Level Stewardship (ELS):** open to farmers to maintain their land in Good Agricultural and Environmental Condition (GAEC) through the adoption of management options to suit each farm type;
- **Organic Entry Level Stewardship (OELS):** open to farmers whose land is wholly or in part organically managed but not already receiving aid under the Organic Aid Scheme (OAS). Also includes 'Uplands Entry Level Stewardship (Uplands ELS)'; and
- **Higher Level Stewardship (HLS):** provide significant environmental benefits with significant environmental interest. Incorporates management of both the ELS and OELS.

6.7.4.5 Environmental Stewardship directly covers 74.97 ha of land within the Hornsea Four Order Limits (see **Figure 6.4**), comprising almost entirely of ELS and HLS, with a small proportion under OELS (0.03 ha) (**Table 6.10**). 0.24% of the total land within Environmental Stewardship in the wider ERYC area is located within the Hornsea Four Order limit.

6.7.4.6 Different to Environmental Stewardship, the CSS focusses more so on land management. A number of areas designated as CSS have been identified within the Hornsea Four Order Limits (**Figure 6.4**) and comprise 0.27% of the total CSS land within the ERYC jurisdiction.

6.7.4.7 The four main elements of the CSS are:

- **Mid-Tier:** achieve simple effective environmental benefits, including improving water quality;
- **Wildlife Offers**: support wildlife in respect to improved habitats for farmland birds and pollinating insects;
- **Higher Tier**: environmental protection of significant sites, commons and woodlands; and
- **Capital Grants:** provides environmental and landscape benefit through improving

hedgerows and boundaries and are valid for two years.

Table 6.10: Stewardship Schemes within the Hornsea Four Order Limits.

Stewardship Scheme	Landfall (including accesses)		Onshore ECC (including logistics compounds and accesses)		OnSS and 400 kV NGET connection area (including permanent accesses)		Hornsea Four Order Limits	
	Area (ha)	*Area (%)*	*Area (ha)*	*Area (%)*	*Area (ha)*	*Area (%)*	*Area (ha)*	*Area (%)*
Environmental Stewardship								
ELS and HLS Schemes	24.71	58.55 %	50.23	14.34 %	0	0 %	74.94	16.90 %
OELS Schemes	0	0 %	0.03	0.01 %	0	0 %	0.03	0.01 %
Total	24.71	58.55 %	50.26	14.35 %	0	0 %	74.97	16.91 %
CSS								
CSS Area	2.50	5.92 %	54.54	15.58 %	0	0 %	57.04	12.87 %
NE Stewardship Scheme Agreements	0	0 %	12.18	3.48 %	3.66	6.91 %	15.84	3.57 %
Total	2.50	5.92 %	66.72	19.06 %	3.66	6.91 %	72.88	16.44 %

Landfall

6.7.4.8 ELS plus HLS schemes together cover 24.71 ha of land within the order limits at landfall, representing 58.55 % of the total order limits landfall area (**Table 6.10**). These schemes are located:

- On land that falls within the direct footprint of the onshore ECC at the landfall before connecting to the landfall compound area; and
- Within the landfall compound area at Watermill Grounds.

Onshore ECC

6.7.4.9 ELS plus HLS schemes cover 50.23 ha of land that intersects the order limits at the onshore ECC through Brigham, Wilfholme and Scorborough (Bealey's Beck), as well as towards the southern extent of the order limits for the onshore ECC at Walkington and Bentley. This constitutes 14.35 % of the onshore ECC order limits.

6.7.4.10 Middle Tier Management CSS covers land that falls within the direct footprint of the order limits of the onshore ECC near landfall, before connecting to the landfall compound area. This scheme further extends south of the order limits of the onshore ECC to Barmston (**Figure 6.4**).

6.7.4.11 Total CSS (both Middle and Higher Tier, and land under agreement by NE) covers 66.72 ha of land directly crossed by the order limits of the onshore ECC. CSS land under agreement by NE is crossed by the order limits of the onshore ECC west of Leconfield.

6.7.4.12 Land covered by Higher Tier Management schemes are crossed by the order limits of the onshore ECC in between Foston on the Wolds and Brigham, as well as in the vicinity of the A1035, north-west of Beverly.

6.7.4.13 The land that is directly crossed by the order limits of the onshore ECC adjacent to the OnSS site (to the north of Cottingham) falls under Middle Tier Management CSS.

OnSS and 400 kV NGET connection area

6.7.4.14 The order limits at the OnSS do not overlap with any land covered by an Environmental Stewardship agreement.

6.7.4.15 Land under CSS agreement by Natural England falls within the order limits of the 400 kV NGET connection area, north-east of the OnSS (**Figure 6.4**).

Hornsea Four

Figure 6.4

Environmental Stewardship and Countryside Stewardship Schemes

490000 500000 510000 520000 530000

460000 450000 440000 430000

N

GRID NORTH

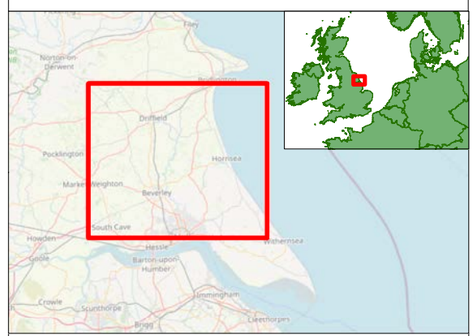
Barmston
Lissett
Foston on the Wolds
Brigham
Rotsea
Scorborough
Leconfield
Cherry Burton
Bishop Burton
Beverley
Woodmansey
Bridlington Bay
Hornsea
Kingston upon Hull

Order Limits

1 km Study Area

Stewardship Scheme Agreements

- Entry Level Stewardship
- Entry Level plus Higher Level Stewardship
- Higher Level Stewardship
- Organic Entry Level Stewardship
- Organic Entry Level plus Higher Level Stewardship
- Natural England Countryside Stewardship Scheme Agreements
- Countryside Stewardship Scheme Management Areas



Coordinate system: British National Grid

Scale@A3: 1:140,000

0 1.25 2.5 5 Kilometres

0 1.25 2.5 5 Miles

REV	REMARK	DATE
	First Issue for PEIR	18/04/2019
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Royal HaskoningDHV

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Date: 14/07/2021 Author: 303273 Name: HOW04RH0006_StewardshipSchemes

6.7.5 Land Use and Recreation

6.7.5.1 Land use and recreation features are described in this section and illustrated in **Figure 6.5** to **Figure 6.9**. Land use and recreation features have been identified and categorised as follows:

- Recreational (e.g. recreational fisheries, golf courses, leisure centres);
- Tourism (e.g. caravan and holiday parks, holiday cottages, hotels);
- Commercial (e.g. shops, cafés, pubs, restaurants); and
- Community (e.g. religious grounds, village halls, playing fields, allotments).

6.7.5.2 Local Wildlife Sites (LWS) have also been included as recreational receptors as LWS can be open to the public, although not all will be open to the public for recreational purposes. Further discussion on LWS is detailed in **Chapter 3: Ecology and Nature Conservation**.

6.7.5.3 Areas of open access land designated under the CRoW Act 2000 have also been identified. Within these designated areas the public are not restricted to paths but can freely walk on mapped areas including mountain, moor, heath, downland and registered common land.

Landfall

6.7.5.4 Fraisthorpe Beach is a sandy beach and is utilised for a number of different recreational activities including dog walking, horse riding, kite surfing and wind surfing. The beach was a recipient of a 2018 Seaside Award by Keep Britain Tidy, which recognises some of the best beaches in England.

6.7.5.5 Landward of Fraisthorpe Beach, agriculture is the primary land use in the landfall area with the majority of the landscape dominated by open fields bordered by hedges and the occasional plantation woodland. The farming within this area is arable (predominantly cereals and root crops) with areas of grazing and livestock interspersed.

6.7.5.6 There are no recreational facilities located within the direct footprint of the landfall apart from Fraisthorpe Beach itself.

6.7.5.7 Within the 1 km land use and agriculture study area are:

- two tourism features (Barmston Beach Holiday Park and Fraisthorpe Beach Caravan Park);
- one commercial property (The Cow Shed café); and
- one community receptor (St Edmund's Chapel in Fraisthorpe).

Onshore ECC

6.7.5.8 The onshore ECC and associated land use and agriculture study area is predominantly rural in nature with the major land use being intensive agriculture typified by large arable fields within the fertile plain of the wider Holderness area. A mixture of soil types and conditions enable a diverse utilisation of farming activities to be pursued. Such practises include the

cultivation of cereals, roots, potatoes and field vegetables (on areas of loamy and sandy soils); productive areas of grassland (on loamy and clayey soils) as well as grazing livestock (on slightly acidic, rich loam and clayey soils). A further description of these soil types, their characteristics and their suitability for farming practises along the ECC are provided in **Table 6.9.**

6.7.5.9 A number of small villages are located within the land use and agriculture study area including Barmston, Fraisthorpe, Lissett, Gembling, Foston on the Wolds, Brigham, Scorborough, Leconfield, Cherry Burton, Walkington and Bentley. The southern outskirts of Beverley also sit partially within the land use and agriculture study area. However, the onshore ECC is routed around these centres of population specifically to avoid direct impacts.

6.7.5.10 There are several recreational, tourism, community and commercial receptors within the land use and agriculture study area that are predominantly situated within the towns, villages and hamlets identified above. Other than LWS, no recreational, tourism, community and commercial receptors fall within the direct footprint of the Hornsea Four Order Limits.

6.7.5.11 Within the land use and agriculture study area there are three golf courses, one to the north east of Cherry Burton and the second to the north of Cottingham. The third golf course forms part of Beverley Westwood pastures, a section of which overlaps with the onshore ECC land use and agriculture study area. This area also overlaps with a section of the horse racing venue, Beverley Racecourse. Other recreational receptors include Brigham Sailing Club, Beverley Clay Target Centre and Cottingham Equestrian Centre.

6.7.5.12 Tourism based receptors include a number of caravan parks as well as two hotels and a small number of holiday cottages. Commercial entities primarily comprise of small shops, pubs, cafés and restaurants, located predominantly within urban centres within the land use and agriculture study area.

6.7.5.13 Several examples of community facilities and receptors are found within the onshore ECC and land use and agriculture study area. These predominantly relate to religious grounds (notably churches) but also include village halls, allotments, playing fields and parks. No community facilities and receptors fall within the direct footprint of the Hornsea Four Order Limits.

6.7.5.14 Other land uses within the search area include onshore wind farms, sporadic plantation woodland and small-scale quarrying.

6.7.5.15 A total of 26 LWS are present in the onshore ECC and land use and agriculture study area, of which 20 are classed as 'Designated', with the remaining six sites classed as 'Candidate'. Further discussion on LWS is detailed in **Chapter 3: Ecology and Nature Conservation**. Of these 26 LWS within the land use and agriculture study area, the following seven LWS overlap with the Hornsea Four Order Limits:

- Bryan Mills Back Designated LWS (to the north of Scorborough);
- Bealey's Beck, Lockington Candidate LWS (to the west of Scorborough);
- Old Lane, Leconfield Designated LWS (to the north of Leconfield);
- Raventhorpe Embankment Designated LWS (to the north of Cherry Burton);
- Newbald Road Designated LWS (to the north of Walkington);
- Moor Lane Designated LWS (to the east of Walkington); and
- Jillywood Lane Designated LWS (to the north of Cottingham).

6.7.5.16 Within the onshore ECC and land use and agriculture study area there is one Registered Park and Garden; Risby Hall, to the west of Bentley, and three areas of Open Access Land: Gembling Common; Beverley Westwood, and a small area within Walkington. The Registered Park and Garden and the three areas of Open Access Land do not overlap with the Hornsea Four Order Limits.

6.7.5.17 There are numerous transport networks and major 'A' and 'B' roads and single access roads that connect villages and rural towns within the onshore ECC and land use and agriculture study area, some of which directly cut through the corridor in Cherry Burton (A1035), in addition to a disused railway line. See **Chapter 7: Traffic and Transport** for further details on transport networks. Several areas of potentially contaminated land (i.e. landfill) are situated near the onshore ECC throughout (see **Chapter 1: Geology and Ground Conditions** for further details of contaminated land).

OnSS and 400 kV NGET connection area

6.7.5.18 The 1 km land use and agriculture study area around the OnSS includes both rural and urban environments, with existing industrial facilities nearby at Creyke Beck creating a more diverse and mixed land use picture than either the onshore ECC or landfall land use and agriculture study areas. The village of Bentley falls within the 1 km land use and agriculture study area (from the OnSS permanent access track) along with several farms. Where present, the rural environment is predominantly comprised of arable fields.

6.7.5.19 A small pocket of Registered Common Land (as defined under the CRoW Act, 2000) is located approximately 80 m to the north of the boundary of the Hornsea Four Order Limits surrounding the NGET substation at Creyke Beck. It should be noted that due to the limited area this designation covers, and the scale of the mapping, it is not visible on **Figure 6.9**.

6.7.5.20 Two LWS (Birkhill Wood and Jillywood Lane) are designated on the land westwards of the OnSS access track that joins from the A1079. Woodhill Path Designated LWS is to the south of the OnSS. Two further candidate LWS are designated within 1 km: one located south of the OnSS and north of Cottingham (Mill Beck and Fields); and one located to the north-east of Skidby, adjacent to the A164 (Drove Road).

6.7.5.21 Two major transport routes characterise the highway network (A164 and A1079), both of which are to be used for temporary access for the onshore ECC and OnSS respectively. Park Lane is the only transport route that connects to the NGET substation at Creyke Beck and

residential receptors to the south and south-east of the OnSS site, which is not being used by traffic associated with Hornsea Four (Figure 6.1).

6.7.5.22 The NGET substation at Creyke Beck is located within the land use and agriculture study area, as is the rapid reaction gas fired Statera Energy Creyke Beck Power Station located to the south-east of the OnSS.

6.7.5.23 No recreational facilities overlap with the Hornsea Four Order Limits. However, a number of recreational facilities are located within the land use and agriculture study area including the Cottingham Golf Course, Equestrian and Leisure Centre. Several community areas are present within the land use and agriculture study area to the south of the OnSS, including allotments, playing fields and nature areas, all located on the northern outskirts of Cottingham.

6.7.6 Public Rights of Way and Cycle Routes

6.7.6.1 Thirty-six crossing points for PRoW and cycle routes have been identified along the entirety of the Hornsea Four Order Limits (see **Volume A4, Chapter 4: Annex 2 Onshore Crossing Schedule**). These comprise of 23 existing footpaths, one proposed footpath (the England Coast Path), eight bridleways, three cycle path crossings and an additional marked way not associated with a designated footpath or bridleway. **Table 6.11** identifies all PRoW crossings, their PRoW reference, description and the crossing methodology proposed. The locations of these crossing points and PRoW are presented on **Figure 6.5** to **Figure 6.9**. A number of additional PRoW are located within the land use and agriculture study area, and whilst no direct impacts will occur to such features there is the potential for secondary effects to users (see **Table 6.12**), most notably in the vicinity of the OnSS where there is a relatively dense PRoW network (see **Figure 6.9**).

Table 6.11: PRoW crossing points.

PRoW Name	PRoW Reference	Description	Crossing Method
Barmston Footpath No.4	BARMF04	Footpath	N/A – Landfall, including construction compound
Barmston Footpath No. 3	BARMF03	Footpath	Open Cut
Barmston Footpath No. 2	BARMF02	Footpath	Open Cut
Foston on the Wolds Footpath No. 10	FOTWF10	Footpath	HDD with haul road crossing
Foston on the Wolds Footpath No.12	FOTWF12	Footpath	Open Cut
Foston on the Wolds Footpath No. 12	FOTWF12	Footpath	HDD
Foston on the Wolds Bridleway No. 6	FOTWB06	Bridleway	Open Cut
Hutton Cranswick Footpath No. 10	HCRAF10	Footpath	HDD with haul road crossing
Watton Footpath No. 18	WATTF18	Footpath	HDD with haul road crossing
Watton Bridleway No. 13	WATTB13	Bridleway	HDD with haul road crossing
Beswick Bridleway No. 23	BESWB23	Bridleway	Open Cut
Lockington Footpath No. 8	LOCKF08	Footpath	Open Cut
Leconfield Footpath No.1	LECOF01	Footpath	Open Cut

PRoW Name	PRoW Reference	Description	Crossing Method
Leconfield Bridleway No. 2	LECOB02	Bridleway	Open Cut
Leconfield Footpath No. 7	LECOF07	Footpath	Open Cut
Leconfield Footpath No. 7	LECOF07	Footpath	Open Cut
Leconfield Bridleway No. 9	LECOB09	Bridleway	HDD with haul road crossing
Leconfield Footpath No. 10	LECOF10	Footpath	Open Cut
Leconfield Footpath No. 11	LECOF11	Footpath	Open Cut
Leconfield Footpath No. 10	LECOF10	Footpath	N/A – Temporary Access Track
Leconfield Bridleway No. 6	LECOB06	Bridleway	N/A – Temporary Access Track
Leconfield Bridleway No. 12	LECOB12	Bridleway	Open Cut
Cherry Burton Footpath No. 2	CBURF02	Footpath	HDD
Cherry Burton Footpath No. 3	CBURF03	Footpath	Open Cut
Yorkshire Wolds	Route Number 1	National Cycle Network	HDD
Yorkshire Wolds	Route Number 164	National Cycle Network	HDD
Walkington Footpath No. 9 (Moor Lane)	WALKF09	Footpath	Open Cut
Beverley Twenty & East Riding Heritage Way (LDWR)	-	Marked Route	HDD
Skidby Footpath No. 16	SKIDF16	Footpath	Open Cut
Skidby Footpath No. 17	SKIDF17	Footpath	Open Cut
Skidby Footpath No. 16	SKIDF16	Footpath	N/A - OnSS and 400 kV NGET connection area
Rowley Footpath No.12	ROWLF12	Footpath	Open Cut
Rowley Footpath No.12	ROWLF12	Footpath	N/A - Permanent Access Track
Rowley Bridleway No.13	ROWLB13	Bridleway	N/A - Permanent Access Track
Yorkshire Wolds	Route Number 1	National Cycle Network	N/A - OnSS and 400 kV NGET connection area
England Coast Path	Planned path only – not in existence at time of writing.	Future Footpath	N/A – Landfall, including construction compound

6.7.6.2 Management of the PRoW crossings points (see **Volume A4, Chapter 4: Annex 2 Onshore Crossing Schedule**), as set out in **Table 6.11**, will be undertaken through a number of options. Further details of the PRoW management measures to be undertaken can be found within the PRoW Outline Management Plan which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**).

6.7.6.3 The Marine and Coastal Access Act 2009 (MCAA) introduced a duty on NE to develop a coastal path that improves recreational public access on foot to the English coast. The English Coast Path designated in 2020 (which will be the longest managed and waymarked coastal path in the world) will be a continuous path around the whole English coast once all

sections of it are fully open. In some areas the path is now open with access rights, including the stretch of coast within the Hornsea Four landfall area, as displayed in **Figure 6.5** and **Figure 6.6**.

6.7.6.4 The three cycle routes directly crossed by the Hornsea Four Order Limits (**Figure 6.8** and **Figure 6.9**) include both traffic-free and on-road routes as part of the National Cycle Network:

- North-west of Beverly along the A1035 (Malton Road) - Yorkshire Wolds No.161 (Long Distance Route 1);
- East of Walkington along the B1230 (Broadgate) – Route Number 164; and
- North of Cottingham - Yorkshire Wolds No.1. (Long Distance Route 1).

Landfall

6.7.6.5 The landfall compound will overlap with Barmston Footpath No. 4, which will require a Long-Term Temporary Diversion. Long-Term in this case relates to a period longer than three months at one any one time, or six months in total over the whole construction period. No diversion will be required once construction works are completed at this location. The proposed route for the England Coast Path also traverses the landfall area, passing in close proximity to the High Water mark on the landward side. If this route is in place before construction commences trenchless techniques will avoid directly affecting this path.

Onshore ECC

6.7.6.6 Ten of the 30 PRoW crossing points within the Onshore ECC will be crossed using trenchless techniques, these are co-located with other important features, such as roads, main rivers etc where Hornsea Four has committed to using trenchless techniques to help protect these important features (Co1). Five of the PRoWs crossed with trenchless techniques will also overlap with haul roads, which will require further management measures during the initial construction phase.

6.7.6.7 Two PRoW crossing points are associated with a temporary access track for a logistics compound. These PRoW will therefore require Short-Term Temporary Closures. Public access to these PRoW will be maintained through the use of management measures including appropriate fencing and signage. Further information can be found within the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**).

6.7.6.8 The remaining 18 crossings will not be crossed using trenchless techniques and therefore disturbance will be required to be managed through either Short-Term Temporary Diversions or Short-Term Temporary Closures. Short-Term in this case relates to a period no longer than three months at one any one time, or six months in total over the whole construction period.

OnSS and 400 kV NGET connection area

6.7.6.9 At the OnSS and 400 kV NGET connection area and permanent access track, there are four crossings, for which two PRoW (Skidby Footpath No.16 and Rowley Bridleway No.13) will potentially require Permanent Diversions. The Sustrans National Route 1 will be crossed using trenchless techniques and therefore, diversions or other measures will not be required to maintain access in this instance.

6.7.6.10 The remaining crossing (Rowley Footpath No.12) will require a Short-Term Temporary Closure. Short-Term in this case relates to a period no longer than three months at one any one time, or six months in total over the whole construction period.

6.7.6.11 The current baseline description above provides an accurate reflection of the current state of the existing environment. The earliest possible date for the start of construction for the onshore elements of Hornsea Four is 2024 with an expected operational life of 35 years, and therefore there exists the potential for the baseline to evolve between the time of assessment and point of impact. Outside of short-term or seasonal fluctuations, changes to the baseline in relation to land use and agriculture usually occur over an extended period of time (considered in **Section 6.7.7**). Based on current information regarding reasonably foreseeable events over the next four years, the baseline environment is not anticipated to have fundamentally changed from its current state at the point in time when impacts occur.

Hornsea Four

Figure 6.5

PRoW, Cycle Routes and Recreational Assets - Sheet 1 of 5

510000 515000 520000

465000 460000

N

GRID NORTH

BRIDLINGTON

CARNABY CP

BARMSTON CP

KELK CP

Bridlington Bay

CARNF07

CARNB05

CARNF06

CARNB04

BARMF04

BARMF01

BARMF03

BARMF02

BARMF06

Author: 303273

Date: 14/07/2021

Name: HOW04RH0127_PRoWCycleRoutes_Sheet1

Order Limits

1 km Study Area

Coast Path

Public Right of Way

PRoW Crossing

Landfall

Onshore ECC - Open Cut

Recreational Asset

Tourism

Commercial

Community

Recreational

Coordinate system: British National Grid

Scale@A3: 1:35,000

0 0.5 1 1.5 Kilometres

0 500 1,000 1,500 2,000 Yards

REV	REMARK	DATE
	First Issue for PEIR	18/04/2019
A	Updated following PEIR consultations, for DCO	14/07/2021

Title: Public Rights of Way and Cycle Routes

Document no: HOW04RH0127

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Checked by: CT

Approved by: PS

Hornsea Four

Figure 6.6

PRoW, Cycle Routes and Recreational Assets - Sheet 2 of 5

510000 515000 520000

460000 455000

GRID NORTH

BARMF01 BARMF02 BARMF03 BARMF05 BARMF06

KELKS07 KELKF10 FOTWF11 FOTWF10 FOTWF03 FOTWF02 FOTWF01 NFROF03

BEEFF03 BEEFF04

ULROF02 ULROF04 ULROF05 ULROF06 SKIPF08

Great Kelk Lissett Ulrome CP North Field Ulrome BEEFORD CP Beeford SKIPSEA CP Skipsea Skipses Brough Dringhoe Upton Lissett Bridge Sykes Bridge Dunnington Lane Dunnington Skirlington

Order Limits

1 km Study Area

Coast Path

Public Right of Way

PRoW Crossing

Onshore ECC - HDD

Onshore ECC - Open Cut

Recreational Asset

Tourism

Commercial

Community

Recreational

Local Wildlife Site (LWS)

CRoW Act2000 Access Layer

Bridlington Driffield Hornsea Beverley Hull Hedon Withernsea South Cave Market Weighton 1 2 3 4 5

Coordinate system: British National Grid

Scale@A3: 1:35,000

0 0.5 1 1.5 Kilometres

0 500 1,000 1,500 2,000 Yards

REV	REMARK	DATE
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Date: 15/07/2021 Author: 303273 Name: HOW04RH0128_PRoWCycleRoutes_Sheet2

500000 505000 510000

455000 450000

N
GRID NORTH

DRIFFIELD CP
SKERNE AND WANSFORD CP
FOSTON CP
HUTTON CRANSWICK CP
NORTH FRODINGHAM CP

KELKS07
KELKF10
FOTWF11
FOTWF12
FOTWF03
FOTWF02
FOTWF01
FOTWF04
NFROF03
FOTWF05
FOTWB09
FOTWB06
FOTWB07
FOTWB08
FOTWF13
SKERS09
SKERB08
SKERB07
HCRAF06
HCRAF10
WATTF17
WATTF18
BRSNB24
WATTF12
WATTF22
WATTF15
WATTF14

Date: 14/07/2021 Author: 303273 Name: HOW04RH0129_PRoWCycleRoutes_Sheet3

Hornsea Four

Figure 6.7

PRoW, Cycle Routes and Recreational Assets - Sheet 3 of 5

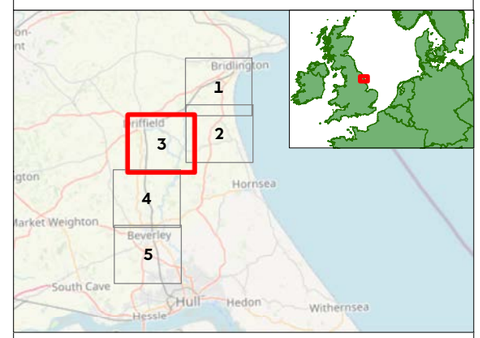
- Order Limits
- 1 km Study Area
- Public Right of Way
- Long Distance Walk

PRoW Crossing

- Onshore ECC - HDD
- Onshore ECC - Open Cut

Recreational Asset

- T Tourism
- C Commercial
- C Community
- R Recreational
- Local Wildlife Site (LWS)



Coordinate system: British National Grid
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0 250 500 1,000 Yards

REV	REMARK	DATE
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Hornsea Four

Figure 6.8

PRoW, Cycle Routes and Recreational Assets - Sheet 4 of 5

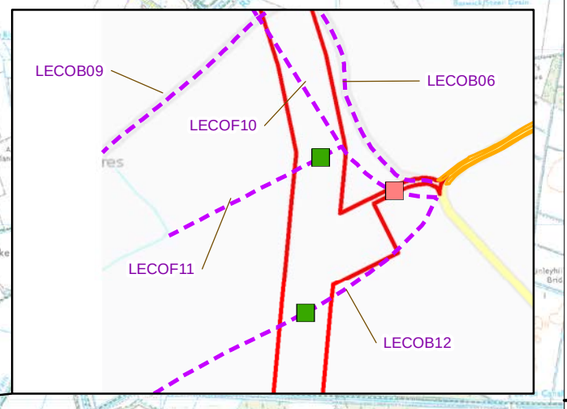
500000 505000 450000 445000

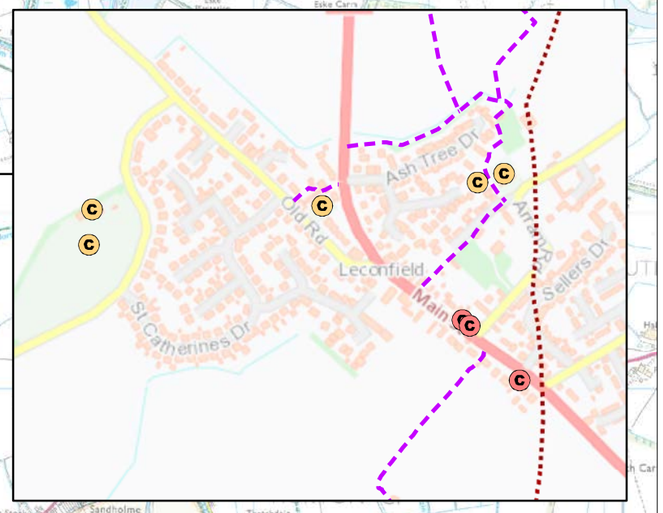
N GRID NORTH

WATTF12 WATTF22 WATTF15 WATTF14 WATTF16 WATTB24 WATTB13 BESWF16 BESWB21 WATTF11 BESWB01 BESWF19 BESWF17 LOCKF12 BESWB23 LOCKB09 LOCKF02 LOCKF03 LOCKF08 LOCKF07 LOCKF11 LECOF03 LECOB04 LECOB10 LECOF01 LECOB02 LECOF05 LECOB21 LECOF07 LECOB06 LECOF11 LECOB08 LECOB09 LECOF10 LECOF15 LOCKB13 LECOF34 LOCKB01 ETTOB01 LECOB12 LECOF14 LECOF16 LECOF13 LECOF17 CBURF02 LECOF22 LECOF18 CBURF01 LECOB31 CBURF03 MOLEF06 LECOF32

Route number 1

Route number 1





Date: 14/07/2021 Author: 303273 Name: HOW04RH0130_PRoWCycleRoutes_Sheet4

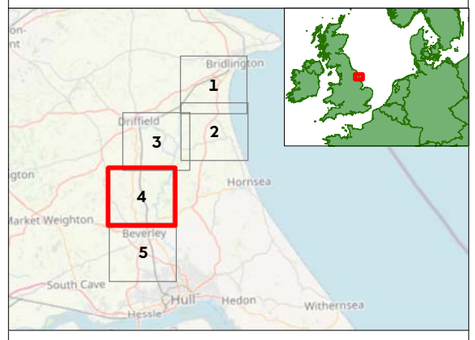
- Order Limits
- 1 km Study Area
- Public Right of Way
- Cycle routes
- Long Distance Walk

PRoW Crossing

- Logistics Compound
- Onshore ECC - HDD
- Onshore ECC - Open Cut

Recreational Asset

- Commercial
- Community
- Recreational
- Local Wildlife Site (LWS)



Coordinate system: British National Grid
Scale@A3: 1:35,000

0 0.5 1 1.5 Kilometres

0 500 1,000 1,500 2,000 Yards

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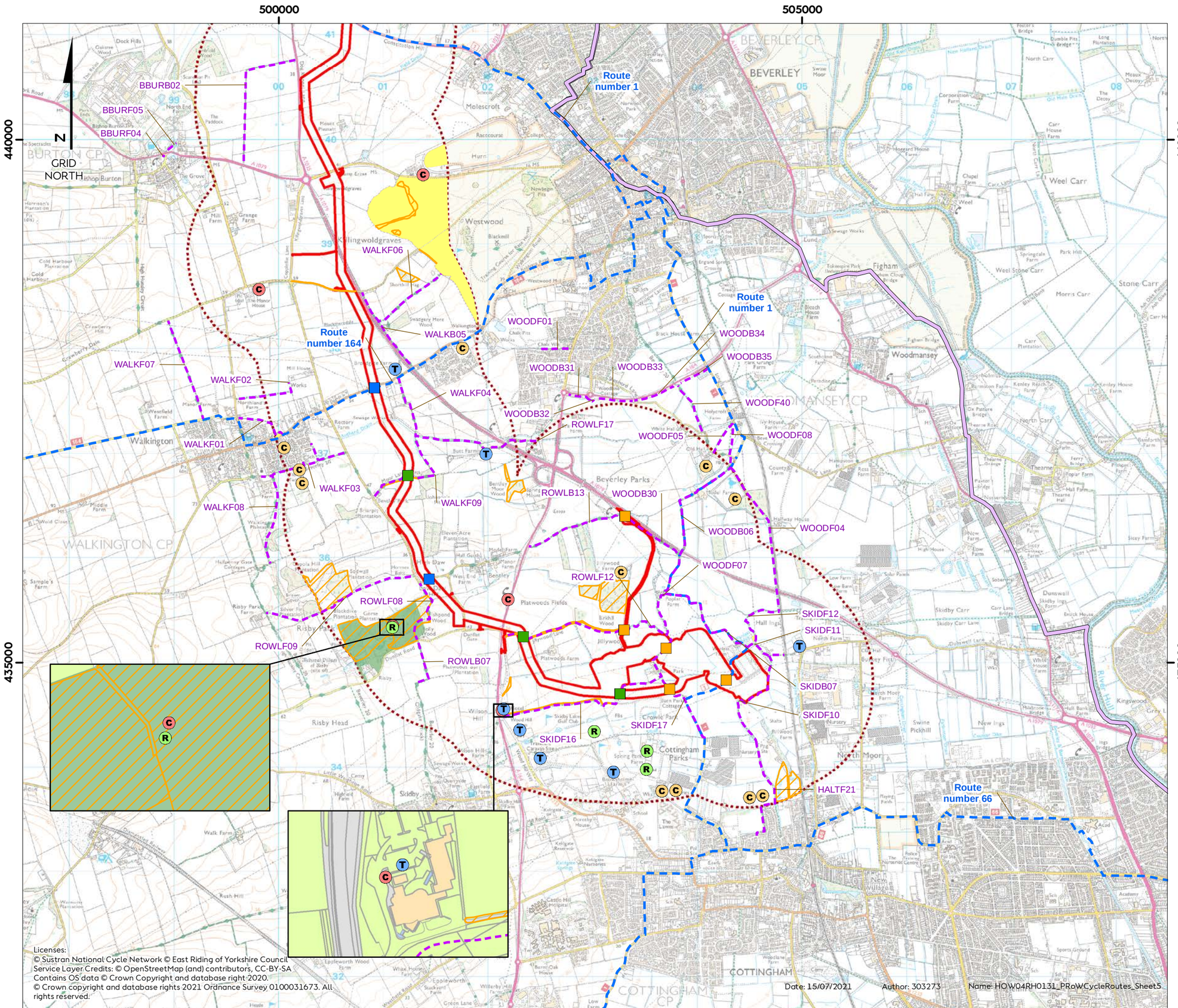
Hornsea Four

Figure 6.9

PRoW, Cycle Routes and Recreational Assets - Sheet 5 of 5



- Order Limits
- 1 km Study Area
- Public Right of Way
- Cycle routes
- Long Distance Walk

PRoW Crossing

- OnSS Site and 400kV ECC
- Onshore ECC - HDD
- Onshore ECC - Open Cut

Recreational Asset

- Tourism
- Commercial
- Community
- Recreational
- Local Wildlife Site (LWS)
- CRoW Act2000 Access Layer
- Registered Park and Garden

Coordinate system: British National Grid

Scale@A3: 1:35,000

0 0.5 1 1.5 Kilometres

0 500 1,000 1,500 2,000 Yards

REV	REMARK	DATE
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6.7.7 Evolution of the Baseline

6.7.7.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 require that "*an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge*" is included within the ES (EIA Regulations, Schedule 4, Paragraph 3). From the point of assessment, over the course of the development and operational lifetime of the Hornsea Four (operational lifetime anticipated to be 35 years), long-term trends mean that the condition of the baseline environment is expected to evolve. This section provides a qualitative description of the evolution of the baseline environment, on the assumption that Hornsea Four is not constructed, using available information and specialist technical knowledge of land use and agriculture.

6.7.7.2 The baseline conditions presented within this chapter will be subject to change over the duration of Hornsea Four's lifetime (35 years). In the long term, land use and cover are continually evolving and being modified given their close interlink with natural processes and are further driven through climate forcing and change (Wu et al, 2013). However, over the 35-year project duration under consideration it is anthropogenic drivers that are more likely to drive macro-scale land use change (i.e. through population growth or changes in distribution, changes to land use management and development practices, and responding to economics – especially those pertaining to agriculture).

6.7.7.3 An increase in population, increasing urbanisation and improvement in living standards, may increase pressure for more productive agriculture and could lead to the loss of grassland areas and a continued increase in the use of industrial fertiliser and other agri-chemicals to ensure continued high crop yields. Such changes in land cover and associated agricultural practise may modify and alter natural ecosystem functions and processes, including the underground water table, associated water quality, as well as the area, distribution and quality of dependant wildlife habitats and their biodiversity (Sohl et al. 2012).

6.7.7.4 Between 1991 and 2017, the population of ERYC has steadily increased from 292,007 to 338,061 and this is projected to increase to 361,933 by 2039 (East Riding Data Observatory 2017). Given the current baseline environment within the land use and agriculture study area, it is likely the demand from population growth will drive expansion of the urban areas and result in the loss of some agricultural land replaced, for example, by small housing developments.

6.7.7.5 Further to this, agricultural patterns are linked to agricultural policy and available subsidy/farm payment structures. Future changes to UK agricultural policy outside the EU are unknown at the time of writing but are likely to influence agricultural practise in the area in future years.

6.7.7.6 The English Coast Path along the relevant section of coast where it interacts with the Hornsea Four Order Limits has now been determined by the Secretary of State (September 2020). Enabling works and any installation of infrastructure required for the Coast Path (e.g.

watercourse crossings) will be required before public rights of access come into force (Natural England 2013).

6.7.7.7 On the 16 January 2020 a revised Agriculture Bill 2020 was introduced to the House of Commons. The Bill provides a legal framework for the establishment of a new system of agricultural assistance for farmers and land managers and the phasing out of direct payments in England over a seven-year transition period. There are no details in the Bill of the new Environmental Land Management (ELM) scheme which will replace the current system of direct payments. Without further information on the ELM scheme(s) that will replace those currently in operation it is unclear how the baseline will change but the emphasis will be on environmental improvements

6.7.8 Data Limitations

6.7.8.1 Walkover surveys of PRoW routes identified as crossing the Hornsea Four Order Limits were undertaken in September and October 2019. However, since this time there have been refinements made to the Hornsea Four Order Limits. While these refinements did not result in interaction with additional PRoW, in some locations the position of the crossing location was moved. Therefore, not all of the PRoW crossing locations detailed in **Table 6.11** were visited.

6.7.8.2 Approximately 85% of the current PRoW crossings have been surveyed. The remaining 15% of PRoW crossings will be surveyed prior to construction and the development of the detailed Onshore PRoW Management Plan (Co79), as detailed in the Outline PRoW Management Plan, which forms appendix C of the Outline CoCP (**Volume F2, Chapter 2: Outline Code of Construction Practice**).

6.7.8.3 As the main purpose of the surveys were to inform the Outline PRoW Management Plan, it is considered that these limitations have been sufficiently managed by using secondary data obtained from ERYC (PRoW and cycle routes) as well as publicly available high-resolution aerial imagery to inform the baseline in this ES. The Outline PRoW Management Plan will inform the final PRoW Management Plan, which will require approval from ERYC prior to commencing construction of the connection works. This is secured through DCO Requirement 17 (CoCP).

6.7.8.4 Data on ALC from NE has been used to ascertain ALC Grades within the land use and agriculture study area. No differentiation is made within this data set between ALC Grades 3a and 3b, where 3a is classified as BMV agricultural land and 3b is not. This limitation has been managed by assuming all grade 3 land is 3a thus confirming to BMV status. This precautionary approach is considered appropriate in this highly agricultural area where across the ERYC jurisdiction 90% of agricultural land is considered of excellent or good quality (ALC Grades 2 and 3a) (ERYC 2011).

6.7.8.5 The absence of further ALC data is not considered to affect the assessment or the mitigation identified to any significant degree as remaining cover is considered adequate to make a robust assessment.

6.8 Project basis for assessment

6.8.1 Impact register and impacts "Not considered in detail in the ES"

6.8.1.1 Upon consideration of the baseline environment, the project description outlined in **Volume A1, Chapter 4: Project Description**, the Hornsea Four Commitments (**Volume A4, Annex 5.2: Commitments Register)** and response to formal consultation on the PEIR, several potential impacts upon land use and agriculture are "Not considered in detail in the ES". These impacts are outlined, together with a justification for not considering them further in **Table 6.12**, which should be read in conjunction with **Volume A4, Annex 5.1: Impacts Register**.

6.8.1.2 In July 2019, Highways England issued an update to the Design Manual for Roads and Bridges (DMRB) significance matrix (see **Volume A1, Chapter 5: Environmental Impact Assessment Methodology**). Impacts formerly assessed within the category medium sensitivity and minor magnitude, as Minor (Not Significant), under the new guidance are now within the significance range of Slight or Moderate and therefore require professional judgement. Following a review of impacts, it was considered that the changes do not alter the overall significance of the impacts assessed at Scoping and in the PEIR (see **Volume A4, Annex 5.1: Impacts Register**). Therefore, impacts assessed as not significant at PEIR have not been considered in detail within this ES chapter, unless there has been a material change to Hornsea Four, baseline characterisation, or the assessment methodology that necessitates re-assessment. A summary of the justification for this consideration is provided in **Table 6.12**.

Table 6.12: Land use and agriculture impact register - impacts not considered in detail in the ES and justification.

Project activity and impact	Likely significance of effect	Approach to assessment	Justification
Permanent disruption / reduction of land: Operation and maintenance phase Impacts of operation and maintenance of ECC and OnSS may affect agricultural land and farm holdings, resulting in permanent disruption or reduction in land	No likely significant effect	Scoped out	Agreement between Hornsea Four and Stakeholders at Scoping that impact can be "Scoped Out" (PINS Scoping Opinion, November 2018, ID:4.18.2).

Project activity and impact	Likely significance of effect	Approach to assessment	Justification
available for farming activities. (LUA-O-6)			
Temporary disruption / reduction in land: Decommissioning phase Impacts of decommissioning above ground installations may temporarily affect Agricultural Land and farm holdings, resulting in temporary disruption or reduction in land available for farming activities. (LUA-D-7)	No likely significant effect	Not considered in detail in the ES.	An assessment of the potential impacts of the decommissioning above ground installations on agricultural land and farm holdings within the OnSS are not considered in detail in the EIA, through commitment Co127. This commitment ensures that a decommissioning plan will be developed to remove all onshore above ground infrastructure and the decommissioning of below ground infrastructure. It is therefore considered the impacts associated with the decommissioning phase will be of equal or lower magnitude to those identified for the construction phase (noting that no significant effects have been identified in relation to the construction phase). Approach agreed with ERYC (ON-HUM-3.7).
Temporary disruption to coastal recreation: Construction Impacts of construction may affect recreational use of the coast through temporary disruption to beach access and coastal paths. (LUA-C-2).	No likely significant effect	Not considered in detail in the ES.	This impact was assessed as part of the EIA, as set out in the PEIR and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**), and no likely significant effect was identified. Given the update in the MDS, whereby no beach closure will occur apart from in emergencies and a long-term diversion put in place for one coastal PRoW (see Outline PRoW Management Plan, which forms appendix C of **Volume F2, Chapter 2: Code of Construction Practice**), no changes are considered to affect the no LSE status of this impact identified at PEIR. Given the change in the basis for assessment in the ES (i.e. the change to the updated DMRB assessment methodology) this impact is considered 'slight' (not significant) and is therefore not considered in detail in the ES, as agreed with ERYC (ON-HUM-3.6).
Impacts on recreation and amenity: Construction Phase	No likely significant effect	Not considered in detail in the ES.	Assessment at PEIR (**Volume 3, Chapter 6**, Section 6.11) referred to other technical chapters (i.e. chapters for: noise and vibration; air quality; and traffic and transport) for further information as no chapter specific impacts

Project activity and impact	Likely significance of effect	Approach to assessment	Justification
Impacts of construction may affect recreational resources and amenity (noise, dust, and traffic movements). (LUA-C-3).			were identified. As no changes have been identified since PEIR that affect this assessment this impact is not considered in detail in the ES, as agreed with ERYC (ON-HUM-3.6).
Severance, temporary diversion or closure: Construction Phase Impacts of construction may affect National Cycle network Routes, other PRoW and promoted routes, resulting in severance, temporary diversion or closure. (LUA-C-4).	No likely significant effect	Not considered in detail in the ES.	This impact was assessed as part of the EIA, as set out in the PEIR and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**), and no likely significant effect was identified. Temporary diversions or closures and associated signage will be applied to the PRoW (Co79). Measures will be agreed with ERYC as set out in the Outline PRoW Management Plan (which forms appendix C of **Volume F2, Chapter 2: Code of Construction Practice**). Such embedded mitigation and confirmation of the PRoW affected has not identified any change to the assessment set out in the PEIR. Given the change in the basis for assessment in the ES (i.e. the change to the updated DMRB assessment this impact is considered 'slight' (not significant) and is therefore not considered in detail in the ES. In addition, the removal of this impact from the ES Chapter was agreed with ERYC during the PRoW meeting in Beverley on the 29th October 2019 (ON-HUM-3.7).
Severance, temporary diversion or closure: Operation Impacts of construction may affect National Cycle network Routes, other PRoW and promoted routes, resulting in severance, temporary diversion or closure. (LUA-O-5).	No likely significant effect	Not considered in detail in the ES.	This impact was assessed as part of the EIA, as set out in the PEIR and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**), and no likely significant effect was identified. Permanent diversions and associated signage will be applied to a small number of PRoW (Co79). Measures will be agreed with ERYC as set out in the Outline PRoW Management Plan (which forms appendix C of **Volume F2, Chapter 2: Code of Construction Practice**). Such embedded mitigation and confirmation of the PRoW affected has not identified any change to the assessment set out in the PEIR (Orsted, 2019b). Given the change in the basis for assessment in the ES (i.e. the change to the updated DMRB

Project activity and impact	Likely significance of effect	Approach to assessment	Justification
			assessment this impact is considered 'slight' (not significant) and is therefore not considered in detail in the ES. In addition, the removal of this impact from the ES Chapter was agreed with ERYC during the PRoW meeting in Beverley on the 29th October 2019 (ON-HUM-3.7).

Notes:
Grey - Potential impact is scoped out and both PINS and Hornsea Four agree.
Red – Potential impact is not considered in detail in the ES with no consensus between PINS and Hornsea Four at EIA Scoping and further justification provided during the pre-application stage.
Purple - Not considered in detail in the ES. No likely significant effect identified at PEIR.

6.8.2 Commitments

6.8.2.1 Hornsea Four has adopted commitments (primary design principles inherent as part of Hornsea Four, installation techniques and engineering designs/modifications) as part of their pre-application phase, to eliminate and/or reduce the likely significant effect (LSE) of a number of impacts. These are outlined in **Volume A4, Annex 5.2 Commitments Register**. Further commitments (adoption of best practice guidance), referred to as tertiary commitments in **Table 6.13** below, are embedded as an inherent aspect of the EIA process. Secondary commitments are incorporated to reduce LSE to environmentally acceptable levels following initial assessment i.e. so that residual effects are reduced to environmentally acceptable levels.

6.8.2.2 The commitments adopted by Hornsea Four in relation to land use and agriculture are presented in **Table 6.13**.

Table 6.13: Relevant land use and agriculture commitments.

Commitment (Co) Identification reference	Measure Proposed	How the measure will be secured
Co8	Tertiary: Soil will be stored and managed in accordance with DEFRA Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Ref PB1328) or the latest relevant available guidance.	DCO Requirement 17 (CoCP)
Co10	Tertiary: Post-construction, the working area will be reinstated to pre-existing condition as far as reasonably practical in line with DEFRA 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298 or latest relevant available guidance.	DCO Requirement 17 (CoCP) DCO Requirement 20 (Restoration of land used

Commitment (Co) Identification reference	Measure Proposed	How the measure will be secured
		temporarily for construction)
Co19	Tertiary: An Onshore Infrastructure Drainage Strategy will be developed for the permanent onshore operational development in accordance with the Outline Onshore Infrastructure Drainage Strategy. The Onshore Infrastructure Drainage Strategy will include measures to ensure that existing land drainage is reinstated and/or maintained. This will include measures to limit discharge rates and attenuate flows to maintain greenfield run-off rates at the Onshore Substation. The Onshore Infrastructure Drainage Strategy will be developed in line with the latest relevant drainage guidance notes in consultation with the Environment Agency, Lead Local Flood Authority and relevant Internal Drainage Board as appropriate.	DCO Requirement 13 (Surface and foul water drainage) DCO Requirement 15 (Surface water)
Co61	Secondary: Prior to the commencement of works, the contractor (or project appointed Agricultural Liaison Officer) will undertake soil condition surveys and intrusive soil survey trial pits to identify and describe the physical and nutrient characteristics of the existing soil profiles. Such work will inform the reinstatement under Co10.	DCO Requirement 17 (CoCP)
Co63	Primary: The haul road will be installed within the works area of the onshore Export Cable Corridor (ECC) to minimise impacts during construction on agricultural land. With the exception of a section of haul road at Beck Hill (south of Gembling House, YO25 8HS) and Miles Lane (Leconfield, HU17 7RB).	DCO Requirement 17 (CoCP)
Co68	Secondary: All logistics compounds will be removed, and sites will be reinstated when construction has been completed.	DCO Requirement 17 (CoCP) DCO Requirement 20 (Restoration of land used temporarily for construction)
Co79	Primary: Disturbance to PRoWs will be temporary where reasonably practicable and PRoWs will be reinstated as soon as reasonably practical. A PRoW Management Plan will be developed in accordance with the Outline PRoW Management Plan. The PRoW Management Pan will include details of temporary and permanent diversions, closures, gated crossings and signage to be provided during construction.	DCO Requirement 17 (CoCP)

Commitment (Co) Identification reference	Measure Proposed	How the measure will be secured
Co114	Tertiary: Good practice air quality management measures will be applied where human receptors reside within 350 m of works or ecological receptors are present within 200 m, as described in Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction 2014, version 1.1, or latest relevant available guidance.	DCO Requirement 17 (CoCP)
Co123	Tertiary: Based on noise modelling results, where noise has the potential to cause significant adverse effects, mufflers and acoustic barriers will be used where HDD is being undertaken.	DCO Requirement 17 (CoCP)
Co124	Tertiary: A Code of Construction Practice (CoCP) will be developed in accordance with the outline CoCP. The outline CoCP will include measures to reduce temporary disturbance to residential properties, recreational users, and existing land users.	DCO Requirement 17 (CoCP)
Co127	Tertiary: An Onshore Decommissioning Plan will be developed prior to decommissioning in a timely manner. The Onshore Decommissioning Plan will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure and details relevant to flood risk, pollution prevention and avoidance of ground disturbance. The Onshore Decommissioning Plan will be in line with the latest relevant available guidance.	DCO Requirement 24 (Onshore decommissioning)
Co134	Primary: Cable installation works at the landfall area will be located at least 200 m from residential receptors.	DCO Works Plan – Onshore
Co158	Secondary: Impacts on the English Coast Path national route will be minimised through site design considerations and phasing within working constraints for the landfall construction. In addition, Co79 will be applied to the English Coast Path national route.	DCO Requirement 17 (CoCP)
Co165	Secondary: Where Public Rights of Way (PRoWs) are required to be closed during the construction of the onshore export cable corridor and landfall connection works, they will not be closed for any longer than three months at any one time, or for six months in total over the whole construction period. Where closures are required for longer period due to unforeseen circumstances encountered during construction, East Riding of Yorkshire Council will be informed in writing.	DCO Requirement 17 (CoCP)
Co192	Secondary: The beach at landfall will not be closed for public access during construction, unless an unforeseen and unplanned event occurs during which emergency access is required. Details will be agreed through the approval of a	DCO Requirement 17 (CoCP)

Commitment (Co) Identification reference	Measure Proposed	How the measure will be secured
	Code of Construction Practice (CoCP) with ERYC prior to construction of the connection works.	

6.9 Maximum Design Scenario (MDS)

6.9.1.1 This section describes the parameters on which the land use and agriculture assessment has been based. These are the parameters which are judged to give rise to the maximum levels of effect for the assessment undertaken, as set out in **Volume A1, Chapter 4: Project Description**. Should Hornsea Four be constructed to different parameters within the design envelope, then impacts would not be any greater than those set out in this ES using the MDS presented in **Table 6.14**.

Table 6.14: Maximum design scenario for impacts on land use and agriculture.

Impact and Phase	Embedded Mitigation Measures	Maximum Design Scenario / Rochdale Envelope	Justification
Construction			
Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities. (LUA-C-1)	Primary: Co63 Secondary: Co68 Tertiary: Co8 Co10 Co19 Co61 Co124	**Landfall**: • Construction duration: 32 months; and • Landfall compound: Number: 1, Total Area: 40,000 m^2 Duration: 32 months. **Onshore ECC**: • Construction duration: 30 months; • Primary logistics compounds: Number 1, Size: 140x140 m, Duration: 36 months • Secondary logistics compounds: Number: 7, Size: 90x00 m, Duration: 36 months; • ECC: Length: 39 km (approximate), Width: 80 m, Area: 3,120,000 m^2; and • Temporary access roads: Number: 36, Width: 6 m (with 7 m passing places) **OnSS and Energy Balancing Infrastructure**: • Construction duration: 43 months; • Permanent infrastructure area: 164,000 m^2; • Temporary works area: 130,000 m^2; and • Permanent access road: Number: 1, Length: 1,800 m, Width: 15m (7 m road, 8 m soil storage). **400 kV ECC**: • Number of cable circuits: 4 • Cable trench depth: 1.5m • Approximate Length: 1 km • Width: 60 m	These parameters represent maximum ground disturbance conditions both in terms of potential area affected and in duration for Hornsea Four project elements that have the potential to disrupt agricultural land and farm holdings. Details related to the intertidal working area, and specific details on project infrastructure within the onshore working area is not relevant to this assessment. This is because the maximum extent of ground disturbance has been assessed.
Construction and Operational Phases			
No likely significant effects identified for assessment			
Decommissioning			
No likely significant effects identified for assessment			

6.10 Assessment methodology

6.10.1.1 The assessment methodology for land use and agriculture is consistent with that presented in Annex C of the Hornsea Four Scoping Report (Orsted 2018) and takes into account subsequent consultation feedback where appropriate (Section 6.4).

6.10.2 Impact assessment criteria

6.10.2.1 The criteria for determining the significance of effects is a two-stage process that involves defining the sensitivity of the receptors and the magnitude of the impacts. This section describes the criteria applied in this chapter to assign values to the sensitivity of receptors and the magnitude of potential impacts. The terms used to define sensitivity and magnitude are based on those used in the DMRB methodology that and are detailed in Volume A1, Chapter 5: EIA Methodology.

6.10.2.2 For assessing environmental effects on land use and agriculture, the interim Advice Note 125/15 of the DRMB advises the assessment should consist of an amalgamation of DMRB, Volume 11, Section 3, Part 6: Land Use and Section 3, Part 8: Pedestrians, Cyclists, Equestrians and Community Effects.

6.10.2.3 The criteria for defining sensitivity and magnitude in this chapter are outlined in Table 6.15 and Table 6.16 respectively.

Table 6.15: Definition of terms relating to receptor sensitivity.

Sensitivity	Agricultural receptors	Recreational receptors
Very High	Presence of "*best and most versatile land*" (Grades 1,2,3a), conventionally farmed intensive arable cropping or intensive livestock systems (e.g. dairy cattle).	High importance and rarity, national scale and very limited potential for substitution.
High	Presence of land of moderate quality (Grade 3b), conventionally farmed mixed cropping and livestock systems of moderate intensity.	High or medium importance and rarity, regional scale, limited potential for substitution.
Medium	Presence of land of poor quality (Grade 4), conventionally farmed extensive livestock systems or agricultural land in non-agricultural use.	Low or medium importance and rarity, local scale with potential for substitution.
Low	Presence of land of very poor quality (Grade 5), restricted to permanent pasture, rough grazing and/or forage crop.	Very low importance and rarity, local scale.
Note: Grade 3 land (both 3a and 3b) is assumed to be of 3a quality to ensure a worst-case assessment. As such, High sensitivity is not assigned within this chapter in relation to agricultural receptors.		

Table 6.16: Definition of terms relating to magnitude of an impact.

Sensitivity	Agricultural receptors	Recreational receptors
Major	Permanent loss of more than 50 ha of the "*best and most versatile*" agricultural land.	Loss of resource and/or quality and integrity of receptor, severe damage to key characteristics, features or elements.
	High degree of disruption to cultivation patterns and with high risk of permanent change in land use.	
Moderate	Permanent loss of 20 – 50 ha of the "*best and most versatile*" agricultural land. Medium to long term (5 to 10 years) disturbance of more than 20 ha of "*best and most versatile*" agricultural land.	Loss of resource, but not affecting integrity, partial loss of/damage to key characteristics, features or elements.
	Moderate degree of disruption to cultivation patterns with moderate risk of the change in land use.	
Minor	Permanent loss of 5 – 20 ha of the "*best and most versatile*" agricultural land. Short-term disturbance (<5 years) of more than 20 ha of "*best and most versatile*" agricultural land.	Some measurable change in attributes, quality or vulnerability, minor loss or alteration to one (possibly more) key characteristics, features or elements.
	Minimal degree of disruption to cultivation patterns and low risk of change in land use.	
Negligible	Permanent loss of less than 5 ha of the "*best and most versatile*" agricultural land.	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Minimal or no disruption to cultivation patterns and very low risk of change in land use.	

6.10.2.4 The significance of the effect upon land use and agriculture is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The method employed for this assessment is presented in **Table 6.17**. Where a range of significance of effect is presented in **Table 6.17**, the final assessment for each effect is based upon expert judgement.

6.10.2.5 For the purposes of this assessment, any effects with a significance level of slight or less have been concluded to be not significant in terms of the EIA Regulations.

Table 6.17: Matrix used for the assessment of the significance of the effect.

		Magnitude of impact (degree of change)			
		Negligible	*Minor*	*Moderate*	*Major*
Environmental value (sensitivity)	*Low*	Neutral or Slight (Not Significant)	Neutral or Slight (Not Significant)	Slight (Not Significant)	Slight (Not Significant) or Moderate (Significant)
	Medium	Neutral or Slight (Not Significant)	Slight (Not Significant) or Moderate (Significant)	Moderate or Large (Significant)	Moderate or Large (Significant)
	High	Slight (Not Significant)	Slight (Not Significant) or Moderate (Significant)	Moderate or Large (Significant)	Large or Very Large (Significant)
	Very High	Slight (Not Significant)	Moderate or Large (Significant)	Large or Very Large (Significant)	Very Large (Significant)

6.11 Impact assessment

6.11.1 Construction

6.11.1.1 The single environmental impact listed in **Table 6.14** (along with the associated MDS) has been assessed and is presented below. All other potential effects on land use and agriculture receptors are not considered in detail in this ES as they have been previously considered and assessed as unlikely to be significant, as per **Table 6.12** (please see **Volume A4, Annex 5.1: Impacts Register**).

Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities. (LUA-C-1)

Magnitude of impact

6.11.1.2 Direct (physical) impacts could result from the temporary land take associated with construction works within the entire onshore footprint area, including disturbance associated with the construction of permanent infrastructure, temporary access tracks/haul roads, temporary logistical compound areas and temporary storage areas due to:

- Removal and storage of topsoil and subsoil (trench excavation);
- Excavation of the cable trench and installation of ducts;
- Excavation of joint bays and installation of permanent link boxes;
- Works areas (ECC and logistical compounds); and
- Temporary access tracks (haul roads).

6.11.1.3 The Hornsea Four Order Limits denotes a maximum area of 42 ha at the landfall over a maximum 32-month construction period that may be temporarily disturbed. Such land

includes approximately 34 ha of BMV land which would be temporarily lost or restricted for agricultural practice. However, it should be noted that not all land within the Hornsea Four Order Limits will be disturbed. The area associated with the Landfall Compound that will be disturbed will be a maximum of 4 ha for the landfall works only, with further localised disturbance for accesses, within the overall 42 ha as identified above.

6.11.1.4 Temporary disturbance along the onshore ECC includes approximately 349.05 ha of BMV land (over a maximum area of approximately 350.16 ha within the Onshore ECC area of the Hornsea Four Order Limits, including logistics compounds and accesses), restricting agricultural use during the construction period (a maximum period of 36 months (30 months in addition to logistics compound establishment)).

6.11.1.5 Restricted access to the agricultural land along the onshore ECC could impact associated users due to:

- Field boundaries removed or altered;
- Severance of fields;
- Removal of vegetation and crops; and,
- Land access altered.

6.11.1.6 The land at the OnSS is Grade 2 and thus conforms to the definition of BMV land. The wider OnSS Site and 400 kV NGET connection areas of the Hornsea Four Order Limits (total 53.06 ha), including the 18.9 ha permanent areas, covers 53.06 ha of Grade 2 ALC land. However, temporary disturbance of land at the OnSS will only comprise of the 13 ha temporary works area plus the areas affected permanently (16.38 ha for the permanent works and 2.53 ha for the permanent access tracks). Additionally, the 400 kV NGET connection area will be within the wider search area and not all land within this area will be disturbed. The land will be required for the 400 kV cables to connect to Creyke Beck substation. Restrictions to farming during construction of up to 43 months will be required in these areas during construction.

6.11.1.7 Given the permanent loss of Grade 2 ALC soils will be below 20 ha, the permanent loss element is identified as being of **minor** magnitude.

6.11.1.8 More than 20 ha of the BMV land is predicted to be unavailable at some point during construction across the landfall, onshore ECC and the OnSS. Invariably, there will be disturbance to cultivation patterns occurring. However, disruption effects to the majority of the agricultural land affected will be associated with the long, linear onshore ECC. As the effect will be felt over the approximate 39 km linear onshore ECC route effects will not be concentrated in any one farm holding area avoiding causing large scale disruption to farming practices and cultivation to any single landholding. Development of a CoCP (Co124) to minimise disruption to land users (including farmers) will be implemented to assist farmers in accessing and cultivating land outside of the direct onshore ECC footprint as far as possible.

6.11.1.9 Given the temporary nature of the construction phase, the embedded mitigation and the linear nature of the onshore ECC (along which most of the effects will be felt), the effect of disrupting farming practices and reduction in land available for farming activities is identified as being of **minor** magnitude.

Sensitivity of the receptor

6.11.1.10 The sensitivity of the receptor is considered to be **very high** given almost the entire extent of land take is BMV land arable land (noting that it is assumed that all Grade 3 land is 3a not 3b).

Significance of the effect

6.11.1.11 During the construction period all areas of land that fall within the Hornsea Four Order Limits may be affected, with agricultural land use temporarily changed. Additionally, the works may sever or impede access to parcels of land and affect agricultural practice in close proximity to such works areas. Where practical, such areas have been minimised through the onshore ECC route planning process, with the onshore ECC aligned with field boundaries where possible (**Volume A1, Chapter 3: Site Selection and Consideration of Alternatives**).

6.11.1.12 Following construction Hornsea Four has committed to reinstating land to pre-existing conditions as far as reasonably practical (Co10, as informed by Co61 – physical and nutrient soil testing) and storing and managing soils in accordance with DEFRA Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Ref PB1328) or the latest relevant available guidance (Co8). Due to such tertiary mitigation the impacts of disturbance on the ability of the land to return to its former usage in as short a period as possible will be minimised. Only minor long-term (more than 10 years) changes to soils are predicted to occur on areas utilised for construction with such changes not forecasted to result in alterations to any subsequent agricultural land use.

6.11.1.13 Whilst it is considered there will be a direct effect on soils, it will be localised, temporary and reversible. Given the temporary nature of the impact, and commitment to restore land to pre-existing use wherever possible, it is considered that appropriate, existing farming practices will be able to resume after a short duration following construction. Exceptions to this, where agriculture will be excluded, will be in small areas above link boxes where manholes may be present, each a maximum of 9 m^2.

6.11.1.14 Changes to cultivation practices will occur during the construction phase but a CoCP (Co124) will reduce effects on farming to ensure that disruption is minimised to working practices and that cultivation can take place outside of the project's direct footprint. The footprint of the onshore ECC will temporarily reduce access along a 39 km onshore ECC route but as this is a linear feature disruption to any single landholding is not predicted to be of greater than a minor nature given the embedded mitigation to assist farmers (and other land users) in accessing land whilst construction takes place.

6.11.1.15 Whilst the overall land use is considered to be highly sensitive to change and when assessed against the methodology presented in Table 6.17 without the context and tertiary mitigation identified previously, the effect would be moderate or large (Significant). However, it is important to account for the highly localised, linear and temporary nature of the impact along with the tertiary commitments which will minimise any adverse effects substantially. It is considered that changes resulting in temporary disruption or reduction in land available for farming activities to the BMV agricultural land will be of **slight adverse** significance, which is not significant in EIA terms.

6.11.2 Operation and Maintenance

6.11.2.1 No potentially significant impacts have been identified in relation to operation and maintenance of Hornsea Four on land use and agriculture. Further details are provided in Volume A4, Annex 5.1: Impacts Register.

6.11.3 Decommissioning

6.11.3.1 It is expected that the detail and scope of the decommissioning works for the landfall, onshore ECC and OnSS will be determined by the relevant rules and regulations, as well as industry best practices at the time of decommissioning with an associated Decommissioning Plan being subsequently prepared (Co127).

6.11.3.2 It is considered that impacts associated with the decommissioning phase will be of no greater significance than those identified for the construction phase. Additionally, no additional impacts have been identified which have not been assessed for the construction phase that could result in LSE during decommissioning. The onshore export cables will be left in situ underground with the cable ends cut, sealed and securely buried. The external structures of the joining pits and link boxes along the corridor will be removed only if it is feasible with minimal environmental disturbance. All relevant construction management, mitigation and project commitments are applicable to the decommissioning phase also.

6.12 Cumulative effect assessment (CEA)

6.12.1.1 Cumulative effects can be defined as:

- effects upon a single receptor to arise as a result of impact interaction between different environmental topics from Hornsea Four; and
- incremental effects on that same receptor from other proposed and reasonably foreseeable projects and developments in combination with Hornsea Four. This includes all projects that result in a comparative effect that is not intrinsically considered as part of the existing environment and is not limited to offshore wind projects.

6.12.1.2 The overarching method followed in identifying and assessing potential cumulative effects in relation to the onshore environment is set out in Volume A4, Annex 5.5: Onshore Cumulative Effects and Volume A4, Annex 5.6: Location of Onshore Cumulative Schemes.

The approach is based upon the Planning Inspectorate (PINS) Advice Note 17: Cumulative Effects Assessment (PINS, 2019. The approach to the CEA is intended to be specific to Hornsea Four and takes account of the available knowledge of the environment and other activities around the Hornsea Four Order Limits.

6.12.1.3 The CEA has followed a four-stage approach developed from PINS Advice Note 17. These stages are set out in Table 2 of **Volume A4, Annex 5.5: Onshore Cumulative Effects**, with Table 4 detailing the onshore long list search areas extents or Zone of Impacts for each topic area. The proposed tier structure that is intended to ensure that there is a clear understanding of the level of confidence in the cumulative assessments provided in the Hornsea Four ES is set out in Table 3 of **Volume A4, Annex 5.5: Onshore Cumulative Effects**.

6.12.2 CEA Stage 2 Shortlist and Stage 3 Information Gathering

6.12.2.1 A short list of projects for CEA has been produced using the screening criteria set out in Table 2 of **Volume A4, Annex 5.5: Onshore Cumulative Effects.** Information regarding all other developments is provided in **Volume A4, Annex 5.5: Onshore Cumulative Effects** and **Volume A4, Annex 5.6: Location of Onshore Cumulative Schemes**.

6.12.2.2 Sixteen projects have been identified for inclusion on the shortlist of projects to be assessed cumulatively for land use and agriculture. The remaining projects have not been considered as resulting in likely cumulative significant effects (for this topic) as they are located in excess of 1 km from the Hornsea Four Order Limits. Summary information on the shortlist projects progressing through this exercise (i.e. the short-list of other projects) for assessment land use and agriculture is provided below in **Table 6.19**.

6.12.3 CEA Stage 3 Assessment

6.12.3.1 As stated in Table 2 of **Volume A4, Annex 5.5: Onshore Cumulative Effects**, the assessment is undertaken in two phases:

- **Table 6.18** sets out the potential impacts assessed in this chapter and identifies the potential for cumulative effects to arise, providing a rationale for such determinations; and
- **Table 6.19** sets out the CEA for each of the projects/developments that have been identified on the short-list of projects screened.

6.12.3.2 It should be noted that the second phase of this assessment is only undertaken if the first phase identifies that cumulative effects are possible. This summary assessment is set out in **Table 6.18**.

Table 6.18: Potential cumulative effects.

Impact		Potential for Cumulative Effect?	Rationale
Construction			
LUA-C-1	Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities.	Yes	Cumulative disruption or reduction in landholdings could occur if other developments which change agricultural land use take place concomitantly with the construction phase of Hornsea Four.
LUA-C-2	Impacts of construction may affect recreational use of the coast through temporary disruption to beach access and coastal paths.	Yes	Any other projects that disrupt access to the beach or its wider usage may have additive, cumulative effects.
LUA-C-3	Impacts of construction may affect recreational resources and amenity (noise, dust, and traffic movements)	Yes	Impacts to recreational resources or areas of amenity may be exacerbated by other projects.
LUA-C-4	Impacts of construction may affect National Cycle Network Routes, other PRoW and promoted routes, resulting in severance, temporary diversion or closure.	Yes	Other projects affecting National Cycle Network Routes or other PRoW could result in cumulative effects.
Operation			
LUA-O-5	Impacts of operation may affect National Cycle Network Routes, other PRoW and promoted routes, resulting in severance, temporary diversion or closure.	Yes	Other projects affecting National Cycle Network Routes or other PRoW could result in cumulative effects.
LUA-O-6	Impacts of operation and maintenance of the cable route corridor and onshore substation may affect agricultural land and farm holdings, resulting in permanent disruption or reduction in land available for farming activities.	No	Significant effects to disruption from reduction of land and effects on BMV agricultural land, are unlikely during the operational phase of Hornsea Four, noting the commitment to reinstatement as per Co10. Sections of the onshore ECC may be affected temporarily if repair/investigation activities are required, although impacts would be minimal and likely short lived. This issue was agreed to be scoped out by PINS in their Scoping Opinion.

Impact		Potential for Cumulative Effect?	Rationale
			Similarly, effects are therefore also not considered to arise that would be significant when considered cumulatively with other reasonably foreseeable projects and development.
Decommissioning			
LUA-D-7	Impacts of decommissioning above ground installations may temporarily affect agricultural land and farm holdings, resulting in temporary disruption or reduction in land available for farming activities.	Yes	A decommissioning plan (Co127) will be developed to remove all onshore above ground infrastructure and the decommissioning of below ground infrastructure. There is the potential for such activities to act cumulatively with other projects active at the time which may affect agricultural land. However, any effects will be of an equal or lower magnitude to those identified for the construction phase.

6.12.3.3 The second phase of the CEA is a project specific assessment of the potential for any significant cumulative effects to arise due to the construction and/or operation and maintenance of Hornsea Four. To identify whether this may occur each shortlisted project is discussed in **Table 6.19**.

6.12.3.4 The CEA has been based on information available on each potential project (e.g. as set out on ERYC planning portal or in an attendant, available ES) and it is noted that the project details available may change in the period up to construction or may not be available in detail at all. The assessment presented here is therefore considered to be conservative, with the level of impacts expected to be reduced compared to those presented here.

6.12.3.5 The CEA has not identified any potential impacts that are considered to be of any greater significance than those identified in isolation and no cumulative effects of significance are forecast.

Table 6.19: CEA for land use and agriculture.

Project Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
Jocks Lodge Highway Improvement Scheme	1	There is an overlap in the project redline boundary of this scheme with the redline boundary of Hornsea Four. However, with planning permission be for the Jocks Lodge improvement scheme granted in July 2020, it is	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the nature of this development

Project Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
		anticipated that the majority of construction works will have been completed prior to the start of construction works at Hornsea Four in 2024. Therefore, only minor effects on agricultural land will occur.	and its location away from the direct Hornsea Four project footprint.
Dogger Bank A	2	Construction for Creyke Beck A and B is proposed to take place in 2020-2022. Construction of these projects will affect National Cycle Route 1 and a number of PRoW to the north of the OnSS and near Ulrome Sands where temporary diversions will be required during works to cross these features by the export cable. Minor, and temporary loss, of agricultural land will take place near Fraisthorpe Beach during construction. There is no overlap in construction with Hornsea Four and no significant operational changes to land use/agriculture or PRoW are predicted from Creyke Beck.	Cumulative effects are not predicted due to the differing construction phases of these projects and Hornsea Four. Operational effects are not predicted in relation to PRoW and long-term loss of agricultural land is minor. No significant cumulative effects are predicted.
Dogger Bank B	2		
Low Farm Development	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four Order Limits.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 800 m outside of the direct onshore project footprint.
Leconfield Post Office Development #1	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four Order Limits.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 940 m outside of the direct onshore project footprint.
Eastfield Farm Solar	1	No PRoW directly impacted by Hornsea Four will be affected and any	No likely significant cumulative effects are predicted in relation to any construction or

Project Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
		changes to land use are minor and at distance from the Hornsea Four Order Limits.	operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 1km outside of the direct onshore project footprint.
Canada Drive Housing Development	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four Order Limits.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 930 m outside of the direct onshore project footprint.
Leconfield Post Office Development #2	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four Order Limits.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 880 m outside of the direct onshore project footprint.
Beverley Racecourse	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four Order Limits.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 650 m outside of the direct onshore project footprint.
Decoy House Farm Development	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four Order Limits.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 1 km outside of the direct onshore project footprint.
White House Farm Development	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four Order Limits.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 700 m outside of the direct onshore project footprint.
Model Farm Development	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of

Project Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
		distance from the Hornsea Four Order Limits.	PRoW) due to the scale of this development, and its location 700 m outside of the direct onshore project footprint.
Dogger Bank Cable Corridor	1	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four Order Limits.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, and its location 400 m outside of the direct onshore project footprint.
Albanwise Solar Farm	1	The earliest construction start date for Hornsea Four is anticipated to be in 2024. A planning application for the solar farm and battery storage area has been submitted in August 2021, and although a start date for construction works is as yet unknown, there is the possibility that construction works could overlap. An Agricultural Quality of Land technical report was submitted to support the planning application. The technical report was informed by a survey that characterised the arable land as 3a and 3b (noting that this is a lower classification than that has been assumed for the Hornsea Four impact assessment, using desk-based data). Whist the survey does not cover the Hornsea Four OnSS order limits, given the proximity to the solar farm it can be reasonably considered that the lower 3a and 3b BMV classification could apply to other land within the surrounding area. In isolation, the Hornsea Four OnSS does not result in a significant permanent loss of BMV land and when considered in combination with the solar farm, does not result in a significant cumulative effect. Regarding other impacts associated with Land Use and Agriculture (such as	No potential for significant cumulative effects.

Project Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
		but not limited to impacts on PRoW), due to the nature of the development and the regulatory regime under which it will be constructed, it is assumed (with high confidence) that appropriate mitigation measures will be incorporated into the design thus limiting the potential for cumulative effects to occur.	
Creyke Beck Substation Expansion	3	As the earliest construction start date for Hornsea Four is anticipated to be in 2024, there is the possibility that construction works could overlap. The location of the substation expansion is currently unknown and as such, details on the impacted land (be it agricultural land or other) is unknown. Based on available information (such as anticipated site size), in isolation, the Hornsea Four OnSS does not result in a significant permanent loss of BMV land and when considered in combination with the substation expansion, does not result in a significant cumulative effect. However, due to the nature of the development and the regulatory regime under which it will be constructed, it is assumed (with high confidence) that appropriate mitigation measures will be incorporated into the design thus limiting the potential for cumulative effects to occur.	No potential for significant cumulative effects.
Scotland England Green Link 2 (SEGL2)	3	As the earliest construction start date for Hornsea Four is anticipated to be in 2024, there is the possibility that construction works could overlap. However, due to the nature of the development and the regulatory regime under which it will be constructed, it is assumed (with high confidence) that appropriate mitigation	No potential for significant cumulative effects.

Project Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
		measures will be incorporated into the design thus limiting the potential for cumulative effects to occur.	

6.12.3.6 The CEA for land use and agriculture does not identify any reasonably foreseeable projects or developments where significant cumulative effects could arise.

6.13 Transboundary effects

6.13.1.1 A screening of transboundary impacts is presented in Appendix K of the Scoping Report (Orsted, 2018). This screening exercise identified that there was no potential for significant transboundary effects regarding land use and agriculture from Hornsea Four upon the interests of other EEA States and this is not discussed further.

6.14 Inter-related effects

6.14.1.1 Inter-related effects consider impacts from the construction, operation or decommissioning of Hornsea Four on the same receptor (or group). The potential inter-related effects that could arise in relation to land use and agriculture are presented in **Table 6.20**. Such inter-related effects include both:

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

6.14.1.2 A description of the process to identify and assess these effects is presented in Section 2 of **Volume A1, Chapter 5: Environmental Impact Assessment Methodology**.

Table 6.20: Inter-relationships with land use and agriculture.

Nature of inter-related effect	Assessment
Project-lifetime effects	
Construction and Operation: Impacts of construction may affect National Cycle Network Routes, other PRoW and promoted routes, resulting in severance, diversion or closure. (LUA-C-4 & LUA-O-5)	Although 28 PRoW will be temporarily affected during construction only two of these PRoW will be impacted during operation (SKID16 and ROWLB13) – a footpath and bridleway respectively, both used on a local level. Considering the permanent diversions of these routes (Co79) and the proposed enhancement measures the assessment of this project lifetime

Nature of inter-related effect	Assessment
	effects is assessed as being the same as the effect in relation to the operational phase, i.e. **slight adverse** (and not significant in EIA terms). This was assessed as part of the EIA, as set out in the PEIR (Orsted, 2019b) and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**).
Receptor-led effects	
Construction: Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities. (LUA-C-1)	Cumulative effects on agricultural land and disruption to farming activities may result from effects on water resources, traffic and contaminated land/soils. **Chapter 7: Traffic and Transport** does not identify any significant effects in respect of delay or severance, which would affect farming activities following the incorporation of mitigation. Disruption to land drainage was not considered in detail in the EIA (HFR-C-5), as presented in **Chapter 2 Hydrology and Flood Risk**, with provision for a drainage strategy (see **Volume F2, Chapter 6: Outline Onshore Infrastructure Drainage Strategy**) to be compiled to ensure works associated with cable installation won't affect the integrity of local land drainage systems. The issue of encountering contamination during site works (GGC-C-4) (which could lead to impacts on neighbouring farming practices and land use) has been assessed in **Chapter1: Geology and Ground Conditions** as slight adverse significance with a commitment to develop a contaminated land and groundwater scheme to identify contamination and any remedial measures in advance of site work (Co77). Considering all of the above no additional inter-related effects are predicted which would increase the standalone assessment from **slight adverse** (and not significant in EIA terms).
Construction: Impacts of construction may affect recreational use of the coast through temporary disruption to beach access and coastal paths. (LUA-C-2)	Recreational use of the coast may also be affected by noise and vibration, with traffic impacts potentially causing access issues that could result in inter-related effects. **Chapter 8: Noise and Vibration** predicts a negligible magnitude of noise effects at receptors near the beach (NV-C-3). Noise is therefore not predicted to cause additional inter-related effects above the standalone assessment. **Chapter 7: Traffic and Transport** does not identify any significant effects on road links near the coast including the A165 which provides the main access to this part of the coast from further afield. Additionally, amendments to the Hornsea Four Order Limits

Nature of inter-related effect	Assessment
	have been made to avoid use of the road used as the primary vehicular access to the beach at landfall (**Volume A1 Chapter 3: Site selection and Consideration of Alternatives**). Considering all of the above no additional inter-related effects are predicted which would increase the standalone assessment from **slight adverse** (and not significant in EIA terms).
Construction: Impacts of construction may affect recreational resources and amenity (noise, dust, and traffic movements). (LUA-C-3)	There is the potential for the noise, dust and traffic movements created by the construction works to impact upon recreational resources and amenity, however through the use of appropriate mitigation and commitment to reduce temporary disturbance to recreational users (Co124) these impacts have been scoped out of any assessment as non-significant as set out in the PEIR and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**, **Chapter 7: Traffic and Transport**, **Chapter 8: Noise and Vibration** and **Chapter 9: Air Quality**).
Construction: Impacts of construction may affect National Cycle network Routes, other PRoW and promoted routes, resulting in severance, temporary diversion or closure (LUA-C-4)).	Traffic and transport has the potential to cause severance, temporary diversion or closure of PRoW where such features are connected to the road network (e.g. cycle way 164 runs along the B1230 through Walkington (road link 90)). The traffic and transport assessment set out in **Chapter 7: Traffic and Transport** includes an assessment of pedestrian amenity on road links (TT-C-7). Once additional mitigation is applied the significance of impacts on pedestrian amenity is considered to be slight adverse at worst on all links including those adjoining or in proximity to the PRoW network. Given this level of effect and also the slight adverse standalone effect on PRoW no inter-related effects are therefore predicted which would increase the standalone assessment from **slight adverse (**and not significant in EIA terms). This was assessed as part of the EIA, as set out in the PEIR and confirmed in the impact register (**Volume A4, Annex 5.1: Impacts Register**).
Operation: Impacts of construction may affect National Cycle network Routes, other PRoW and promoted routes, resulting in severance, diversion or closure (LUA-O-5).	Traffic and transport has the potential to cause severance, temporary diversion or closure of PRoW. However, such operational phase traffic and transport impacts (TT-O-10) have been scoped out because no likely significant effects have been identified. No inter-related effects are therefore predicted which would increase the standalone assessment from **slight adverse** (and not significant in EIA terms).

6.14.1.3 The assessment concludes that there are no significant inter-related impacts from the construction or operation of Hornsea Four on land use and agriculture.

6.15 Conclusion and summary

6.15.1.1 This chapter of the ES has assessed the potential impact from the onshore development of Hornsea Four on land use and agriculture receptors.

6.15.1.2 **Table 6.21** presents a summary of the impacts assessed within this ES, the associated mitigation and the residual effects.

6.15.1.3 Construction phase impacts relating to the disruption to or loss of agricultural land has been assessed. Residual impacts are assessed as **slight significance** given the temporary nature of the effect and the sensitivity of the receptors to such temporary changes once tertiary mitigation commitments have been taken account of. It should be noted that potential effects from noise and vibration, air quality, and traffic and transport on recreational and amenity are presented in these respective technical chapters of the ES.

6.15.1.4 The construction phase of Hornsea Four presents the highest potential for significant environmental effects. Impacts during decommissioning would result in an effect of equal significance, at worst. Further details will be provided and secured within a Decommissioning Plan, agreed with stakeholders prior to decommissioning commencing.

6.15.1.5 No cumulative or inter-related effects have been identified which increase the significance of any standalone assessment set out in this chapter.

6.15.1.6 In summary, **no impacts** have been identified which are considered significant in EIA terms on land use and agricultural resources.

Table 6.21: Summary of potential impacts assessed for land use and agriculture.

Impact and Phase	Receptor and value/sensitivity	Magnitude and significance	Mitigation	Residual impact
Construction				
Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities. (LUA-C-1)	Very High (due to presence of 'best and most versatile' agricultural land	Minor (due to the temporary nature of the effect, the linear nature of the ECC avoiding concentrated disruption to any single farm holding and embedded mitigation)	None proposed beyond existing commitments (Co63, Co68, Co8, Co10, Co19, Co61, Co124)	Slight adverse, which is not considered to be significant in EIA terms.

6.16 References

AECOM (2018). East Riding of Yorkshire Landscape Character Assessment 2018

Cranfield (2012) National Soil Resources Institute: Soilscapes Viewer.

Countryside Rights of Way Act (2000). Natural England CRoW Act 2000 – Section 4 Conclusive Registered Common Land.

Department for Environment, Food and Rural Affairs (2009). Construction code of practice for the sustainable use of soils on construction sites.

Department for Environment and Climate Change (DECC), 2011 Overarching National Policy Statement (NPS) for Energy (EN-1).

Department for Environment, Food and Rural Affairs (2016). Agriculture in the United Kingdom 2016.

East Riding Yorkshire Council (2011). Land Management Action Plan.

East Riding Yorkshire Council (2016). East Riding Local Plan 2012 – 2029. Strategy Document.

East Riding Data Observatory (2017). Population Assessment (online). Available at: http://dataobs.eastriding.gov.uk/profiles/profile?profileId=177&geoTypeId (Accessed July 2021).

Ministry of Agriculture, Fisheries and Food (MAFF) (1988) Agricultural Land Classification of England and Wales, Revised guidelines and criteria for grading the quality of agricultural land.

Multi-Agency Geographic Information for the Countryside (MAGIC) (2012) Interactive Map

Natural England (2005) Countryside Character Volume 3: Yorkshire and The Humber.

Natural England (2012). Agreement holders' information: Environmental Stewardship. Natural England (2019). England Coast Path: Easington to Filey Brigg.

Natural England (2013). Coastal Access - Natural England's Approved Scheme. Available at: http://publications.naturalengland.org.uk/publication/5327964912746496 [Accessed July 2021].

Natural England (2015). Environmental Stewardship: guidance and forms for agreement holders. Available online at: https://www.gov.uk/government/collections/environmental-stewardship-guidance-and-forms-for-existing-agreement-holders [Accessed: July 2021].

Natural England (2018). England Coast Path: Easington to Filey Brigg - Natural England's Proposals. Chapter 3: Hornsea to Wilsthorpe. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/683864/easington-filey-brigg-report-chapter-3.PDF [Accessed: July 2021].

Orsted (2018). Hornsea Four Scoping Report

Orsted (2019a). Preliminary Environmental Information Report, Volume 3, Chapter 1: Geology and Ground Conditions <https://orstedcdn.azureedge.net/-/media/www/docs/corp/uk/hornsea-project-four/01-formal-consultation/pier/volume-3/peir-volume-3-chapter-1-geology-and-ground-conditions.ashx?la=en&rev=a94cdbabc6d441bba1e140d567a1dc6f&hash=A945AABC8A4136723BACB3F8C4A7E991>

Orsted (2019b). Preliminary Environmental Information Report, Volume 3, Chapter 7: <https://orstedcdn.azureedge.net/-/media/www/docs/corp/uk/hornsea-project-four/01-formal-consultation/pier/volume-3/peir-volume-3-chapter-6-land-use-and-agriculture.ashx?la=en&rev=921ae795f3fb4f13b3c30d679a535d5a&hash=4E0A6C3BD202F35517F1A73B913F9092>

PINS (2012) Advice note six: Preparation and submission of application documents. Bristol, PINS.

PINS (2018) Scoping Opinion: Proposed Hornsea Four Wind Farm, Bristol, PINS.

PINS (2019) Advice note seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects

Sohl, Terry., Sleeter, Benjamin., Sayler, Kristi, Bouchard, Michelle., Reker., Ryan, Bennett., Sleeter, Rachel., Kanengieter, Ronald and Zhu, Zhiliang (2012). Spatially explicit land-use and land-cover scenarios for the Great Plains of the United States.

Wu, JunJie and Li, Man. (2013). Land Use Change and Agricultural Intensification: Key Research Questions and Innovative Modelling Approaches.