RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

Environmental Statement

Volume 7

Chapter 21 – Land Use

June 2024

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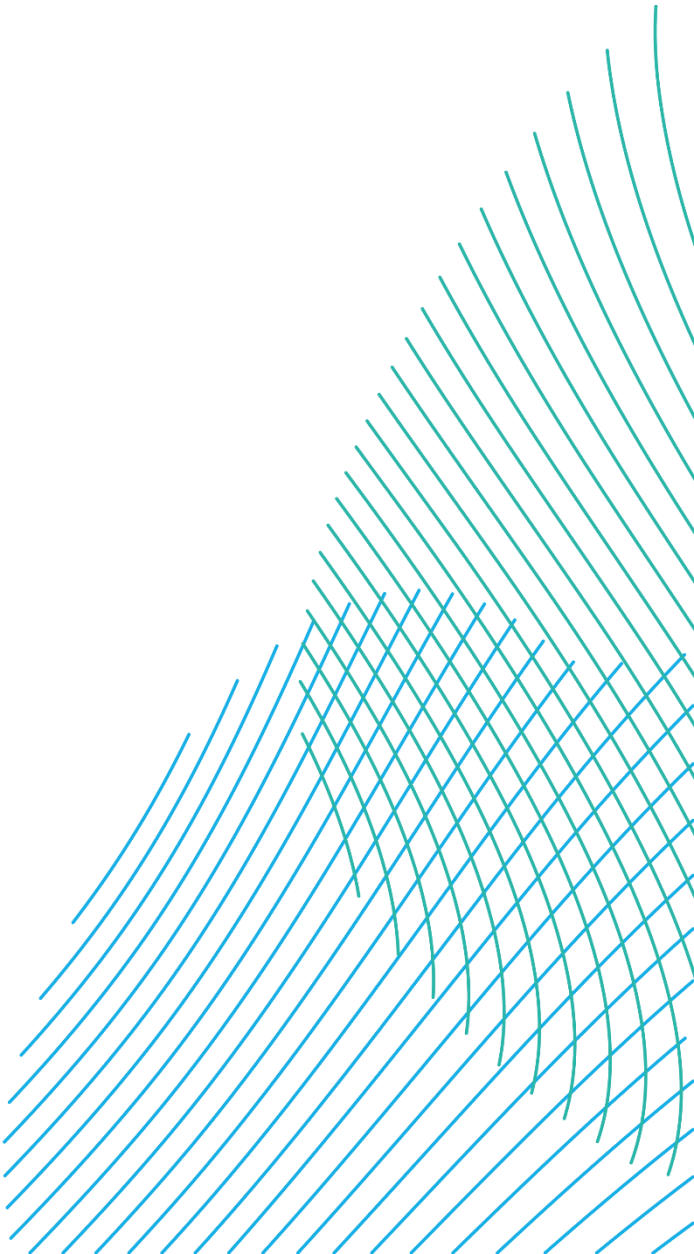

Unrestricted

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Glossary

Term	Definition
Agricultural Land Classification	Agricultural Land Classification is a grading system used to assess and compare the quality of agricultural land in England and Wales. A combination of climate, topography and soil characteristics and their unique interaction determines the grade of the land. The grades range from 1 to 5. Grade 1 being excellent, Grade 2 very good, Grade 3a and 3b good to moderate (no subdivide), Grade 4 poor and Grade 5 very poor.
Baseline	The existing conditions as represented by the latest available survey and other data which is used as a benchmark for making comparisons to assess the impact of the Projects.
Concurrent Scenario	A potential construction scenario for the Projects where DBS East and DBS West are both constructed at the same time.
Cumulative effects	The combined effect of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor/resource.
Cumulative Effects Assessment (CEA)	The assessment of the combined effect of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor/resource.
Cumulative Impact	The combined impact of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor/resource.
Decommissioning Plan	A document which would define the extent of works, in relation to the onshore infrastructure, which are required to be undertaken at the end of the operational lifetime of the Projects. The plan would be subject to agreement with relevant stakeholders at the time.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).

Term	Definition
Development Scenario	Description of how the DBS East and/or DBS West Projects would be constructed either In Isolation, Sequentially or Concurrently.
Dogger Bank South (DBS) Offshore Wind Farms	The collective name for the two Projects, DBS East and DBS West.
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 value, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
EIA Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
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).
Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach, and information to support, the Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) for certain topics.
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
Haul Road	The track along the Onshore Export Cable Corridor used by traffic to access different sections of the Onshore Export Cable route for construction.

Term	Definition
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.
High Water	Maximum level reached by the rising tide.
Horizontal Directional Drill (HDD)	HDD is a trenchless technique to bring the offshore cables ashore at the landfall and can be used for crossings other obstacles such as roads, railways and watercourses onshore.
In Isolation Scenario	A potential construction scenario for one Project which includes either the DBS East or DBS West array, associated offshore and onshore cabling and only the eastern Onshore Converter Station within the Onshore Substation Zone and only the northern route of the onward cable route to the proposed Birkhill Wood National Grid Substation.
Jointing Bays	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into buried ducts.
Landfall	The point on the coastline at which the Offshore Export Cables are brought onshore, connecting to the onshore cables at the Transition Joint Bay (TJB) above mean high water.
Landfall Zone	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) and the Transition Joint Bays (TJBs) inclusive of all construction works, including the landfall compounds, Onshore Export Cable Corridor and intertidal working area including the Offshore Export Cables.

Term	Definition
Link Boxes	An underground metal box placed within a concrete pit where the metal sheaths between adjacent export cable sections are connected and earthed, installed with a ground level manhole to allow access to the link box for regular maintenance or fault-finding purposes.
Mean High Water Springs (MHWS)	MHWS is the average of the heights of two successive high waters during a 24 hour period.
Mean Low Water Springs (MLWS)	MLWS is the average of the heights of two successive low waters during a 24 hour period.
National Policy Statement (NPS)	A document setting out national policy against which proposals for NSIPs will be assessed and decided upon.
Nationally Significant Infrastructure Project (NSIP)	Large scale development including power generating stations which requires development consent under the Planning Act 2008. An offshore wind farm project with a capacity of more than 100MW constitutes an NSIP.
Offshore Export Cables	The cables which would bring electricity from the offshore platforms to the Transition Joint Bays (TJBs).
Onshore Converter Stations	A compound containing electrical equipment required to transform HVDC and stabilise electricity generated by the Projects so that it can be connected to the electricity transmission network as HVAC. There will be one Onshore Converter Station for each Project.
Onshore Development Area	The Onshore Development Area for ES is the boundary within which all onshore infrastructure required for the Projects would be located including Landfall Zone, Onshore Export Cable Corridor, accesses, Temporary Construction Compounds and Onshore Converter Stations.

Term	Definition
Onshore Export Cable Corridor	This is the area which includes cable trenches, Haul Roads, spoil storage areas, and limits of deviation for micro-siting. For assessment purposes, the cable corridor does not include the Onshore Converter Stations, Transition Joint Bays or temporary access routes; but includes Temporary Construction Compounds (purely for the cable route).
Onshore Export Cables	Onshore Export Cables take the electric from the Transition Joint Bay to the Onshore Converter Stations.
Onshore Grid Connection Points	The Onshore Grid Connection Points is the location where the electricity produced by the Projects would be transferred to the national grid. There are two Onshore Grid Connection Points, one for each Project, which will be located in the same place.
Onshore Substation Zone	Parcel of land within the Onshore Development Area where the Onshore Converter Station infrastructure (including the Haul Roads, Temporary Construction Compounds and associated cable routeing) would be located.
Onward Cable Connection	The cable corridor between the Onshore Substation Zone and the Proposed Birkhill Wood National Grid Substation.
Other trenchless techniques	Other techniques (aside from HDD) for installation of ducts or cables where trenching may not be suitable such as micro tunnelling or auger boring.
Planning Inspectorate (PINS)	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of Receptors include species (or groups) of animals, plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.

Term	Definition
Sequential Scenario	A potential construction scenario for the Projects where DBS East and DBS West are constructed with a lag between the commencement of construction activities. Either Project could be built first.
Temporary Construction Compound	An area set aside to facilitate the construction of the Projects. These will be located adjacent to the Onshore Export Cable Corridor and within the Onshore Substation Zone, with access to the highway.
The Applicants	The Applicants for the Projects are RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (West) Limited. The Applicants are themselves jointly owned by the RWE Group of companies (51% stake) and Masdar (49% stake).
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).
Transition Joint Bay (TJB)	The Transition Joint Bay (TJB) is an underground structure at the landfall that houses the joints between the Offshore Export Cables and the Onshore Export Cables.
Transition Joint Bay Compound (TJB)	A temporary construction compound located with the 'Landfall Zone' to undertake the trenchless crossing technique e.g. Horizontal Directional Drilling (HDD) and for the construction of the Transition Joint Bays.
Trenching	Open cut method for cable or duct installation.

Acronyms

Term	Definition
ALC	Agricultural Land Classification
ALO	Agricultural Liaison Officer
BMV	Best Most Versatile
CRoW	Countryside and Rights of Way Act 2000
CSS	Countryside Stewardship Scheme
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ELM	Environmental Land Management
ELS	Entry Level Stewardship
ES	Environmental Statement
HDD	Horizontal Directional Drilling
HLS	Higher-Level Stewardship
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IPC	Infrastructure Planning Commission
LPA	Local Planning Authority
LWS	Local Wildlife Site
MAFF	Ministry of Agriculture, Fisheries and Food
MHWS	Mean High Water Springs

Term	Definition
NE	Natural England
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NSRI	National Soil Research Institute
OELS	Organic Entry Level Stewardship
OS	Ordnance Survey
PEIR	Preliminary Environmental Information Report
PRoW	Public Rights of Way
SMP	Soil Management Plan

21 Land Use

21.1 Introduction

1. This chapter of the Environmental Statement (ES) considers the likely significant effects of the Projects on Land Use. The chapter provides an overview of the existing environment for the proposed Onshore Development Area landward of Mean High Water Springs (MHWS), followed by an assessment of likely significant effects for the construction, operation, and decommissioning phases of the Projects.

2. This Land Use chapter describes the impacts of any temporary or permanent land take within the Onshore Development Area that may occur to the following receptors:

   - Agriculture: including agricultural land cover, agricultural drainage and soil types; and
   - Land use: Environmental Stewardship schemes, designated areas (e.g. Sites of Special Scientific Interest), sites allocations, Public Rights of Way (PRoW), cycle routes, coastal paths and utilities.

3. Recreational and Tourism receptors including, for example recreational fisheries, caravan and holiday parks are considered in **Volume 7, Chapter 29 Tourism, Recreation and Community (application ref: 7.29).** The chapter should be read in conjunction with the following linked chapters:

   - **Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18);**
   - **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)**;
   - **Volume 7, Chapter 20 Flood Risk and Hydrology (application ref: 7.20)**;
   - **Volume 7, Chapter 23 Landscape and Visual Impact Assessment (application ref: 7.23)**;
   - **Volume 7, Chapter 24 Traffic and Transport (application ref: 7.24)**;
   - **Volume 7, Chapter 27 Human Health (application ref: 7.27)**; and
   - **Volume 7, Chapter 29 Tourism, Recreation and Community (application ref: 7.29)**.

21.2 Consultation

4. Consultation with regard to Land Use has been undertaken in line with the general process described in **Volume 7, Chapter 7 Consultation (application ref: 7.7)** and the **Consultation Report (Volume 5, application ref: 5.1)**. The key elements to date have including scoping, the ongoing Evidence Plan Process (EPP) via the Public Rights of Way and Access Expert Topic Group (ETG) and the Preliminary Environmental information Report (PEIR).

5. The feedback received throughout this process has been considered in preparing the ES. This chapter has been updated following consultation in order to produce the final assessment submitted within the Development Consent Order (DCO) application. **Volume 7, Appendix 21-1 (application ref: 7.21.21.1)** provides a summary of the consultation responses received to date relevant to this topic, and details how the comments have been addressed within this chapter.

21.3 Scope

21.3.1 Effects Scoped In and Scoped Out

6. During the Projects scoping stage it was agreed that the following construction and operational impacts are to be assessed within the Land Use PEIR and ES chapters:

   - Agricultural drainage;
   - Temporary and permanent loss of agricultural land;
   - Soil degradation and loss of soil to erosion;
   - Impact to Environmental Stewardship Schemes;
   - Disruption to existing utilities;
   - Disruption to users of recreational routes; and
   - Soil heating (operation phase only).

7. No impacts were scoped out of assessment during the scoping stage.

8. It should be noted that mitigation measures in terms of financial compensation for individual landowners/occupiers are outside of the scope for this chapter.

21.3.2 Study Area

9. The Land Use study area has been defined on the basis of anticipated direct and indirect impacts. The Land Use study area not only includes the land within the Onshore Development Area where direct impacts may occur, but also extends 1km from the Projects' footprint where indirect impacts may occur. The 1km buffer reflects the maximum potential distance within which the impacts on land use have the potential to be significant. **Volume 7, Figure 21-1 (application ref: 7.21.1)** illustrates the Land Use study area.

21.3.3 Realistic Worst Case Scenario

21.3.3.1 General Approach

10. The realistic worst case design parameters for likely significant effects scoped into the ES for the Land Use assessment are summarised in **Table 21-1**. These are based on the Project parameters described in **Volume 7, Chapter 5 Project Description (application ref: 7.5)**, which provides further details regarding specific activities and their durations.

11. In addition to the design parameters set out in **Table 21-1**, consideration is also given to the different Development Scenarios still under consideration as set out in sections 21.3.3.2 to 21.3.3.4.

Table 21-1 Realistic Worst Case Design Parameters

	Parameter			
	DBS East or DBS West In Isolation	**DBS East and DBS West Concurrently**	**DBS East and DBS West Sequentially**	**Notes and rationale**
Construction				
Landfall Zone	• Total Landfall Zone area: 420,000m^2 • Landfall TJB compound works area (m): 110 x 75 • Number of completed trenchless crossing ducts (maximum): 3 (2 for power cables, 1 for fibre optic cable) • Indicative trenchless crossing depth (m): 20 • Number of Transition Joint Bays: 2 • Transition Joint Bay dimensions (m): 5 x 20 • Number of Link Boxes (2.5 x 4m): 2 – the only above ground infrastructure • Landfall Satellite Temporary Construction Compound (m): 75 x 75 • Duration of works: 18 months overall (not continuous)	• Total Landfall Zone area: 420,000m^2 • Landfall TJB compound works area (m): 190 x 75 • Number of completed trenchless crossing ducts (maximum): 6 (4 for power cables, 2 for fibre optic cables) • Indicative trenchless crossing depth (m): 20 • Number of Transition Joint Bays: 4 • Transition Joint Bay dimensions (m): 5 x 20 • Number of Link Boxes (2.5 x 4m): 4 – the only above ground infrastructure • Landfall Satellite Temporary Construction Compound (m): 75 x 75 • Duration of works: up to 18 months overall (not continuous)	• Total Landfall Zone area: 420,000m^2 • Landfall TJB compound works area (m): 190 x 75 • Number of completed trenchless crossing ducts (maximum): 6 (4 for power cables, 2 for fibre optic cables) • Indicative trenchless crossing depth (m): 20 • Number of Transition Joint Bays: 4 • Transition Joint Bay dimensions (m): 5 x 20 • Number of Link Boxes (2.5 x 4m): 4 – the only above ground infrastructure • Landfall Satellite Temporary Construction Compound (m): 75 x 75 • Duration of works: up to 48 months overall (not continuous)	The Projects together are considered as the worst-case scenario when compared to the Projects in isolation due to the requirement for a greater extent of construction works. The Sequential construction of the Projects are considered the worst case scenario as it would require a longer construction period and has the potential to impact on land use receptors during each construction phase.
Onshore Export Cable Corridor from Landfall Zone to the Onshore Substation Zone	• Indicative corridor length between Landfall Zone and the Onshore Substation Zone (km): 32 • Maximum number of trenches: 2 • Cable corridor width (m): 41 • Cable corridor width at trenchless crossings (m): 45 • Number of export circuits: 1 (HVDC) • Number of power cables per circuit: 2 (HVDC)	• Indicative corridor length between Landfall Zone and the Onshore Substation Zone (km): 32 • Maximum number of trenches: 4 • Cable corridor width (m): 75 • Cable corridor width at trenchless crossings (m): 90 • Number of export circuits: 2 (HVDC) • Number of power cables per circuit: 2 (HVDC)	• Indicative corridor length between Landfall Zone and the Onshore Substation Zone (km): 32 • Maximum number of trenches: 4 • Cable corridor width (m): 75 • Cable corridor width at trenchless crossings (m): 90 • Number of export circuits: 2 (HVDC) • Number of power cables per circuit: 2 (HVDC)	

	Parameter			
	DBS East or DBS West In Isolation	**DBS East and DBS West Concurrently**	**DBS East and DBS West Sequentially**	**Notes and rationale**
	• Number of fibre optic (communication) cables per circuit: 1 • Number of earth cables per circuit: 1 • Maximum cable burial depth (where restrictions are not present) (m): 2 • Indicative cable burial depth (m): 1.6 • Approximate depth of trench to top of duct / cables (m): 1.3 – 1.7 • Cable duct trench dimensions: 1.1m base to 3.9m surface for each single. 3.35m base to 6.15m surface for dual HVDC • Number of Earth / Link boxes and associated manhole covers: 103 • Link box construction dimensions (m): 6.5x8 • Jointing Bays (km): every 0.75 – 1.5 • Jointing Bay construction dimensions (per bay): 10 x 25m • Jointing Bay burial depth from existing ground level to bottom of Jointing Bay (m): 2.2 • Jointing Bay depth from existing ground level to top of Jointing Bay (m): 1.35m • Expected maximum trenchless crossing depth: 20m • No. of trenchless crossings compounds: Min 41 and up to maximum of 147 entry compounds • Min 41 and up to maximum of 147 exit compounds	• Number of fibre optic (communication) cables per circuit: 1 • Number of earth cables per circuit: 1 • Maximum cable burial depth (where restrictions are not present) (m): 2 • Indicative cable burial depth (m): 1.6 • Approximate depth of trench to top of duct / cables (m): 1.3 – 1.7 • Cable duct trench dimensions: 1.1m base to 3.9m surface for each single. 3.35m base to 6.15m surface for dual HVDC • Number of Earth / Link boxes and associated manhole covers: 205 • Link box construction dimensions (m): 6.5x8 • Jointing Bays (km): every 0.75 – 1.5 • Jointing Bay construction dimensions (per bay): 10 x 25m • Jointing Bay burial depth from existing ground level to bottom of Jointing Bay (m): 2.2 • Jointing Bay depth from existing ground level to top of Jointing Bay (m): 1.35m • Expected maximum trenchless crossing depth: 20m • No. of trenchless crossings compounds: Min 82 and up to maximum of 294 entry compounds • Min 82 and up to maximum of 294 exit compounds	• Number of fibre optic (communication) cables per circuit: 1 • Number of earth cables per circuit: 1 • Maximum cable burial depth (where restrictions are not present) (m): 2 • Indicative cable burial depth (m): 1.6 • Approximate depth of trench to top of duct / cables (m): 1.3 – 1.7 • Cable duct trench dimensions: 1.1m base to 3.9m surface for each single. 3.35m base to 6.15m surface for dual HVDC • Number of Earth / Link boxes and associated manhole covers: 205 • Link box construction dimensions (m): 6.5x8 • Jointing Bays (km): every 0.75 – 1.5 • Jointing Bay construction dimensions (per bay): 10 x 25m • Jointing Bay burial depth from existing ground level to bottom of Jointing Bay (m): 2.2 • Jointing Bay depth from existing ground level to top of Jointing Bay (m): 1.35m • Expected maximum trenchless crossing depth: 20m • No. of trenchless crossings compounds: Min 82 and up to maximum of 294 entry compounds • Min 82 and up to maximum of 294 exit compounds	

	Parameter			
	DBS East or DBS West In Isolation	**DBS East and DBS West Concurrently**	**DBS East and DBS West Sequentially**	**Notes and rationale**
	• All other crossings assumed to be open cut (see **Appendix 5-2, Obstacle Crossing Register (Volume 7, application ref: 7.5.5.2)**) • Trenchless crossing compound dimensions: 60 x 40m assumed for the Project's compounds on each side of the obstacle (entry and exit compounds) • Total onshore cable corridor works area (est.): 4,252,209m^2: • Access routes: Various from public highway to single tracks (refer to **Volume 7, Figure 5-4 (application ref: 7.5.1)**) • Haul Road: 5m (increasing to 8m at passing places) • Number of Temporary Construction Compounds: 17 (2 main compounds, 15 satellite compounds including landfall area satellite compound) • Size of main construction compound (m^2): 10,000 (roughly 100x100m • Size of satellite construction compounds (m^2): 5625 (roughly 75x75m) • Duration: 33 months	• All other crossings assumed to be open cut (see **Appendix 5-2, Obstacle Crossing Register (Volume 7, application ref: 7.5.5.2)**) • Trenchless crossing compound dimensions: 60 x 40m assumed for the Project's compounds on each side of the obstacle (entry and exit compounds) • Total onshore cable corridor works area (est.): 4,503,397m^2 • Access routes: Various from public highway to single tracks (refer to **Volume 7, Figure 5-4 (application ref: 7.5.1)**) • Haul Road: 5m (increasing to 8m at passing places) • Number of Temporary Construction Compounds: 17 (2 main compounds, 15 satellite compounds including landfall area satellite compound) • Size of main construction compound (m^2): 10,000 (roughly 100x100m • Size of satellite construction compounds (m^2): 5625 (roughly 75x75m) • Duration: 33 months	• All other crossings assumed to be open cut (see **Appendix 5-2, Obstacle Crossing Register (Volume 7, application ref: 7.5.5.2)**) • Trenchless crossing compound dimensions: 60 x 40m assumed for the Project's compounds on each side of the obstacle (entry and exit compounds) • Total onshore cable corridor works area (est.): 4,503,397m^2 • Access routes: Various from public highway to single tracks (refer to **Volume 7, Figure 5-4 (application ref: 7.5.1)**) • Haul Road: 5m (increasing to 8m at passing places) • Number of Temporary Construction Compounds: 17 (2 main compounds, 15 satellite compounds including landfall area satellite compound) • Size of main construction compound (m^2): 10,000 (roughly 100x100m • Size of satellite construction compounds (m^2): 5625 (roughly 75x75m) • Duration of works: up to 57 months overall (note this would not be continuous working within that timeframe)	

	Parameter			
	DBS East or DBS West In Isolation	**DBS East and DBS West Concurrently**	**DBS East and DBS West Sequentially**	**Notes and rationale**

Onshore Substation Zone	• Total construction area: 94,000m^2 (based on one HVDC Convertor Station + Temporary Construction Compound area)
	  ○ Area of Converter Station: 64,000m^2
	  ○ No. of Converter Station compounds: 1 (3 location options identified)
	  ○ Converter Station compound: 30,000m^2
	• Duration: 4 years
		• Total construction area: 189,000m^2 (based on two HVDC Convertor Stations + Temporary Construction Compound area)
		  ○ Area of Converter Station (s): 129,000m^2
		  ○ No. of Converter Station compounds: 2 (locations identified)
		  ○ Converter Station compound: 60,000m^2
		• Duration: 4 years
			• Total construction area: 189,000m^2 (based on two HVDC Convertor Stations + Temporary Construction Compound area)
			  ○ Area of Converter Station (s): 129,000m^2
			  ○ No. of Converter Station compounds: 2 (locations identified)
			  ○ Converter Station compound: 60,000m^2
			• Duration: 6 years	

Onward Cable Corridor Connection to Proposed Birkhill Wood National Grid Substation	• Onward corridor length from Onshore Converter Stations to proposed Birkhill Wood National Grid Substation (km): 2.5 • Number of export circuits: 4x400kV • Technology: HVAC • Cabling from Project Onshore Converter Station to National Grid Substation: Buried • General cable corridor approximate permanent easement swathe (m): 20 • Cable corridor construction swathe (m): 53.5 • Cable construction satellite construction compound dimensions (m): 75x75 • Number of earth / Link Boxes: 35	• Onward corridor length from Onshore Converter Stations to proposed Birkhill Wood National Grid Substation (km): 2.5 • Number of export circuits: 8x400kV • Technology: HVAC • Cabling from Project Onshore Converter Station to National Grid Substation: Buried • General cable corridor approximate permanent easement swathe (m): 34 • Cable corridor construction swathe (m): 100 • Cable construction satellite construction compound dimensions (m): 75x75 • Number of earth / Link Boxes: 70	• Onward corridor length from Onshore Converter Stations to proposed Birkhill Wood National Grid Substation (km): 2.5 • Number of export circuits: 8x400kV • Technology: HVAC • Cabling from Project Onshore Converter Station to National Grid Substation: Buried • General cable corridor approximate permanent easement swathe (m): 34 • Cable corridor construction swathe (m): 100 • Cable construction satellite construction compound dimensions (m): 75x75 • Number of earth / Link Boxes: 70	

	Parameter			
	DBS East or DBS West In Isolation	**DBS East and DBS West Concurrently**	**DBS East and DBS West Sequentially**	**Notes and rationale**
Operation				
Landfall Zone	• Permanent Land take for the total number of TJBs: 200m^2 – including below ground infrastructure • Number of manhole covers within Landfall Zone: 2 • Total area of permanent land take for manhole covers above ground (m^2): 20 • All other construction disturbance restored to pre-existing condition.	• Permanent Land take for the total number of TJBs: 400m^2 – including below ground infrastructure • Number of manhole covers within Landfall Zone: 4 • Total area of permanent land take for manhole covers above ground (m^2): 40 • All other construction disturbance restored to pre-existing condition.	• Permanent Land take for the total number of TJBs: 400m^2 – including below ground infrastructure • Number of manhole covers within Landfall Zone: 4 • Total area of permanent land take for manhole covers above ground (m^2): 40 • All other construction disturbance restored to pre-existing condition.	The Projects together are considered as the worst-case scenario when compared to the Projects in isolation due to the requirement for a greater extent of permanent land take required for the TJBs.
Onshore Export Cable Route from Landfall Zone to the Onshore Substation Zone	• Permanent easement: 15m • Maximum number of trenches: 2 • Approximate depth of trench: 1.7 – 1.3m (from existing ground level to top of duct / cables) • Jointing Bay depth: 2.2m (from existing ground level to the bottom of the joint bay) • Jointing Bay permanent infrastructure dimensions (all below ground): 3x 8m • Number of Earth/Link boxes (buried, manhole at the surface and the only above ground permanent infrastructure along the cable corridor): up to 103 (up to 2 Link Boxes per HVDC circuit) • Link Box dimensions (permanent infrastructure/manhole) 2.5x 4m	• Permanent easement: 24m • Number of trenches: up to 4 • Approximate depth of trench: 1.7 – 1.3m (from existing ground level to top of duct / cables) • Jointing Bay Depth: 2.2m (from existing ground level to the bottom of the joint bay) • Jointing Bay permanent infrastructure dimensions (all below ground): 3x 8m • Number of Earth/Link boxes (buried, manhole at the surface and the only above ground permanent infrastructure along the cable corridor): up to 205 (up to 2 Link Boxes per HVDC circuit) • Link Box dimensions (permanent infrastructure/manhole) 2.5x 4m	• Permanent easement: 24m • Number of trenches: up to 4 • Approximate depth of trench: 1.7 – 1.3m (from existing ground level to top of duct / cables) • Jointing Bay Depth: 2.2m (from existing ground level to the bottom of the joint bay) • Jointing Bay permanent infrastructure dimensions (all below ground): 3x 8m • Number of Earth/Link boxes (buried, manhole at the surface and the only above ground permanent infrastructure along the cable corridor): up to 205 (up to 2 Link Boxes per HVDC circuit) • Link Box dimensions (permanent infrastructure/manhole) 2.5x 4m	There is no substantive difference in the likely effects of the different scenarios.

	Parameter			
	DBS East or DBS West In Isolation	**DBS East and DBS West Concurrently**	**DBS East and DBS West Sequentially**	**Notes and rationale**
Onshore Substation Zone	• Permanent Convertor Station area: 64,416m^2 (244m x 264m) (based on one HVDC substation) • Permanent access road: 3,200m^2 • Approximate area of landscaping and SuDs basin: 195,300m^2 • Implementation of landscape screening in accordance with **Volume 7, Figure 23-6 Indicative Landscape Plan (application ref: 7.23.1)**. Worst case considers year 1, before planting matures. • Duration: 30 years	• Permanent Convertor Station area: 128,832m^2 (244m x 264m plus 244m x 264m) (based on two HVDC convertor stations) • Permanent access road: 3,200m^2 • Approximate area of landscaping and SuDs basin: 195,300m^2 • Implementation of landscape screening in accordance with **Volume 7, Figure 23-6 Indicative Landscape Plan (application ref: 7.23.1)**. Worst case considers year 1, before planting matures. • Duration: 30 years	• Permanent Convertor Station area: 128,832m^2 (244m x 264m plus 244m x 264m) (based on two HVDC convertor stations) • Permanent access road: 3,200m^2 • Approximate area of landscaping and SuDs basin: 195,300m^2 • Implementation of landscape screening in accordance with **Volume 7, Figure 23-6 Indicative Landscape Plan (application ref: 7.23.1)**. Worst case considers year 1, before planting matures. • Duration: 32 years	Two Onshore Converter Station s would be required for the Concurrent and Sequential scenarios compared to one for the Projects in isolation. In addition, there may be the requirement for a longer operational period due to the lag between Projects if built Sequentially. As such, the Sequential operational scenario is considered to be the worst case.
Onshore Onward Cable Connection to the Proposed Birkhill Wood National Grid Substation	• 35 manholes at the surface • Approximate total area of permanent land take for Link Boxes/manhole covers (m^2): 350 • General cable corridor approximate permanent easement swathe (m): 20	• 70 manholes at the surface • Approximate total area of permanent land take for Link Boxes/manhole covers (m^2): 700 • General cable corridor approximate permanent easement swathe (m): 34	• 70 manholes at the surface • Approximate total area of permanent land take for Link Boxes/manhole covers (m^2): 700 • General cable corridor approximate permanent easement swathe (m): 34	There is no substantive difference in the likely effects of the different scenarios.
Decommissioning				
No final decision regarding the final decommissioning policy for the onshore Project infrastructure including landfall, onshore cable route and onshore substation has yet been made. It is also recognised that legislation and industry best practice change over time. However, it is likely that the onshore Project equipment, including the cable, will be removed, reused or recycled wherever possible and the transition bays and cable ducts being left in place. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and will be agreed with the regulator. It is anticipated that for the worst case scenario, the impacts will be no greater than those identified for the construction phase. A decommissioning plan for the onshore works would be submitted prior to any decommissioning commencing.			

21.3.3.2 Development Scenarios

12. Following Statutory Consultation high voltage alternating current (HVAC) technology (previously assessed in PEIR) was removed from the Projects' design envelope (see **Volume 7, Chapter 4 Site Selection and Assessment of Alternatives (application ref: 7.4)** for further information). As a result, only high voltage direct current (HVDC) technology has been taken forward for assessment purposes. The ES considers the following Development Scenarios:

    - Either DBS East or DBS West is built In Isolation; or
    - DBS East and DBS West are both built either Sequentially or Concurrently.

13. An In Isolation Scenario has been assessed within the ES on the basis that theoretically one Project could be taken forward without the other being built out. If an In Isolation Scenario is taken forward, either DBS East or DBS West may be constructed. As such the onshore assessment considers both DBS East and DBS West In Isolation.

14. If an In Isolation Scenario is taken forward, only the eastern Onshore Converter Station within the Onshore Substation Zone would be constructed. In either the Concurrent Scenario or Sequential Scenario, both Onshore Converter Stations locations within the Onshore Substation Zone would be taken forward for the onshore assessment.

15. In order to ensure that a robust assessment has been undertaken, all Development Scenarios have been considered to ensure the realistic worst-case scenario for each topic has been assessed. A summary is provided here, and further details are provided in **Volume 7, Chapter 5 Project Description (application ref: 7.5)**.

16. The three Development Scenarios to be considered for assessment purposes are outlined in **Table 21-2**.

Table 21-2 Development Scenarios and Construction Durations

Development scenario	Description	Total Maximum Construction Duration (Years)	Maximum construction Duration Offshore (Years)	Maximum construction Duration Onshore (Years)
In Isolation	Either DBS East or DBS West is built In Isolation.	Five	Five	Four
Sequential	DBS East and DBS West are both built Sequentially, either Project could commence construction first with staggered / overlapping construction.	Seven	A five year period of construction for each project with a lag of up to two years in the start of construction of the second project (excluding landfall duct installation) – reflecting the maximum duration of effects of seven years.	Construction works (i.e. onshore cable civil works, including duct installation) to be completed for both Projects simultaneously in the first four years, with additional works at the landfall, substation zone and cable joint bays in the following two years. Maximum duration of effects of six years.
Concurrent	DBS East and DBS West are both built Concurrently reflecting the maximum peak effects.	Five	Five	Four

17. Any differences between the Projects, or differences that could result from the manner in which the first and the second Projects are built (Concurrent or Sequential and the length of any lag) are identified and discussed where relevant in section 21.6. For each potential impact, the worst case construction scenario for the In Isolation Scenario and the Concurrent or Sequential Scenario is presented. The worst case scenario presented for the Concurrent or Sequential Scenario would depend on which of these is the worst case for the potential impact being considered. The justification for what constitutes the worst case is provided, where necessary, in section 21.6.

21.3.3.3 Operation Scenarios

18. Operation scenarios are described in detail in **Volume 7, Chapter 5 Project Description (application ref: 7.5)**. The assessment considers the following scenarios:

- Only DBS East in operation;
- Only DBS West in operation; and
- The two Projects operating Concurrently with or without a lag of up to two years between each Project commencing operation.

19. If the Projects are built using a phased approach, there would also be a phased approach to starting the operational phase. The worst case scenario for the operational phases for the Projects have been assessed. See section 5.1.1 of **Volume 7, Chapter 5 Project Description (application ref: 7.5)** for further information on phasing scenarios for the Projects.

20. The operational lifetime of each Project is expected to be 30 years.

21.3.3.4 Decommissioning Scenarios

21. Decommissioning scenarios are described in **Volume 7, Chapter 5 Project Description (application ref: 7.5)**. Decommissioning arrangements would be agreed through the submission of a Decommissioning Plan to be submitted and approved following cessation of commercial operation prior to decommissioning commencing. For the purpose of this assessment it is assumed that decommissioning of the Projects could be conducted separately, or at the same time.

21.3.4 Embedded Mitigation

22. This section outlines the embedded mitigation relevant to the Land Use assessment, which has been incorporated into the design of the Projects or constitutes standard mitigation measures for this topic (**Table 21-3**). Mitigation is also detailed within the **Commitments Register (Volume 8, application ref: 8.6)** and cross-referenced within **Table 21-3**. Where additional mitigation measures are proposed, these are detailed in the impact assessment (section 21.4).

Table 21-3 Embedded Mitigation Measures

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
Site selection	The Projects have undergone an extensive site selection process which has involved incorporating environmental considerations in collaboration with the engineering design requirements Land take has been minimised where possible, reducing sterile land parcels and aligning with field boundaries **(Volume 7, Chapter 4 Site Selection and Assessment of Alternatives (application ref: 7.4)**.	DCO Schedule 1
Haul Road	A temporary Haul Road would be used to provide safe access for construction vehicles along the Onshore Export Cable Corridor, thus reducing the requirement for vehicles to travel via the public highway. The Applicants have committed to sharing a Haul Road and construction accesses for both Projects in order to minimise physical disturbance.	DCO Schedule 1
Construction Methodology and Reinstatement	As described in **Volume 7, Chapter 5 Project Description (application ref: 7.5)**, in a Concurrent or Sequential construction scenario, the ducts for both Projects would be laid in the same phase of works i.e. the ducts for the second Project would be laid by the first. The areas of land between Jointing Bays would be reinstated with 2 years and returned to the landowner for agricultural use or the habitat restored. Cables would then be pulled through the ducts at Jointing Bay locations along the Onshore Export Cable Route, limiting physical disturbance to locations every 0.75 to 1.5km. Works to install the platform for the Onshore Converter Station for the second Project within the Substation Zone and the ducting at the Landfall Zone would also be undertaken in the same phase of works. On completion of construction, the Landfall Zone and Onshore Export Cable Corridor, including Temporary Construction Compounds, would be reinstated to its previous condition (e.g. agricultural use) as far as reasonably practical. The only above-ground infrastructure that would remain would be manholes for link boxes.	DCO Schedule 1
Outline Code of Construction Practice (OCoCP)	The **OCoCP (Volume 8, application ref: 8.9)** outlines the control measures and standards that will be implemented to control the impacts on the environment. It also includes measures to reduce temporary disturbance to land use and agriculture receptors.	DCO Requirement 19
Agricultural Land Classification (ALC) and Soil Condition Surveys	Agricultural Land Classification (ALC) surveys have been undertaken for the Substation Zone, where the Onshore Converter Stations would be located, the results are included in **Appendix A, Outline Soil Management Plan (OSMP)** of the **OCoCP (Volume 8, application ref: 8.9)**. ALC surveys for the Onshore Export Cable Corridor and the Landfall Zone will be completed in Spring/Summer 2024 to inform the detailed Soil Management Plan (SMP) and reinstatement methodology following completion of the construction works. The Principal Contractor (or appointed Agricultural Land Officer) will undertake soil condition and intrusive soil survey trial pits to identify and describe the physical and nutrient characteristics of the existing soil profiles.	DCO Requirement 19
Outline Drainage Strategy	An **Outline Drainage Strategy (Volume 8, application ref: 8.12)** is submitted with the DCO application, which includes the pre and post construction land drainage proposals. The Projects have commissioned a detailed drainage survey, which is currently ongoing, to establish the existing land drainage baseline environment. To fully understand the drainage a suitably qualified land drainage expert with experience of working in the local area has been enlisted to carry out the baseline surveys and to consult with landowners. They would also ensure local, site-specific, and landowner knowledge is effectively captured prior to construction commencing. A detailed drainage strategy would then be drafted based on the results of the outline drainage survey and in accordance with the **Outline Drainage Strategy (Volume 8, application ref: 8.12)**. The detailed strategy will be submitted to the Lead Local Flood Authority (LLFA) at East Riding of Yorkshire Council for approval prior to the commencement of construction of the Projects, in consultation with the Environment Agency, Internal Drainage Boards (IDB) and the relevant sewerage and drainage authorities.	DCO Requirement 16

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	Where the Projects intercepts land drainage, pre-construction drainage would be installed at the edge(s) of the Onshore Export Cable Corridor. This permanent drainage would intercept existing field drains and ensure the integrity of the existing land drainage is maintained during construction and operation of the Projects. All drains and outfalls would be risk assessed and appropriate control measures used prior to discharge into any watercourses at a controlled rate. Temporary attenuation / storage would be provided, where necessary. At the Onshore Converter Stations, located within the Onshore Substation Zone a construction drainage system would also be implemented at the beginning of the construction phase. This would cover the drainage requirements for both the temporary and permanent working areas and ensure any land drainage has suitable pollution prevention measures implemented, including filter trenches and fuel interceptors.	
Outline Soil Management Plan (OSMP)	An **Outline Soil Management Plan (OSMP)**, which forms **Appendix A** of the **OCoCP (Volume 8, application ref: 8.9)** outlines the mitigation measures and best practice techniques, which contractors would be obliged to comply with. A detailed Soil Management Plan (SMP) would form part of the final CoCP. Measures set out in Defra's (2009) '*Construction Code of Practice for the Sustainable Use of Soils on Construction Sites*' would be adopted. Additionally, guidance from IES (2020) '*Sustainable, Healthy and Resilient: Practice-Based Approaches to Land and Soil Management*' would also be used. Mitigation measures included within the OSMP include: • Consideration of weather conditions where it is appropriate to work for each soil type, e.g. not working in an area of poorly draining soils following a period of heavy rain; • Storing soils appropriately; • Ensuring effective drainage systems are used during construction; and • Employing reinstatement and plant vegetation following completion of construction works. The OSMP also sets out procedures for the appropriate handling of soils during the works, including: • Using a competent contractor for soil handling, storage and reinstatement under Defra '*Construction Code of Practice for the Sustainable Use of Soils on Construction Sites*' (2009); • Storing topsoil adjacent to where it is stripped, wherever practicable; • Storing excavated subsoil separately from the topsoil, with sufficient separation to ensure segregation; • Restricting movements of heavy plant and vehicles to specified routes; and • Minimising the footprint of excavation works as much as reasonably possible.	DCO Requirement 19
Outline Public Rights of Way Management Plan	An Outline Public Rights of Way Management Plan is included in **Appendix C** of the **OCoCP (Volume 8, application ref: 8.9)**, and outlines the temporary management measures to be employed during the construction phases of the Projects. Temporary management measures would include: • No management required;	DCO Requirement 24

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	• Short-term temporary stopping up; • Appropriately fenced (unmanned) crossing points; • Manned crossing points; and • Temporary closured with short PRoW diversions. There would be no permanent closures of any recreational routes. However, there would be one minor permanent diversion where a PRoW crosses the permanent access for the Substation Zone, to allow for a change in level. The following short-term and temporary measures will be consulted on with East Riding of Yorkshire Council and specified within a detailed PRoW Management Plan: • Prior to any temporary stopping up or localised diversion of a PRoW, the Principal Contractor will undertake works in accordance with the measures established within the detailed PRoW Management Plan, to manage the interface between the works, the PRoW and its users in consultation with East Riding of Yorkshire Council; • A Communications and Public Relations Procedure will be developed to ensure East Riding of Yorkshire Council are kept informed of when and where works will be taking place, an Outline Communications and Public Relations Procedure is included in **Appendix B** of the **OCoCP (Volume 8, application ref: 8.9)**; • Where a PRoW requires temporary management measures, any temporary diversion will be clearly signposted; • A pre- and post-construction survey (including identification of surface condition and street furniture (if any)) of the PRoW affected would be undertaken. PRoW surveys would be undertaken by an experienced surveyor with scope of coverage and methodology to be agreed with East Riding of Yorkshire Council. A qualified ALO would be employed to ensure that information on existing land conditions is obtained, recorded and verified during the rights of way surveys; • East Riding of Yorkshire Council and relevant Parish Councils would be notified within a reasonable period of time (4 -6 weeks) in advance of any temporary stopping-up of a PRoW. A notice describing the temporary stoppage would be advertised two weeks in advance of the stoppage; • A notice describing the temporary closure would be published in the press a minimum of two weeks in advance of the closure. Consideration would also be given to publishing the temporary closures via additional alternative methods such as websites; • Advanced site notices (i.e. notices to members of the public warning of diversions ahead) would be posted at appropriate places to minimise likelihood of unnecessary aborted journeys. Measures would include: o Site notices erected in visible locations on site approximately one to two weeks in advance of a temporary management measures being in place; o Provision of a map showing the extent of the temporary closure and any temporary diversion; and o Confirmation that the temporary diversion across land in the Applicants' control is safe and fit for public use.	

21.4 Assessment Methodology

21.4.1 Policy, Legislation and Guidance

21.4.1.1 National Policy Statements

23. The assessment of potential impacts upon Land Use has been made with specific reference to the relevant National Policy Statements (NPS) including the Overarching NPS for Energy (EN-1), the NPS for Renewable Energy Infrastructure (EN-3) and the NPS for Electricity Networks Infrastructure (EN-5). These were published in November 2023 and were designated in January 2024. The specific assessment requirements for Land Use, as detailed in the NPS, are summarised in **Table 21-4** together with an indication of the section of this chapter where each is addressed.

Table 21-4 NPS Assessment Requirements

NPS Requirement	NPS Reference	ES Section Reference
EN-1 NPS for Energy		
Development of land will affect soil resources, including physical loss of and damage to soil resources, through land contamination and structural damage. Indirect impacts may also arise from changes in the local water regime, organic matter content, soil biodiversity and soil process.	Paragraph 5.11.4	The baseline environment in relation to soil resources present within the Onshore Development Area are discussed is section 21.5.1.2. Potential impacts, and mitigation measures in relation to loss and damage to soil resources during construction are discussed in section 21.6.1.3. Impacts associated with the potential contamination of soils during construction and operation is discussed in **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)**.
The ES (see section 4.3) 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. The assessment should be proportionate to the scale of the preferred scheme and its likely impacts on such receptors. For developments on previously developed land, the applicant should ensure that they have considered the risk posed by land contamination and how it is proposed to address this.	Paragraph 5.11.8	Existing land use within the Onshore Development Area are discussed in section 21.5.
During any pre-application discussions with the applicant the 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.	Paragraph 5.11.11	Project wide pre-application discussions have been undertaken with the local authority (East Riding of Yorkshire Council) through the Evidence Plan process and with the local community through the Introductory Consultation and ongoing landowner discussions. Statutory consultation on the Projects has also been undertaken via the Section 42 consultation process. Details of all consultation responses relevant to Land Use are included in **Volume 7, Appendix 21-1 (application ref: 7.21.21.1)**. Further details are provided in section 21.2. **Volume 7, Chapter 7 Consultation (application ref: 7.7)** summarises the consultation approach undertaken.
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).	Paragraph 5.11.12	Impacts on the Best and Most Versatile (BMV) agricultural land and soil quality are assessed in sections 21.6.1.2 and 21.6.2.2. Minimisation of impacts to BMV agricultural land would be undertaken where possible. However, the predominant land cover between landfall and the Onshore Substation Zone is classed as BMV agricultural land, and therefore the ability to avoid use of BMV agricultural land would be extremely limited. More widely, impacts due to any existing

NPS Requirement	NPS Reference	ES Section Reference
		contaminated land are discussed in **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)**.
Applicants should also identify any effects and seek to minimise impacts on soil health and protect and improve soil quality taking into account any mitigation measures proposed.	Paragraph 5.11.13	The baseline environment in relation to soil resources present within the Onshore Development Area are discussed is section 21.5.1.2. Potential impacts, and mitigation measures in relation to loss and damage to soil resources during construction are discussed in section 21.6.1.3.
Applicants are encouraged to develop and implement a Soil Management Plan which could help minimise potential land contamination. The sustainable reuse of soils needs to be carefully considered in line with good practice guidance where large quantities of soils are surplus to requirements or are affected by contamination.	Paragraph 5.11.14	The baseline environment in relation to soil resources present within the Onshore Development Area are discussed is section 21.5.1.2. The **OSMP**, **Appendix A** of the **OCoCP (Volume 8, application ref: 8.9)**, includes mitigation measures and best practice techniques. Potential impacts, and mitigation measures, associated with contamination are discussed in **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)**.
Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place.	Paragraph 5.11.19	Sterilisation of future mineral resources has been assessed, as discussed in **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)**.
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 (see paragraph 5.11.36 below).	Paragraph 5.11.20	No designated areas of Green Belt would be affected by the Projects. The closest designated green belt (around the city of York) is located approximately 31km at its nearest point from any part of the Onshore Development Area.
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 criteria on such developments in Green Belts.	Paragraph 5.11.21	
Moreover an applicant may be able to demonstrate that particular energy infrastructure, such as an underground pipeline, may be considered an “engineering operation” and regarded as not inappropriate in Green Belt. This is provided it preserves the openness of the Green Belt and does not conflict with the purposes of Green Belt designation. It may also be possible for an applicant to show that the physical characteristics of a proposed overhead line in a particular location would not have so harmful an impact as to conflict with the purposes of Green Belt designation, or with other protections of rural landscape.	Paragraph 5.11.22	
Although in the case of most 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	Paragraph 5.11.23	Impacts on existing land use would be minimised through reinstating working areas to pre-existing conditions in line with the latest guidance.

NPS Requirement	NPS Reference	ES Section Reference
(assuming that some 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 uses near the site by the application of good design principles, Including the layout of the project and the protection of soils during construction.		The majority of land traversed by the Onshore Export Cable Corridor is agricultural and following construction the expectation is that farming practices would continue above the buried cable. The Projects' configuration, routing and layout would take into account the multiple environmental criteria including land use (see **Volume 7, Chapter 4 Site Selection and Assessment of Alternatives (application ref: 7.4)**).
Where green infrastructure is affected, the Secretary of State should consider imposing requirements to ensure the functionality and 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 National Trails and other public rights of way and new coastal access routes.	Paragraph 5.11.24	The baseline environment in relation to PRoW and cycle routes is discussed in section 21.5.2.3. Impacts to these features, and potential mitigation measures, during construction and operation are discussed in sections 21.6.1.6 and 21.6.2.5. A **PRoW strategy** is included as an appendix to the **OCoCP (Volume 8, application ref: 8.9)**.
Public 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 Secretary of State should expect applicants to take appropriate mitigation measures to address adverse effects on coastal access, National Trails, other rights of way and open access land and, where appropriate, to consider what opportunities there may be to improve or create new access. In considering revisions to an existing right of way, consideration should be given to the use, character, attractiveness, and convenience of the right of way.	Paragraph 5.11.30	
The Secretary of State should ensure that applicants do not site their scheme on the best and most versatile agricultural land without justification. Where schemes are to be sited on best and most versatile agricultural land the Secretary of State should take into account the economic and other benefits of that land. Where development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.	Paragraph 5.11.34	Impacts on the BMV agricultural land and soil quality are assessed in sections 21.6.1.2 and 21.6.2.2. Potential mitigation measures to reduce the significance of effect as also discussed within sections 21.6.1.2 and 21.6.2.2. Minimisation of impacts to BMV agricultural land would be undertaken where possible. However, the predominant land cover between landfall and the Onshore Substation Zone is classed as BMV agricultural land, and therefore the ability to avoid use of BMV agricultural land would be extremely limited. More widely, impacts due to any existing contaminated land are discussed in **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)**.
NPS for Renewable Energy Infrastructure (EN-3)		
Applicants are encouraged to develop and implement a Soil Resources and Management Plan which could help to use and manage soils sustainably and minimise adverse impacts on soil health and potential land contamination. This should be in line with the ambition set out in the Environmental Improvement Plan to bring at least 40% of England's agricultural soils into sustainable management by 2028 and increase this up to 60% by 2030.	Paragraph 2.10.34	The baseline environment in relation to agricultural land is discussed in section 21.5.1. Potential impacts, and mitigation measures, associated with the potential loss of agricultural land and disruption to farming practices that may occur during construction and operation are discussed in sections 21.6.1.2 and 21.6.2.2. Potential impacts associated with contamination of agricultural land are discussed in

NPS Requirement	NPS Reference	ES Section Reference
		Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19). Details of **Appendix A, OSMP**, of the **OCoCP (Volume 8, application ref: 8.9)**, which will form part of the embedded mitigation measures for the Projects, is provided in **Table 21-3**.
EN-5 NPS for Electricity Networks Infrastructure		
...the applicant's commitment, as set out in their ES, to mitigate the potential detrimental effects of undergrounding works on any relevant agricultural land and soils (including peat soils), particularly regarding Best and Most Versatile land, including development and implementation of a Soil Resources and Management Plan. Such a commitment must guarantee appropriate handling of soil, backfilling, and return of the land to the baseline Agricultural Land Classification (ALC), thus ensuring no loss or degradation of agricultural land. Such a commitment should be based on soil and ALC surveys in line with the 1988 ALC criteria and due consideration of the Defra Construction Code of Practice for Sustainable Use of Soils on Construction Sites.	Paragraph 2.9.25	Embedded mitigation measures to reduce the potential impacts on BMV agricultural land and soil quality, including **Appendix A, OSMP,** of the **OCoCP (Volume 8, application ref: 8.9)**, are included within **Table 21-3**. Impacts on the BMV agricultural land and soil quality, and any additional mitigation measures that may be required, are assessed in sections 21.6.1.2 and 21.6.2.2. Minimisation of impacts to BMV agricultural land would be undertaken where possible. However, the predominant land cover between landfall and the Onshore Substation Zone is classed as BMV agricultural land, and therefore the ability to avoid use of BMV agricultural land would be extremely limited.
There is little evidence that exposure of crops, farm animals or natural ecosystems to transmission line EMFs has any agriculturally significant consequences.	Paragraph 2.9.58	No impacts associated with electric and magnetic fields (EMF) on land use and agriculture are anticipated and so are not discussed within this chapter. For impacts associated with health, please refer to **Volume 7, Chapter 27 Human Health (application ref: 7.27)**.

21.4.1.2 Other

24. In addition to the NPS, there a number of pieces of legislation, policy and guidance applicable to the assessment of Land Use. These include:

- Legislation – the following UK legislation is considered the most relevant to this chapter:
  - Wildlife and Countryside Act 1981;
  - Countryside and Rights of Way Act 2000 (CRoW);
  - The Environmental Stewardship (England) Regulations 2005;
  - The Commons Act 2006;
  - Planning Act 2008;
  - Marine and Coastal Access Act 2009; and
  - Environment Act 2021.
- National Policy – The following national policy is considered relevant to this chapter:
  - National Planning Policy Framework (NPPF) 2023.
- Local Policy – EN-1 states that the Planning Inspectorate will also consider Development Plan Documents or other documents in the Local Plan Framework to be relevant to its decision making. The Local Plan relevant to this chapter is:
  - East Riding Yorkshire Local Plan Strategy Document 2016, an update to the 2016 local plan is currently under review by the Planning Inspectorate.
- Guidance – The relevant existing documents, which contain best practice guidance on soil handling, construction management and recreational features are listed below:
  - Ministry of Agriculture, Fisheries and Food (MAFF) (1988) *Agricultural Land Classification of England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land (Revised Guidelines)*;
  - MAFF (2000) *Good Practice Guide for Handling Soils*;
  - Department for Communities and Local Government (2002) '*Planning Policy Guidance 17: Planning for open space, sport and recreation*';
  - Department for Environment, Food and Rural Affairs (Defra) (2009) '*Construction Code of Practice for the Sustainable Use of Soils on Construction Sites*';

- Environment Agency (2010) '*Managing Invasive Non-native Plants*';
- Natural England (2012) '*Agricultural Land Classification: Protecting the Best and Most Versatile Agricultural Land*';
- Highways Agency (2019) '*Design Manual for Roads and Bridges (DMRB) LA 109 (Geology and Soils) and LA 112 (Population and human health)*';
- Highways Agency (2020) '*Design Manual for Roads and Bridges (DMRB) LA 112, Revision 1 (Population and human health)*';
- IES (2020) '*Sustainable, healthy, and resilient: Practice-based approaches to land and soil management*';
- British Society of Soil Science (2021) '*Guidance Document 3 Working with Soil Guidance Note: Benefitting from soil management in development and construction*';
- Society for the Environment (SocEnv) (2021) '*Soils and Stones Report*';
- The Institute of Quarrying (IQ) (2021) '*Good Practice Guide for Handling Soils in Mineral Workings*'; and
- Institute of Environmental Management and Assessment (IEMA) (2022) '*A New Perspective on Land and Soil in Environmental Impact Assessment*'.

- Additional papers and documents considered relevant to this chapter:
  - Natural Environment White Paper 2011; and
  - A Green Future: Our 25 Year Plan to Improve the Environment 2018.

25. Further detail is provided in **Volume 7, Chapter 3 Policy and Legislative Context (application ref: 7.3)**.

21.4.2 Data and Information Sources

21.4.2.1 Site Specific Surveys

26. With regards to ALC, the baseline environment for this chapter has been largely informed by desk based information, and therefore adopts a precautionary approach. Site specific ALC surveys for the Onshore Substation Zone have been undertaken with the results discussed in section 21.5.1.1. Additional site specific surveys for the remainder of the Onshore Development Area will be undertaken prior to the commencement of construction works, to inform the detailed Soil Management Plan (SMP), an **OSMP** is included in **Appendix A** of the **OCoCP (Volume 8, application ref: 8.9)** (see **Table 21-3**).

21.4.2.2 Other Available Sources

27. Other sources that have been used to inform the assessment are listed in **Table 21-5**.

Table 21-5 Other Available Data and Information Sources

Data Set	Spatial Coverage	Year
Road maps, railway lines and urban areas (Ordnance Survey)	Landfall, onshore cable route, onshore substation	2022
Datasets on the structure of the agricultural industry (Defra)	England	2023
Soil types (National Soil Resources Institute, Cranfield University)	Landfall, onshore cable route, onshore substation	2023
Environmental Stewardship Schemes (Natural England)	England and Wales	2023
Agricultural Land Classifications (Natural England)*	England and Wales	2020
Common land (Natural England)	England and Wales	2021

Data Set	Spatial Coverage	Year
Public Rights of Way (East Riding of Yorkshire Council)	East Riding of Yorkshire	2023
National Cycle Network (Sustrans)	United Kingdom	2023
Utilities	Landfall, onshore cable route, onshore substation	2022

**Observations made during site specific surveys did not always align with those recorded on the Agricultural Land Classification data set in relation to non-agricultural land. However, this is the best publicly available data source and any changes in classification since the publication of the data set will not be significant in terms of the EIA assessment.*

21.4.3 Impact Assessment Methodology

28. **Volume 7, Chapter 6 EIA Methodology (application ref: 7.6)** provides a summary of the general impact assessment methodology applied. The following sections describe the methods used to assess the likely significant effects on Land Use.

21.4.3.1 Definitions

29. For each potential impact, the assessment identifies receptors sensitive to that impact and implements a systematic approach to understanding the impact pathways and the level of impacts (i.e. magnitude) on given receptors. The definitions of sensitivity and magnitude for the purpose of the Land Use assessment are provided in **Table 21-6** and **Table 21-8**.

21.4.3.2 Sensitivity.

30. Receptor sensitivity is based on the capacity of receptors to tolerate change and is used to determine if the degree of change would be acceptable in terms of the current legislation and guidance.

31. With reference to the ALC classifications discussed in **Table 21-6**, further details for each classification are provided in **Table 21-7**.

Table 21-6 Definition of Sensitivity for a Land Use Receptor

Sensitivity	Definition	
	Land Use	**Agriculture**
High	Receptor has no or very limited capacity to accommodate changes such as loss of recreational features, loss of land area, soil degradation, agricultural land drainage etc.	
	Planning policy areas designated at national and international scale; Higher level environmental stewardship farms; Future large-scale planning use applications; Regionally distinctive and rare land uses that cannot be replaced or adapted; National trails, or coastal paths; or European protected sites.	Land at Agricultural Land Classification (ALC) Grade 1 or 2 (BMV land); Land at ALC Grade 3a (BMV land) with respect to permanent land take; Land with Notifiable Weeds or Notifiable Scheduled Diseases that are at risk of spreading; Soil which is susceptible to structural damage and erosion; or Unrecoverable or unadaptable soil.
Medium	Receptor has limited capacity to accommodate changes such as loss of recreational features, loss of land area, soil degradation, agricultural land drainage etc.	
	Locally designated planning policy areas; Entry level environmental stewardship farms; Land used for specific and regionally important agriculture or horticulture; Public Rights of Way e.g. footpaths, bridleways and byways; or Stewardship bridleways (a public footpath that has been granted bridleway status under a stewardship scheme, courtesy of the landowners.	Land at ALC Grade 3a (BMV land) with respect to temporary land take; Land at ALC Grade 3b (non BMV land) or Soil which is vulnerable to seasonal structural damage or erosion.
Low	Receptor has moderate capacity to accommodate changes such as loss of recreational features, loss of land area, soil degradation, agricultural land drainage etc.	
	No impact on designated planning policy areas; Not under environmental stewardship scheme, but is subject to other environmental management schemes; Large agricultural holdings; Land used for ordinary agriculture or horticulture; Local permissive pathways; or Open access land.	Land at ALC Grade 4 (non-BMV land); Arable or pasture grassland; or Medium to coarse soil with some resistance to structural damage.
Negligible	Receptor generally tolerant of changes such as loss of recreational features, loss of land area, soil degradation, agricultural land drainage etc.	
	No environmental stewardship schemes or other environmental management schemes.	Land at ALC Grade 5 or Urban (non-BMV land); Land which is not agricultural, arable or pasture grassland; or Soil with a greater resistance to structural damage.

32. The ALC grades and descriptions following the Ministry of Agriculture, Fisheries and Food (MAFF) (1988) Agricultural Land Classification of England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land (Revised Guidelines) are shown in **Table 21-7**.

33. The ALC ranks land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. It provides a method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system, and in turn, underpinning the principles of sustainable development. The ALC system classifies land into the five grades outlined above. Grade 3 land can be subdivided into 3a (good) and 3b (moderate).

34. BMV land is the land which is most flexible, productive and efficient which can best deliver future crops for food and non-food uses such as biomass, fibres and pharmaceuticals. It is defined as Grades 1, 2 and 3a by policy guidance. However, national datasets no longer subdivide Grade 3 land. For the purpose of this assessment, and taking into consideration a worst-case scenario, all Grade 3 land subject to permanent land take will be classified as BMV.

Table 21-7 ALC Grades and Descriptions (MAFF, 1988)

Grade	Description
Grade 1: Excellent quality agricultural land	Land with little or no limitations to agricultural use. Land can support a very wide range of agricultural and horticultural crops with consistently high yields. Crops commonly include top fruit, soft fruit, salad crops and winter harvested vegetables.
Grade 2: Very good quality agricultural land	Land with minor limitations which can affect crop yields, cultivations or harvesting. This land can support a wide range of agricultural and horticultural crops. Reduced flexibility can lead to difficulties in the production of more demanding crops such as winter harvested vegetables and arable root crops. Whilst the yield is high, it may be lower or more variable than Grade 1 land.
Grade 3a: Good quality agricultural land	Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals or moderate yields of crops including cereals, grass, oilseed rape, potatoes, sugar beet and less demanding horticultural crops.
Grade 3b: Moderate quality agricultural land	Land capable of producing moderate yields of a narrow range of crops, principally cereals, lower yields of a wider range of crops and high yields of grass which can be grazed or harvested over most of the year.

Grade	Description
Grade 4: Poor quality agricultural land	Land with significant limitations that considerably restrict the type and yield of crops that can be grown. Grass with occasional arable crops (e.g. cereals and forage crops) are predominantly suited to this land and produce variable yields.
Grade 5: Very poor quality agricultural land	Land with very severe limitations, restricting use to permanent pasture or rough grazing, with the exception of occasional pioneer forage crops.
Urban	Built-up urban areas with 'hard' uses such as housing, industry, commerce, education etc. with little potential to restore land after use.
Non-agricultural	'Soft' use areas such as golf courses, private parklands, public open spaces and sports field that can be returned to agriculture relatively easily.

21.4.3.2.1 Magnitude

35. The magnitude of impact on a receptor is defined based on the spatial extent, duration, frequency and severity of the impact. The potential effects may be adverse, beneficial or neutral.

36. Magnitude of impact is assessed according to the criteria defined in **Table 21-8**. In relation to agricultural land and soils, the magnitude of impact presented have been adopted from the IEMA '*A New Perspective on Land and Soil in Environmental Impact Assessment*' (2022) guidance.

Table 21-8 Definition of Magnitude of Impacts

Magnitude	Definition	
	Land Use	**Agriculture**
High	Permanent (>10 years) / irreversible changes, over the whole receptor, affecting usability, risk, value over a wide area, or certain to affect regulatory compliance; Existing land use would not be able to continue on >5ha of land or the entire landowner / occupiers available land (where smaller) where the land would be rendered unviable for agricultural purposes or permanent changes to land management would be required; or Permanent closure of a PRoW, National Trail or cycleway.	High degree of disruption to cultivation patterns and with high risk of permanent change in land use; Permanent loss of >20ha of Grade 1, 2 or 3 agricultural land or >60% total regional resource (Natural England, 2012); Permanent impacts to agricultural land drainage systems; or Full land recovery in excess of 10 years.
Medium	Moderate, permanent or long-term (5 – 10 years) reversible changes, over the majority of the receptor, affecting usability, risk, value over the local area, possibly affecting regulatory compliance; Existing land use would not be able to continue on <5ha of land; Noticeable changes to the existing land use; Temporary closure to a PRoW, National Trail or cycleway.	Moderate degree of disruption of disruption to cultivation patterns with moderate risk of change in land use; Medium to long term (2 – 5 years) loss of between 5 and 20ha of Grade 1,2 or 3 agricultural land or >60% of the regional resource; Permanent loss of >10ha of Grade 3 agricultural land; Temporary impacts to agricultural drainage systems over >20ha area; Full land recovery expected within 5 -10 years; >20ha of soil is temporarily unsuitable for agriculture; or <10ha of any agricultural land permanently lost from agriculture.
Low	Temporary change affecting usability, risk or value over the short-term (<5 years); Temporary change affecting usability within the site boundary; Measurable permanent change with minimal effect on usability, risk or value; no effect on regulatory compliance; or Temporary disruption via diversions to PRoW, National Trail or cycleway.	Minimal degree of disruption to cultivation patterns and low risk of change in land use; Short-term loss of >20ha, or permanent loss of >10ha of Grade 4 land or >10% of regional resource; Full land recovery expected within 5 years; Temporary impacts to agricultural drainage systems over <20ha area or <20ha of soil is temporarily unsuitable for agriculture or <5ha is permanently lost from agriculture.
Negligible	Minor permanent or temporary change, undiscernible over the medium-to short-term, with no effect on usability, risk or value; or No direct impact to PRoW, National Trail or cycleway.	Minimal or no disruption to cultivation patterns and very low risk of change in land use; Minimal or no disruption to agricultural land drainage systems; Minimal or no identifiable material changes to the soil resource; or Small areas <1,000m^2 is permanently lost from agriculture.

21.4.3.3 Significance of Effect

37. The assessment of significance of an effect is informed by the sensitivity of the receptor and the magnitude of the impact (see **Volume 7, Chapter 6 EIA Methodology (application ref: 7.6)** for further detail). The determination of significance is guided by the use of a Land Use significance of effect matrix, as shown in **Table 21-9**. Definitions of each level of significance are provided in **Table 21-10**. For the purposes of this assessment, any effect that is of major or moderate significance is considered to be significant in EIA terms, whether this be adverse or beneficial. Any effect that has a significance of minor or negligible is not significant.

Table 21-9 Land Use Significance of Effect Matrix

		Adverse Magnitude				Beneficial Magnitude			
		High	**Medium**	**Low**	**Negligible**	**Negligible**	**Low**	**Medium**	**High**
Sensitivity	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

Table 21-10 Definition of Effect Significance

Significance	Definition
Major	Very large or large change in receptor condition, which is likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or could result in exceedance of statutory objectives and / or breaches of legislation.
Moderate	Intermediate change in receptor condition, which is likely to be important considerations at a local level.
Minor	Small change in receptor condition, which may be raised as local issues but are unlikely to be important in the decision making process.
Negligible	No discernible change in receptor condition.
No change	No impact, therefore, no change in receptor condition.

21.4.4 Cumulative Effects Assessment Methodology

38. The Cumulative Effects Assessment (CEA) considers other schemes, plans, projects and activities that may result in significant effects in cumulation with the Projects. **Volume 7, Chapter 6 EIA Methodology (application ref: 7.6)** (and accompanying **Volume 7, Appendix 6-1 Onshore Cumulative Effects (application ref: 7.6.6.1)**) provides further details of the general framework and approach to the CEA.

21.4.5 Assumptions and Limitations

39. Potential effects to assets are based on a quantitative assessment where possible in order to predict the effect on land use and agricultural activities, particularly during the construction phase. It is however, accepted that the perceptions, particularly for receptor sensitivity, may differ between individuals. Therefore, the most likely perception is chosen where possible, and it is assumed that differences in opinion would balance on average.

40. The baseline environment in terms of agricultural land cover, includes the crops grown and agricultural practices adopted where these are known. It should be noted that this assessment is based on high level datasets which are only accurate at the time of data collection, and therefore should only be considered indicative of the land uses found within the study areas. Prior to the commencement of construction, ALC surveys for the Onshore Export Cable Corridor and the Landfall Zone will be undertaken within the Onshore Development Area in accordance with **Appendix A**, **OSMP** of the **OCoCP (Volume 8, application ref: 8.9)**. The final SMP will be informed by the findings of the ALC surveys. ALC surveys of the Substation Zone have been completed, as set out in section 21.5.1.

41. Impacts on soil resources are not predicted to extend beyond the direct study area (Onshore Development Area). Therefore, any impacts to the wider area are not discussed here. The published soil data used to undertake this assessment only provides a general characteristic of the area and are only indicative of the soil type present. The specific characteristics may differ on the ground and can vary between individual fields.

21.5 Existing Environment

42. The information presented in this section has drawn on the findings obtained during the desk-based data collection exercise. 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 ALC which provides a description of the grades of land found within the Onshore Development Area in the context of its versatility and suitability for growing crops;
  - Soil Types and Distribution identifies the soil found within the Onshore Development Area, including texture, type and fertility;
- **Land Use:**
  - Identifies high level land use within the Onshore Development Area;
  - PRoW and Cycle Routes identifies all such designated routes within the Onshore Development Area;
  - Stewardship Schemes identifies and describes any land or agri-environment schemes present within the Onshore Development Area; and
  - Utilities identifies and describes (at a high level) utilities present within the Onshore Development Area.

43. The description of the baseline environment provided within the subsequent sections has been divided into the following three development footprint areas:

- Landfall;
- Onshore Export Cable Corridor; and
- Onshore Substation Zone.

21.5.1 Agriculture

21.5.1.1 Agricultural Land Cover

44. Agriculture in the Yorkshire and Humber region is primarily arable (including arable crops, permanent grassland and temporary grass). The average farm size of 92.5ha is slightly greater than the English average of 87.1ha. Cereal farming dominates, with wheat, barley and oil seed rape as common crops. Alongside cereal farming, root crops, potatoes and field vegetables are also grown. Some livestock farming is also present in the region, principally cattle, pigs and poultry (Defra, 2023).

45. Agricultural land in England and Wales has been defined according to the ALC which measures the quality and versatility of soil in a grading system, and is based on factors including climate, nature of the soil and site-based factors (MAFF, 1988). The grading system is described in **Table 21-7**.

46. 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.

47. 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.

48. Using data from Natural England, **Volume 7, Figure 21-2 (application ref: 7.21.1)** shows the location of ALC within the Onshore Development Area. No differentiation is made within this data set between ALC Grades 3a and 3b within the provisional ALC data.

49. The Onshore Development Area is characterised by a series of contrasting ALC grades. The assessment presented in this chapter focuses only on direct effects to ALC land within the Onshore Development Area. Indirect effects on ALC land in the wider Land Use study area, located outside of the Onshore Development Area, are not considered to be significant as it is considered unlikely that there would be a temporary or permanent loss of ALC land during the construction and operation of the Projects. ALC Grade 2 covers 71% of the total Onshore Development Area, followed by Grade 3 covering 24%, using the Natural England data.

50. The percentage of land of different ALC grades for each element of the Onshore Development Area, which is based on Natural England data, is presented in **Table 21-11**.

Table 21-11 Provisional ALC Grades within the Onshore Development Area

ALC grade	Landfall Zone		Onshore Export Cable Corridor (including Onward Cable Connection)		Onshore Substation Zone		Onshore Development Area	
	Ha	%	Ha	%	Ha	%	Ha	%
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	10	24	222	72	68	100	326	71
3	21	49	78	26	N/A	N/A	112	24
4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Urban	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Non-agricultural	N/A	N/A	7	2	N/A	N/A	7	2
Total	42		307		68		457	

Note: 1. The grey shaded rows (ALC Grades 1-3) denote the BMV agricultural land with an assumption that all Grade 3 land is 3a and not 3b. This is highly conservative and protective approach which over-estimates the area of BMV land. 2. The differences between the total areas for the Landfall Zone, Onshore Export Cable Corridor and Onshore Substation Zone when compared to the total area of the Onshore Development Area is due to the inclusion of access roads, TCC etc within the total area calculations for the Onshore Development Area.

51. More detailed data relating to ALC, referred to as 'Post 1988 Agricultural Land Classification (England)' is available for the area north of Tickton. Unlike the provisional ALC data discussed above, this more detailed data set differentiates between Grade 3a and 3b. Within the Onshore Development Area between Eske Lane and Main Street both Grade 3a and 3b BMV land is present. This information has been incorporated into the construction and operation impact assessment (sections 21.6.1.2 and 21.6.2.2) where appropriate.

21.5.1.1.1 Landfall

52. Grade 3 soils comprise 49% of the Landfall Zone (not including the beach), with Grade 2 soils accounting for 2% of the total Landfall Zone (**Table 21-11**). The remaining 27% within the Landfall Zone is associated with the beach within the eastern part of the Landfall Zone.

53. It should be noted that the Landfall Zone would be a maximum of 41.9ha.

21.5.1.1.2 Onshore Export Cable Corridor and Onshore Substation Zone

54. The Onshore Export Cable Corridor (including the Onward Cable Connection to the proposed Birkhill Wood National Grid Substation) is predominantly comprised of both ALC Grades 2 (72%) and 3 land (26%), covering a combined area of approximately 300ha (see **Table 21-11**). This represents 0.22% and 0.08% of all Grade 2 and Grade 3 land respectively within the jurisdiction of East Riding of Yorkshire Council.

55. Non-agricultural land, located to the northwest of Tickton, comprises 2% of the Onshore Export Cable Corridor.

56. An ALC survey undertaken within the area of the Onshore Substation Zone in February 2024 identified that the area is dominated by ALC Grade 3b land which is not considered to be BMV land. The results of the ALC surveys are included in **Appendix A, OSMP** of the **OCoCP (Volume 8, application ref: 8.9)**. This differs from the ALC classification presented in the **Table 21-11** which has been based on the provisional Natural England ALC dataset. For the purposes of this assessment the 3b classification has been taken forward, based on the detailed results of the ALC surveys.

57. It should be noted that a large proportion of the land within the Onshore Export Cable Corridor study area is ALC Grade 2 (see **Volume 7, Figure 21-2 (application ref: 7.21.1)**) making avoidance of such BMV land impossible considering the footprint requirement.

21.5.1.2 Soil Types and Distribution

58. This section provides a description of the soils found within the Onshore Development Area, including the type, drainage, texture, fertility and moisture. The National Soils Map (National Soil Resources Institute, undated) classification has been used to determine the types of soil that exist within the Onshore Development Area.

59. It should be noted that the published soil data provide generic characteristics and is indicative of the soil type present. The precise soil type and characteristics would differ between and within individual fields and would be captured within the **Appendix A, OSMP** of the **OCoCP (Volume 8, application ref: 8.9)**. A detailed SMP will be prepared in accordance with the OSMP prior to construction.

60. Refence should be made to **Volume 7, Chapter 20 Flood Risk and Hydrology (application ref: 7.20)** for further details on soils in relation to flood risk and water. Any impact on the soil resource is not predicted to extend beyond the Onshore Development Area.

61. **Table 21-12** provides additional detail on the characteristics of the soil types found within the Onshore Development Area (Cranfield University, 2020).

Table 21-12 Soil Types within the Onshore Development Area

Soilscapes Definition	Texture	Drainage	Natural Fertility	Typical Habitats	Landcover	General Cropping	General Area within Onshore Development Area
Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Impeded drainage	Moderate	Seasonally wet pastures and woodlands	Grassland and arable some woodland	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, Onshore Export Cable Corridor
Slightly acid loamy and clayey soils with impeded drainage	Loamy some clayey	Slightly impeded drainage	Moderate to high	Wide range of pasture and woodland types	Arable and grassland	Reasonably flexible but more suited to autumn sown crops and grassland; soil conditions may limit safe groundwork and grazing, particularly in spring.	Landfall, Onshore Export Cable Corridor, Onshore Substation Zone
Loamy and clayey floodplain soils with naturally high groundwater	Loamy and clayey	Naturally wet	Moderate	Wet flood meadows with wet carr woodlands in old river meanders	Grassland some arable	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.	Onshore Export Cable Corridor
Freely draining lime-rich loamy soils	Loamy	Freely draining	Lime rich	Herb-rich chalk and limestone pastures; lime-rich deciduous woodlands	Arable with grassland at higher altitude	Well suited to spring and autumn-sown cereals and other crops including grass but the land is mostly nitrate vulnerable.	Onshore Export Cable Corridor
Loamy and sandy soils with naturally high groundwater and a peaty surface	Peaty	Naturally wet	Low to high	Wet meadows	Mostly arable	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	Onshore Export Cable Corridor
Naturally wet very acid sandy and loamy soils	Sandy and loamy	Naturally wet	Very low	Mixed dry and wet lowland heath communities	Arable and horticulture some wet lowland heath	Highly productive, where not stony, and suitable for cereals, roots, potatoes and vegetables but droughty and dependent on irrigation; lime and fertilisers are rapidly leached. Winter harvesting of roots will damage weak soil structure and lead to compaction.	Onshore Export Cable Corridor

21.5.2 Land Use

21.5.2.1 Land Use Designations

21.5.2.1.1 European Sites and National Designations

62. The landfall location overlaps with the following designated sites:

- Greater Wash Special Protection Area; and
- Holderness National Character Area.

63. Withow Gap, Skipsea SSSI and Burton Bushes SSSI are located within the 1km land use study area. The designated sites are located approximately 370m south of landfall and 115m east of the onshore cable corridor respectively.

64. The features of these designated sites along with Ancient Woodland (located within the Onshore Substation Zone) are discussed further in **Volume 7, Chapter 19 Geology and Land Quality, Volume 7, Chapter 22 Onshore Archaeology and Cultural Heritage,** and **Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**.

65. An assessment of significance in relation to the impact of construction and operation of the Projects on European Sites and nationally designated sites are provided in **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19), Volume 7, Chapter 22 Onshore Archaeology and Cultural Heritage (application ref: 7.22)**, and **Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**. An assessment of significance in relation to European Sites and designated sites has therefore not be duplicated within this chapter.

21.5.2.1.2 Local Wildlife Sites

66. A total of five LWS are present within the Onshore Development Area, all of which are non-statutory designated sites. The LWS located within the Onshore Development Area include:

- Beeford – Dunnington, designated due to good quality established semi-natural verge;
- Nunkeeling Lane designated due to Good quality 'vergescape' consisting of verge and ditch habitats and a hedgerow with 6 species per 30m sample;
- Raventhorpe Embankment, designated due to good quality established semi-natural linear grassland;
- Newbald Road, Beverley designated due to presence of good quality hedgerow; and

- Bentley Moor Wood, designated due to being an area of ancient semi-natural woodland.

67. In addition to those mentioned above, there are 18 LWS located within 1km of the Onshore Development Area.

68. Further discussion and an assessment of significance in relation to the impact of construction and operation of the Projects on LWS located within the Onshore Development Area is provided in **Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**. An assessment of significance in relation to LWS has therefore not be duplicated within this chapter.

21.5.2.2 Site Allocations

69. A review of the East Riding of Yorkshire local plan was undertaken to identify any areas of land that are allocated for, or restrict, future development or change of use. This included a review of the site allocation maps.

70. The review indicated that the Onshore Development Area is located within:

- A Coastal Change Management Area (see **Volume 7, Figure 21-4 (application ref: 7.21.1)**); and
- Local Plan Mineral Safeguarding Area – see **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)** for an assessment of the significance of the impact of the Projects on the MSA.

21.5.2.3 Public Rights of Way and Cycle Routes

71. There are 21 PRoW located within the Onshore Development Area. These comprise of 12 footpaths, four bridleways, four cycle routes. Local walking routes, including the Beverley 20, East Riding Heritage Way, and Wilberforce Way follow these PRoWs and have therefore been inherently assessed throughout this section.

72. **Table 21-13** identifies all PRoW and cycle routes, their reference and description. The crossing methodology for each of these features is currently being developed. The locations of these crossing points are presented on **Volume 7, Figure 21-5 (application ref: 7.21.1)**.

Table 21-13 PRoW and Cycle Routes

PRoW / Cycle Route Name	Reference	Description
Skipsea Footpath No.6	SKIPF06	Footpath
Seaton Footpath No.10	SEATF10	Footpath
Catwick Footpath No.8	CATWF08	Footpath
Riston Footpath No.2	RISTF02	Footpath
Tickton Footpath No.1	TICKF01	Footpath
Leconfield Footpath No.33	LECOF33	Footpath
Leconfield Bridleway No.27	LECOB27	Bridleway
Molescroft Footpath No.5 / Minster Way (East Riding Heritage Way)	MOLEF05	Footpath
Molescroft Footpath No.3	MOLEF03	Footpath
Molescroft Footpath No.6 / Wilberforce Way	MOLEF06	Footpath
Walkington Footpath No.6 (Beverly 20 Footpath / East Riding Heritage Way)	WALKF06	Footpath
Walkington Footpath No.4	WALKF04	Footpath
Walkington Footpath No.9 (Beverly 20 Footpath / East Riding Heritage Way)	WALKF09	Footpath
Rowley Bridleway No.13 (Beverly 20 Footpath / East Riding Heritage Way)	ROWLB13	Bridleway
Woodmansey Bridleway No.30 (Beverly 20 Footpath / East Riding Heritage Way)	WOODB30	Bridleway

PRoW / Cycle Route Name	Reference	Description
Woodmansey Bridleway No.6	WOODB06	Bridleway
Yorkshire Wolds	Route Number 1	National Cycle Network
Yorkshire Wolds	Route Number 164	National Cycle Network
Holderness Cycle Route	N/A	Cycle route
Beverley Cycle Route	N/A	Cycle route
Beverley Twenty & East Riding Heritage Way (also Minster Way Footpath) Long Distance Walkers Route	N/A	Marked Route

21.5.2.3.1 National Trails

73. The King Charles III England Coast Path (KCIIIECP) (Easington to Filey Brigg branch) and National Trail would be located within the Landfall Zone. The KCIIIECP is not a cliff top PRoW but will create an access strip from the alignment of the trail to the sea referred to as 'Spreading room' in Natural England's approved Coastal Access Scheme. This will allow the users of the KCIIIEP to roam freely anywhere on the seaward side of the trail.

21.5.2.4 Stewardship Schemes

74. Environmental Stewardship Schemes (ESS) allow farmers, tenants and other land managers to receive payment for their environmental land management. The scheme is an agri-environmental scheme that aims to:

- Conserve wildlife and biodiversity;
- Maintain and enhance landscape quality and character;
- Protect natural resources;
- Promote public access; and
- Provide flood management (Defra, 2019).

75. The scheme was launched in March 2005 to build on the Environmentally Sensitive Area Scheme, the Countryside Stewardship Scheme and the Organic Farming Scheme. The ESS are administered by Natural England on behalf of Defra.

76. The scheme has been built into the following three levels:

- Entry Level Stewardship (ELS): simple and effective environmental management open to all farmers and land managers;
- Organic Entry Level Stewardship (OELS): as ESS, but open to farmers of land managers whose land is either wholly or partially managed organically; and
- Higher Level Stewardship (HLS): more complex types of management and agreements which aims to provide significant environmental benefits to priority areas and is tailored to local circumstances.

77. The Countryside Stewardship Scheme (CSS) has sought to replace the ESS. The overarching aim of the scheme is to look after and improve the environment by conserving and restoring wildlife habitats, managing flood risk, creating and managing woodland, and reducing agricultural water pollution.

78. Similar to the previous ESS, CSS is divided into a number of elements, including:

- Mid-Tier – these are multi-year agreements that focus on widespread environmental issues, such as reducing water pollution or improving the farmed environment for farmland birds and wild pollinators;
- Wildlife Offers – these multi-year agreements with a range of highly targeted and effective options which include creating sources of nectar and pollen, winter food for seed-eating birds and improved habitats. The offers are tailored to specific farming practices;
- Higher Tier – these are multi-year agreements for the most environmentally important sites, including commons and woodlands. These are usually in places that need complex management, such as restoring habitats, and improving woodland; and
- Capital Grants – these are typically for two years with four different options available:
    - Hedgerows and boundaries – capital grant to restore existing farm boundaries;
    - Woodland Management Plans – one-off payment to support the production of UK Forestry Standard compliant 10-year woodland management plan;
    - Woodland Tree Health – one-off payment to restock or improve woodland due to tree health problems; and

- Woodland Creation Grant – two-year capital grant to plant and protect young trees.

79. Environment Land Management Schemes (ELMS) are planned for a full rollout by the end of 2024 and will eventually replace CSS. Three new schemes have been developed to support and reward environmental land management and the rural economy, whilst also contributing to government targets and commitments to net zero emissions by 2050. These schemes include:

- Sustainable Farming Incentive;
- Local Nature Recovery; and
- Landscape Recovery.

80. The location and area of the agri-environment schemes within the Onshore Development Area are shown on **Volume 7, Figure 21-3 (7.21.1)** and **Table 21-14**.

Table 21-14 Agri-Environment Schemes within the Onshore Development Area

Stewardship Scheme	**Count**	**Landfall**		**Onshore Export Cable Corridor (including Onward Cable Connection)**		**Onshore Substation Zone**		**Onshore Development Area**	
		Ha	**%**	**Ha**	**%**	**Ha**	**%**	**Ha**	**%**
Environmental Stewardship									
ELS and HLS Schemes	3	N/A	N/A	32	10	N/A	N/A	37	8
HLS	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OELS Schemes	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	3	N/A		32		N/A		37	
Countryside Stewardship Scheme									

Stewardship Scheme	Count	Landfall		Onshore Export Cable Corridor (including Onward Cable Connection)		Onshore Substation Zone		Onshore Development Area	
		Ha	%	Ha	%	Ha	%	Ha	%
CSS Mid-Tier, Higher Tier and Woodland Management Plan	6	N/A	N/A	12	3	N/A	N/A	12	3
Total	6	N/A		12		N/A		12	

The differences between the total areas for the Landfall Zone, Onshore Export Cable Corridor and Onshore Substation Zone when compared to the total area of the Onshore Development Area is due to the inclusion of access roads, TCC etc within the total area calculations for the Onshore Development Area.

81. ELS and HLS Schemes cover 37ha of land within the Onshore Development Area between Catwick and Sigglesthorne, the Long Riston area, to the west of Routh and to the north east of Bentley. This constitutes 8% of the Onshore Development Area.

82. CSS Schemes cover 12ha of the land within the Onshore Development Area. Middle-Tier Schemes are located in the area of Nunkeeling, between Catfoss and Sigglesthorne/Catwick and north of Bentley. Higher-Tier Schemes are located between Tickton and Beverley, and a Woodland Management Area is located between Catwick and Sigglesthorne.

21.5.2.5 Utilities

83. The majority of the identified utilities crossing the Onshore Development Area are for domestic services that include telecom, electricity, water, gas, sewage and street lighting. Electricity and gas transmission infrastructure is also present within the Onshore Development Area, with National Gas high pressure gas pipelines bisecting the Onshore Export Cable Corridors in the areas west of Dunnington and east of Nunkeeling. The Onshore Substation Zone is also bisected by the high pressure gas pipelines to the north of Bentley. National Grid Electricity Transmission overhead electricity transmission line and towers cross the Onshore Substation Zone in a north west to south east direction (see **Volume 7, Figure 21-6 (application ref: 7.21.1)**). A water pipeline is located at the eastern edge of the Onshore Substation Zone running in a north south orientation.

21.5.3 Future Trends

84. In the event that the Projects are not developed, an assessment of future conditions for Land Use has been carried out and is described within this section.

85. The baseline conditions presented within this chapter will be subject to change over the duration of the Projects. 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 duration of the Projects, it would be anthropogenic drivers that are more likely to drive macro-scale land use change (i.e. through population growth or changes in distribution, changes in land use management and development practices, and responding to economics – especially those pertaining to agriculture).

86. 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 agri-chemicals and industrial fertiliser to ensure continued high crop yields. Such changes in land cover and associated agricultural practice 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 dependent wildlife habitats and their biodiversity (Sohl et al., 2012).

87. Between 1991 and 2021, the population of the East Riding of Yorkshire Council area has steadily increased from 292,007 to an estimated 343,143 and this is projected to increase to 360,033 by 2041 (East Riding of Yorkshire Council, 2023). Given the current baseline environment within the land use 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.

88. There are a number of DCO projects, including those associated with the onshore elements of offshore wind farm projects, and smaller solar farm developments, located within the East Riding of Yorkshire area. The presence of these developments may lead to a reduction in the total area of land available for agricultural use, for example agricultural land would be lost in areas where convertor stations are located and any associated permanent easements/access roads.

89. 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.

21.6 Assessment of Significance

21.6.1 Potential Effects During Construction

21.6.1.1 Impact 1 Agricultural Drainage

90. There is the potential for the groundworks associated with the Onshore Export Cable installation and Onshore Converter Station construction to impact the natural and artificial field drainage systems. These systems, both natural and artificial, play an important role by ensuring soils remain aerated and reduce the risks associated with surface water flooding to the agricultural land itself and surrounding environment.

91. Existing field drains are expected to be made of ceramic or plaster and are typically found at a depth between 0.5 to 1.5m. As such, it is likely that the drains would be impacted by any excavation works through agricultural fields. More information regarding the local drainage system is provided in **Volume 7, Chapter 20 Flood Risk and Hydrology (application ref: 7.20)**.

21.6.1.1.1 Sensitivity of Receptor

92. Field drainage networks have a limited capacity to accommodate changes such as degradation or poor reinstatement. Therefore, they are considered to have a medium sensitivity overall.

21.6.1.1.2 Magnitude of Impact – DBS East or DBS West In Isolation

93. Agricultural drainage within an area >20ha would be impacted during the medium to long term. However, with the implementation of embedded mitigation measures discussed in **Table 21-3**, with specific reference to the **Outline Drainage Strategy (Volume 8, application ref: 8.12)**, there would be minimal or no disruption to the field drainage system. Therefore, the magnitude of impact is considered negligible for the Projects In Isolation.

21.6.1.1.3 Magnitude of Impact – DBS East and DBS West Together (Sequential)

94. A scenario where the Projects are developed Sequentially would represent the worst-case scenario for the impacts to drainage. Agricultural drainage would potentially be impacted for a longer duration due to the increased construction programme.

95. As with the Projects In Isolation, agricultural drainage within an area >20ha would be impacted during the medium to long term. However, with the implementation of the embedded mitigation measures discussed in **Table 21-3**, with specific reference to the **Outline Drainage Strategy (Volume 8, application ref: 8.12)**, there would be minimal or no disruption to the field drainage system. Therefore, the magnitude of impact is considered negligible for the Projects, the magnitude of impact for the Projects together is considered negligible.

21.6.1.1.4 Significance of Effect – All Scenarios

96. The negligible adverse magnitude of impact, on a medium sensitivity receptor represents a **minor** adverse significance of effect.

21.6.1.1.5 Mitigation and Residual Significance of Effect – All Scenarios

97. The potential significance of effect is **minor** adverse, which is not deemed to be significant in EIA terms. Therefore, no additional mitigation is required.

21.6.1.2 Impact 2 Temporary Loss of Agricultural Land

98. The majority of the Onshore Development Area is located within areas currently associated with agricultural production. The footprint of the Onshore Development Area, including Landfall Zone, Onshore Export Cable Corridor, TCCs and construction accesses would all contribute to the temporary loss of land for agriculture.

99. Construction activities also have the potential to isolate land outside of the Onshore Development Area which would effectively take it out of agricultural use. This would result in the loss of growing seasons in the area affected with associated loss of agricultural related income.

100. Due to the varying sizes of farms located within and surrounding on the Onshore Development Area, there is the potential for landowners/occupiers to be impacted to varying extent by the loss of agricultural land when compared to other larger farms.

101. Agricultural land take associated with the Onshore Converter Station (s) is considered to be permanent, and as such, is assessed as an operational impact in section 21.6.2.2.

21.6.1.2.1 Sensitivity of Receptor

102. The quality of the agricultural land present within the Onshore Development Area primarily consists of ALC Grade 2 (74%) and 3 (25%) agricultural land, but also contains non-agricultural land (2%). As mentioned previously, all ALC Grade 3 agricultural land is assumed to be Grade 3a and consequently included within the BMV banding. Therefore, the sensitivity of the receptor, in accordance with **Table 21-6**, is considered to be high to reflect the dominance of ALC Grade 2 land.

21.6.1.2.2 Magnitude of Impact – DBS East or DBS West In Isolation

103. Based on the worst-case parameters set out in **Table 21-1**, the total construction footprint within agricultural land would be >20ha for either of the Projects In Isolation with the majority of agricultural land affected located along the linear Onshore Export Cable Corridor.

104. As the potential effect will be felt over the length of the long linear Onshore Export Cable Corridor, effects would not be concentrated in any one area or on any one farm or landowner. In addition, although the construction periods at landfall and along the Onshore Export Cable Corridor would be 18 months and 33 months respectively, construction works would not be operating continuously at the same location during the whole construction phase.

105. As stated in **Table 21-3**, land would be reinstated between Jointing Bays following the installation of cable ducts, within 2 years (24 months), although in certain sections a Haul Road may need to stay in place for longer. This would limit the areas temporarily restricted for agricultural use for longer than 2 years to the TCCs along the Onshore Export Cable Corridor, TJB Compound, located within the Landfall Zone and the Jointing Bays located approximately every 750 to 1500m. The Jointing Bays and TJB Compound at the landfall would require further construction works when the cables for the Project were installed by pulling them through the pre-installed ducts from cable drums. Taking this into consideration, most importantly the fact that farms would have the majority of their agricultural land returned to them reinstated to its original condition, within 2 years or following the completion of construction, the works are deemed temporary (short-term) and the magnitude of impact is considered to be low adverse.

21.6.1.2.3 Magnitude of Impact – DBS East and DBS West Together (Sequential)

106. A scenario where the Projects are developed Sequentially would represent the worst-case scenario for the temporary loss of land for agriculture.

107. As with the Projects In Isolation, in this scenario, the total construction footprint within agricultural land would be >20ha with the majority of agricultural land affected located along the linear Onshore Export Cable Corridor.

108. As the potential effect will be felt over the length of the Onshore Export Cable Corridor, effects would not be concentrated in any one area. In addition, although the construction periods at landfall and along the Onshore Export Cable Corridor would be 48 months and 57 months respectively for the Sequential Scenario, construction works would not be operating continuously at the same location during the whole construction phase.

109. As stated above and in **Table 21-3**, a commitment to install ducts for both Projects at the same time has been made and land would be reinstated between Jointing Bays following the installation of cable ducts, within 2 years, although in certain sections a Haul Road may need to stay in place for longer. This would limit the areas temporarily restricted for agricultural use for longer than 2 years to the TCCs along the Export Cable Corridor, TJB Compound, located within the Landfall Zone and the Jointing Bays located approximately every 750 to 1500m. The Jointing Bays and TJB Compound at the Landfall would require further construction works when the cables for the Projects were installed by pulling them through the pre-installed ducts from cable drums. Taking this into consideration, most importantly the fact that farms would have the majority of their agricultural land returned to them reinstated to its original condition, within 2 years or following the completion of construction, The works are therefore deemed temporary (short-term) and the magnitude of impact is considered to be low adverse.

21.6.1.2.4 Significance of Effect – All Scenarios

110. The potential impact on temporary loss of agricultural land associated with the construction of the Projects In Isolation or together (Sequential Scenario or Concurrent Scenario) is low magnitude on a high sensitivity receptor. Therefore, the potential significance of effect is considered **moderate** adverse.

21.6.1.2.5 Mitigation and Residual Significance of Effect – All Scenarios

111. As set out in **Table 21-3**, the site selection process for the Projects has sought to minimise land take and where possible, minimise the potential for land parcels to become sterilised as a result of construction activity within the Onshore Development Area. This has involved alignment of the Onshore Development Area with field boundaries and utilising existing vehicle access tracks, where possible.

112. In addition to the embedded mitigation already considered in **Table 21-3** the following additional mitigation will also be implemented:

- Wherever practicable, access to severed land for farm vehicles would be maintained subject to individual agreements with landowners and occupiers. Where necessary, crossing points would be agreed pre-construction, as secured in DCO Requirement 19;
- In order to reduce conflicts, appropriate planning and timings of works would be discussed with landowners and occupiers, as secured in DCO Requirement 19; and

- Private agreements (or compensation in line with the compulsory purchase completion code) will be sought with relevant landowners / occupiers, as secured within the voluntary landowner agreements within Schedule 7 of the **draft DCO (Volume 3, application ref: 3.1)**.

113. The potential impact on temporary loss of agricultural land associated with the construction of the Projects In Isolation or Together, taking the additional mitigation into account is negligible magnitude on a high sensitivity receptor and is considered a **minor adverse** significance of effect and therefore, deemed to be not significant in EIA terms. However, as noted previously due to the varying sizes of farms located within and surrounding on the Onshore Development Area, there is the potential for landowners/occupiers to be impacted to varying extent by the loss of agricultural land when compared to other larger farms.

21.6.1.3 Impact 3 Soil Degradation and Loss of Soil to Erosion

114. There is the potential for soils to become compacted and for soil structure to deteriorate during construction works. Degradation is most likely to occur at TCC locations and along access routes where heavy materials and equipment are stored. Similarly, changes to the soil structure can affect local drainage (this is described in **Volume 7, Chapter 20 Flood Risk and Hydrology (application ref: 7.20)**).

115. Deterioration of the soil structure can lead to reduced biological activity, water infiltration, soil porosity and permeability. Deterioration can also lead to an increased soils strength and risk of erosion (European Commission, 2008). These impacts can lead to reduced fertility and crop yields.

116. Soil quality can also be adversely affected by spills and leaks of contaminative materials (this is described in **Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)**). It can also be adversely affected by the drying and decomposition of peaty layers during stockpiling.

117. There is also the potential for soil erosion to occur during construction works, with some types of soils more susceptible to erosion than others. Additional factors that influence erosion include the soil texture, landscape, weather and land use.

118. Excavation, storage and reinstatement exposes the soils and creates an opportunity for erosion to occur. Loss of soil via erosion, may lead to a reduction in the quality of soils and therefore impact on the value of the agricultural land within the Onshore Development Area.

119. The following activities proposed during the onshore construction works have the potential to degrade and erode the existing soil resource:

- Intrusive pre-construction surveys;
- Removal of trees / vegetation;
- Topsoil stripping and earthworks within the construction footprint;
- Use of the Haul Roads and mobilisation areas; and
- Stockpiling and reinstatement of soil.

21.6.1.3.1 Sensitivity of Receptor

120. The soils within the Onshore Development Area are mostly loamy and clayey in nature. Clayey soils have few sand grains and a lot of very small particles. Loamy soils have a mix of sand, silt and clay-sized particles and are therefore susceptible to compaction.

121. The cohesive nature of clayey and loamy soils results in a low vulnerability in relation to erosion. They are also difficult to handle during wet periods using machinery, without causing structural degradation. Given these characteristics, the soil resource within the Onshore Development Area is assigned a conservative value of medium sensitivity with respect to the potential for degradation and erosion during the construction period.

21.6.1.3.2 Magnitude of Impact – DBS East or DBS West In Isolation

122. Soil within construction areas would be subject to earthworks including initial stockpiling and movement between stockpiles. It is considered that >20ha of soil would potentially be affected temporarily, up to 18 months at landfall, 33 months along the Onshore Export Cable Corridor and 4 years within the Onshore Substation Zone. However, with the implementation of embedded mitigation measures discussed in **Table 21-3**, with specific reference to **Appendix A,** OSMP, of the **OCoCP (Volume 8, application ref: 8.9)**) there would be minimal or no impacts on soils. Therefore, the magnitude of impact is considered to be negligible adverse.

21.6.1.3.3 Magnitude of Impact – DBS East and DBS West Together (Sequential)

123. A scenario where the Projects are developed Sequentially represents the worst-case scenario for the potential degradation and erosion of soils.

124. In this scenario, the total construction footprint within agricultural land would be >20ha for a longer period of time, up to 48 month at landfall, 57 months along the Onshore Export Cable Corridor and 6 years within the Onshore Substation Zone. The amount of time construction traffic, heavy machinery and heavy materials would spend on site is therefore increased.

125. Soil within the construction areas would be subject to earthworks including initial stockpiling and movement between stockpiles. The total space required for soil storage is also greater for the Projects together when compared to the In Isolation Scenario.

126. For this scenario, >20ha of soil would potentially be affected temporarily. However, as with the Projects In Isolation, with the implementation of embedded mitigation measures discussed in **Table 21-3**, there would be minimal or no impacts on soils. Therefore, the magnitude of impact is considered to be negligible adverse.

21.6.1.3.4 Significance of Effect – All Scenarios

127. The negligible adverse magnitude of impact, on a medium sensitivity receptor represents a **minor** adverse significance of effect.

21.6.1.3.5 Mitigation and Residual Significance of Effect – All Scenarios

128. The potential significance of effect is **minor** adverse, which is deemed to be not significant in EIA terms. Therefore, no additional mitigation is required.

21.6.1.4 Impact 4 Impact to Environmental Stewardship Schemes (ESS)

129. During the construction period there would be the potential for impacts to ESS within the Onshore Development Area. The effect on individual landowners / occupiers with agreements in place would depend on the extent and duration of construction works within the land parcels managed, in addition to the terms and conditions attached to the agreement in place.

130. Two potential connected impacts on ESS are anticipated as a result of construction:

- Ecological – loss of agreements and the substantive agri-environmental objectives of the scheme (i.e., loss of field margins); and
- Financial – loss of the agreement and the impact in overall farming income.

131. The Onshore Development Area interacts with three different ESS classified at Entry Level plus Higher Level Stewardship, which represents 8.13% of the Onshore Development Area. The Onshore Development Area also crosses six CSS classified as Middle Tier, one Higher Tier and one Woodland Management Plan area (see **Volume 7, Figure 21-3 (application ref 7.21.1)**).

132. In some instances, it has not been possible to avoid land managed under an agri-environment scheme, resulting in a landowner / occupier being potentially unable to meet the terms of the agreement. The level of impact could range from no change, a minor or temporary change such as the need to make changes to grazing or cropping requirements or the termination of the agreement.

133. The impact on specific agreements will only be known following detailed design and / or once the Applicants have entered into agreements with the landowners confirming the extent and duration of impacts to specific land parcels.

134. The primary mitigation measures relating to agri-environment schemes would be the avoidance of land parcels that are subject to agreements. This, however, has not been possible in some areas of the Onshore Development Area (e.g. the Onshore Export Cable Corridor). Where impacts to an agreement cannot be avoided, the affected landowners and/or occupiers will be consulted prior to construction to enable them to liaise with the Rural Payments Agency. This will include compensation provisions to reimburse a landowner and/or occupiers' financial losses, where appropriate.

135. Following completion of the construction works of the Projects (In Isolation, Concurrently or Sequentially) land will be reinstated to its original condition and would therefore be available for management under an agri-environmental scheme in the future.

136. Ecological losses associated with the impacts to agri-environmental schemes are assessed within **Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**.

21.6.1.5 Impact 5 Disruption to Existing Utilities

137. The majority of the identified utilities crossing the Onshore Development Area are for local distribution, telecommunication and water networks supplying domestic and commercial premises within the area. The Onshore Development Area would also cross underneath a National Grid Electricity Transmission 400kV overhead line route, a buried INEOS high pressure ethylene pipeline in two locations and a buried National Gas Transmission high pressure gas pipeline in two locations (see **Volume 7, Figure 21-6 (application ref 7.21.1)**).

138. The Onshore Export Cable Corridor crosses the Dogger Bank A and B offshore wind farm underground cable route to the west of Routh and again to the south west of the A1079. The cable route for the Hornsea Project Four offshore wind farm crosses the Onshore Export Cable Corridor south west of the A1079.

139. The Projects would undertake utility crossings in accordance with industry standard practice and safety guidance such as HSG47 *'Avoiding Danger from Underground Services'* and GS6 *'Avoiding Danger from Overhead Power Lines'* as agreed with the utilities owners. Therefore, **no change** associated with existing utilities are anticipated under any of the construction scenarios.

21.6.1.6 Impact 6 Disruption to users of Recreational Routes

140. The Onshore Development Area crosses numerous recreational routes such as PRoWs (including bridleways and footpaths), a marked way and National Cycle Network routes, as shown on **Volume 7, Figure 21-5 (application ref: 7.21.1)**. The Onshore Development Area also crosses the proposed route of the King Charles III England Coast Path at landfall. Construction of the Projects will require the crossing of recreational routes at 22 locations (see **Appendix 5-2, Obstacle Crossing Register (Volume 7, application ref: 7.5.5.2)** for full details). The crossing methodology for each of these features is provided within **Appendix C, Outline Public Rights of Way Management Plan** of the **OCoCP (Volume 8, application ref: 8.9)**.

141. In relation to Walkington Footpath No.4, which interacts with the permanent access road to the Onshore Converter Stations, there may be the requirement for a change in level in order to cross the access road. A short diversion to the existing footpath may be required to accommodate the construction of an access ramp so that the route remains accessible for all (see **Appendix C, Outline Public Rights of Way Management Plan** of the **OCoCP (Volume 8, application ref: 8.9)**).

142. Potential interactions with recreational routes are limited to works along the Onshore Export Cable Corridor and Onshore Substation Zone. The landfall works would not require closure of any recreational routes.

21.6.1.6.1 Sensitivity of Receptor

143. PRoWs are considered to be regionally important receptors and are as assessed as medium sensitivity, whereas National Trail, Coastal Path and National Cycle Network routes are considered to be nationally important receptors and are assessed as high sensitivity.

21.6.1.6.2 Magnitude of Impact – DBS East or DBS West In Isolation

144. The onshore cable duct would be installed in sections approximately 750m to 1.5km in length, shorter sections may be required at trenchless crossings, see **Volume 7, Chapter 5 Project Description (application ref: 7.5)**. Where the Onshore Export Cable Corridor crosses any of the recreational routes there would be a construction presence and open excavations.

145. In the absence of mitigation, this would prevent public access and in effect would represent a temporary closure until the works along that stretch of the Onshore Export Cable Corridor are complete. However, with the implementation of the PRoW Management Plan (see **Table 21-3**) as embedded mitigation, there would be minimal or no disruption to recreational routes. Therefore, the magnitude of impact is considered to be negligible.

21.6.1.6.3 Magnitude of Impact – DBS East and DBS West Together (Concurrent or Sequential)

146. As with the Projects In Isolation, with the implementation of PRoW Management Plan, there would be minimal or no disruption to recreational routes. Therefore, the magnitude of impact is considered to be negligible.

21.6.1.6.4 Significance of Effect –All Scenarios

147. In relation to PRoW, for both the Projects In Isolation or together (Concurrently or Sequentially), the magnitude of impact is negligible on a high sensitivity receptor, representing a **minor** adverse significance of effect.

148. In relation to the National Trail, Coastal Path and National Cycle Network routes, for both the Projects In Isolation or together (Concurrently or Sequentially), the magnitude of impact is negligible on a high sensitivity receptor, representing a **minor** adverse significance of effect.

21.6.1.6.5 Mitigation and Residual Significance of Effect – All Scenarios

149. The potential significance of effect is **minor** adverse, which is not deemed to be significant in EIA terms. Therefore, no additional mitigation is required.

21.6.2 Potential Effects During Operation

21.6.2.1 Impact 1 Disruption to Field Drainage

150. The Projects would primarily be located on rural, agricultural land where there are limited existing formal surface water drainage systems. There are, however, a large number of agricultural land drains, ordinary watercourses and Internal Drainage Board (IDB) maintained watercourses located along the route of the Onshore Export Cable Corridor.

151. Permanent above ground infrastructure and hard standing at the Onshore Converter Station (s), as well as the presence of buried cables has the potential to affect field / land drainage during operation (see **Volume 7, Chapter 20 Flood Risk and Hydrology (application ref: 7.20)** for further detail).

152. Where the Projects intercepts land drainage, pre-construction drainage would be installed at the edge(s) of the Onshore Export Cable Corridor. This permanent drainage would intercept existing field drains and ensure the integrity of the existing land drainage is maintained during construction and operation of the Projects (see the **Outline Drainage Strategy (Volume 8, application ref: 8.12)** for further details).

153. Whilst there would be a permanent change to field drainage at the Onshore Converter Station (s) during operation, post construction drainage will be installed following the completions of the works providing restoration of drainage capacity (see the **Outline Drainage Strategy (Volume 8, application ref: 8.12)** for further details).

154. In addition, it is anticipated that surface water run-off from the Onshore Converter Stations will be collected by perimeter drains and attenuated within an adjacent Sustainable Drainage System (SuDS) basin prior to discharge into a nearby watercourse in compliance with the **Flood Risk Assessment (FRA)** as presented in **Volume 7, Appendix 20-4 (application ref: 7.20.20.4)** and **Outline Drainage Strategy (Volume 8, application ref: 8.12)**). This would ensure that any water discharged from the Onshore Converter Stations into the surrounding drainage network would be at the existing runoff rate.

155. With the implementation of the measures included within the **Outline Drainage Strategy (Volume 8, application ref: 8.12)**, it is considered that there would be **no change** upon field drainage for either scenario during the operational phase.

21.6.2.2 Impact 2 Permanent Loss of Land for Agriculture

156. The Onshore Export Cables would be buried to an indicative depth of 1.6m and following reinstatement, normal agricultural activities would be able to continue following completion of the construction works.

157. Jointing Bays would be required along the route of the Onshore Export Cables to connect sections of cable, approximately every 0.75 to 1.5km (dependent on the size of the cable drum). Up to four Transition Joint Bays (TJBs) would also be located at the landfall, where the Offshore and Onshore Export Cables are connected. Jointing Bays and Link Boxes would be located below ground level and would be accessed via a permanent covered man-hole. The dimensions of the Link Boxes at the Landfall and along the Export Cable Corridor are included in **Table 21-1** and would be the only areas of permanent agricultural loss. Each Link Box would be marked with a permanent marker at each location (see **Table 21-1**).

158. Routine maintenance is anticipated as consisting of one annual visit to Link Boxes to carry out routine integrity tests with periodic testing of cables likely required every two to five years. Possible non-intrusive checking of the cables in between Jointing Bays with, for instance, ground penetrating radar may also be required.

159. Link Boxes would be located adjacent to field boundaries and roads as far as reasonably practicable.

160. The footprint of the Onshore Converter Stations, associated SuDS basin and landscaping would represent permanent land take for the duration of the operational phase, a total area of approximately 41.72ha. An area of approximately 33ha, 44% of the total area within the Onshore Substation Zone (as shown on **Volume 7, Figure 5-4 (application ref: 7.5.1)** will be returned to agriculture during the operational phase.

21.6.2.2.1 Sensitivity of Receptor

161. The sensitivity of the receptor is considered to be high to reflect the dominance of ALC Grade 2 land within the Onshore Development Area.

162. In relation to the footprints of the Onshore Converter Station, SuDS basin and landscaping the results of site specific ALC survey concluded that this area of the Onshore Development Area is classified as Grade 3b land. As such, the sensitivity is considered to be medium.

21.6.2.2.2 Magnitude of Impact – DBS East or DBS West In Isolation

163. The Projects In Isolation would require the installation of two Transition Joint Bays at landfall and an estimated number of 103 Link Boxes, located approximately every 0.75 to 1.5km along the Onshore Export Cable Corridor. All Link Boxes would be located below ground with an above ground marker post at each location. This is not considered to represent a significant loss of agricultural land.

164. The worst-case total permanent land take for the footprint of the Onshore Converter Stations for either of the Projects In Isolation is approximately 26.29ha (based on one HVDC convertor station, landscaped areas, access route and SuDS basin).

165. The total permanent land take for the Projects (In Isolation) along the permanent easement of the Onshore Export Cable Corridor and at the Substation Zone is >20ha. Therefore, the magnitude of impact is considered to be high adverse.

21.6.2.2.3 Magnitude of Impact - DBS East and DBS West Together (Concurrently or sequentially)

166. The total permanent land take associated with the Substation Zone for the Projects (Concurrently or Sequentially) is approximately 41.72ha of a total area of the Onshore Substation Zone of approximately 74.80ha (based on two HVDC convertor stations, landscaped areas, access route and drainage requirements).

167. The Projects (Concurrently or Sequentially) would require four Transition Joint Bays at landfall and the installation of an estimated number of 205 Link Boxes located approximately every 0.75 to 1.5km along the Onshore Export Cable Corridor. As with the Projects In Isolation, it is proposed that all Link Boxes would be located below ground with an above ground manhole and marker post at each location. This is not considered to represent a significant loss of agricultural land.

168. The total permanent land take for the Projects (Concurrently or Sequentially) along the permanent easement of the Onshore Export Cable Corridor and at the Substation Zone is >20ha. Therefore, the magnitude of impact is considered to be high adverse.

21.6.2.2.4 Significance of Effect – All Scenarios

169. For the Projects In Isolation or together (Concurrently or Sequentially) the permanent land take along the permanent easement of the Onshore Export Cable Corridor and at the Substation Zone, without mitigation, the magnitude of impact is high adverse on a high sensitivity receptor. Therefore, the potential significance of effect is considered **major** adverse without mitigation.

21.6.2.2.5 Mitigation and Residual Significance of Effect

170. The significance of effect in relation to the loss of agricultural land during the operation of the Projects cannot be reduced as the land would be unavailable for use in the medium to long-term. As such, the significance of effect remains **major** adverse for the Substation Zone and the area of the Onshore Converter Station, SuDS basin and landscaping and **major** adverse for the remainder of the Onshore Development Area. It should be noted, that following completion of construction, approximately 33ha, 44% of the total area of land within the Onshore Substation Zone (as shown on **Volume 7, Figure 5-4 (application ref: 7.5.1)** will be returned to agriculture.

21.6.2.3 Impact 3 Environmental Stewardship Schemes

171. Following construction, all land under an agri-environmental scheme within the Onshore Export Cable Corridor would be reinstated to its original condition, with the exception of the Link Boxes. Given the size of each link box, they are not expected to have an impact on the management requirements under an agri-environmental scheme. As such, in relation to Link Boxes, there would be **no change** during the operational phase.

172. The Onshore Converter Station (s) would not be located within an area under an existing agri-environmental scheme and so there would be **no change** during the operational phase.

21.6.2.4 Impact 4 Disruption to Existing Utilities

173. The majority of planned and emergency maintenance activities along the Onshore Export Cable Corridor would typically be undertaken at joint locations. The cables would be installed in ducts and sections can be removed at joint locations without the need for extensive excavations elsewhere along the corridor. There however remains the potential that some repair activities may be required to the ducts themselves that could require intrusive works between joint locations.

174. Utilities are considered to be highly sensitive, in particular electricity, gas and water mains, due to the potential disruption that could be caused should the services be disrupted. The majority of the identified utilities crossing the Onshore Development Area are for domestic services that include telecom, electricity, water, gas, sewage and street lighting.

175. Any maintenance undertaken would involve contacting potentially affected utility providers and the location of existing services would be identified prior to maintenance works to ensure no change to these utilities.

176. The Projects would undertake utility crossings in accordance with industry standard practice as agreed with the utility owners. The DCO application would also include protective provisions in favour of the utilities providers to provide protection for their assets. Therefore, **no change** is anticipated during the operation for either scenario.

21.6.2.5 Impact 5 Disruption to Users of Recreational Routes

177. Routine and ad hoc maintenance activities are not anticipated to require disruption to or closure of any paths or cycle routes and would not interfere with local recreation activities such as walking or cycling.

178. Any temporary diversion routes proposed for the construction phase would be removed and the original routes reinstated post-construction. In relation to Walkington Footpath No.4, which interacts with the permanent access road to the Onshore Converter Stations, there is a requirement for a change in level in order to cross the access road. A short diversion to the existing footpath is required to accommodate the construction of an access ramp so that the route remains accessible for all (see **Appendix C, Outline Public Rights of Way Management Plan** of the **OCoCP (Volume 8, application ref: 8.9)**).

179. There would be no permanent closures of any recreational routes, therefore, **no change** is predicted during the operation for either scenario.

21.6.2.6 Impact 6 Soil Heating

180. The transmission of electricity results in small energy losses in the form of heat dissipation. However, the design of the onshore cable system would seek to minimise any energy losses. Depending on the thermal resistivity of the soil and the height of the water table, it is likely that a stabilised backfill such as cement bound sand (CBS) would be required to encase the cable ducts. This is commonly used to ensure that the thermal conductivity of the material around the cables is of a known consistent value for the length of the installation. CBS has a low thermal resistance to conduct the heat produced during electricity transmission.

181. Any effect on soil heating would be highly localised to the area immediately surrounding the cable system. Where laid in trenches, cables would be buried at an indicative depth of 1.6m, with the principal root growth zone generally accepted to be within the first 50mm of the soil from the surface. In addition, the use of CBS would remove any material heat transfer from the cables to the surrounding environment.

182. Operation of the onshore cable would result in no change in the temperature at the ground surface or first 50mm of soil. Overall, therefore **no change** is anticipated.

21.6.3 Potential Effects During Decommissioning

183. No decision has been made regarding the final decommissioning policy for the Onshore Export Cables, as it is recognised that industry best practice, rules and legislation change over time. It is likely that the cables would be pulled through the ducts and removed, with the ducts themselves left in situ.

184. In relation to the Onshore Converter Stations, the programme for decommissioning is expected to be similar in duration to the construction phase. The detailed activities and methodology would be determined later within the project lifetime. Any such methodology and associated mitigation would be agreed with the relevant authorities and statutory consultees through a decommissioning plan in accordance with the requirements of the **draft DCO (Volume 3, application ref: 3.1)**. The detailed activities and methodology are expected to include:

- Dismantling and removal of outside electrical equipment from site located outside of the Onshore Converter Stations' buildings;
- Removal of cabling from site;
- Dismantling and removal of electrical equipment from within the Onshore Converter Stations' buildings;
- Removal of main Onshore Converter Stations' buildings and minor services equipment;
- Demolition of support buildings and removal of fencing;
- Landscaping and reinstatement of the site (including land drainage); and
- Removal of areas of hard standing.

185. The decommissioning works could be subject to a separate licencing and consenting approach.

186. Whilst details regarding the decommissioning of the Onshore Converter Stations are currently unknown, considering a worst-case scenario, which would be the removal and reinstatement of the current land use, it is anticipated that the impacts would be similar or less than those during construction.

21.7 Potential Monitoring Requirements

187. There are no onshore monitoring requirements identified for land use.

21.8 Cumulative Effects Assessment

188. Cumulative effects can be defined as incremental effects on that same receptor from other proposed and reasonably foreseeable schemes and developments in combination with the Projects. This includes all schemes 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.

189. The overarching method followed in identifying and assessing potential cumulative effects in relation to the onshore environment is set out in **Volume 7, Chapter 6 EIA Methodology (application ref: 7.6)** and **Volume 7, Appendix 6-1 Onshore Cumulative Effects (application ref: 7.6.6.1)**. The approach is based upon the Planning Inspectorate Advice Note Seventeen: Cumulative Effects Assessment (PINS 2017). The approach to the CEA is intended to be specific to DBS Projects and takes account of the available knowledge or the environment and other activities around the Onshore Development Area.

190. The CEA has followed a four-stage approach developed from the Planning Inspectorate Advice Note Seventeen. These stages are set out in Table 6-1-2 of **Volume 7, Appendix 6-1 Onshore Cumulative Assessment (application ref: 7.6.6.1)**. Stage four of this process, the CEA assessment is undertaken in two stages.

191. The first step in the CEA is the identification of which residual impacts assessed for the Projects on their own have the potential for a cumulative impact with other schemes, plans, projects and activities. This information is set out in **Table 21-15** which sets out the potential impacts assessed in this chapter and identifies the potential for cumulative effects to arise, providing a rationale for such determinations. Only potential impacts assessed as negligible or above are included in the CEA. Those assessed as 'no change' are not taken forward as there is no potential for them to contribute to a cumulative impact.

Table 21-15 Potential Cumulative Effects

Potential Impact	Potential for Cumulative Effect	Justification
Construction		
Impact 1 Agricultural Drainage	Yes	Impacts may occur to individual field drains in any area of overlap or those with an extent which intersects two or more proposed development boundaries (where groundworks are anticipated).
Impact 2 Temporary Loss of Agricultural Land	Yes	Impacts may occur where project boundaries overlap spatially or temporally on the same landowner/occupier's land. Such impacts have the potential to affect local productivity.

Potential Impact	Potential for Cumulative Effect	Justification
Impact 3 Soil Degradation and Loss of Soil to Erosion	Yes	Impacts may occur where project boundaries overlap spatially or temporally on the same landowner/occupier's land. Such impacts have the potential to affect local productivity.
Impact 4 Impact to Environmental Stewardship Schemes (ESS)	Yes	Impacts may occur where project boundaries overlap spatially or temporally on land subject to the same ESS. Such impacts have the potential to affect land under CSS (e.g. loss of earnings from ESS or failure to achieve environmental objectives).
Impact 5 Disruption to Existing Utilities	No	Potentially affected utility providers would be contacted and the location of existing services would be identified prior to the commencement of construction works to ensure there would be no change.
Impact 6 Disruption to users of Recreational Routes	Yes	Cumulative effects may occur depending on the timing of works relative to other projects.
Operation		
Impact 1 Disruption to Field Drainage	No	Considered to have no direct impact, therefore it is not taken forward.
Impact 2 Permanent Loss of Land for Agriculture	Yes	Cumulative effects may occur at both a local and/or county scale where impacts to productivity affect the agriculture industry.
Impact 3 Environmental Stewardship Schemes	No	Following completion of works, land located within ESS would be reinstated and so no cumulative effects are thought to exist. Therefore it is not taken forward.
Impact 4 Disruption to Existing Utilities	No	Potentially affected utility providers would be contacted and the location of existing services would be identified prior to works ensure there would be no change.

Potential Impact	Potential for Cumulative Effect	Justification
Impact 5 Disruption to Users of Recreational Routes	No	Considered to have no change, therefore it is not taken forward.
Impact 6 Soil Heating	No	Considered to have no change, therefore it is not taken forward.
Decommissioning		
The detail and scope of the decommissioning works would be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. As such, cumulative effects during the decommissioning phase are assumed to be the same as those identified during the construction phase.		

192. The second stage 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 the Projects. To do this, a short list of schemes for CEA has been produced relevant to Land Use following the approach outlined in **Volume 7, Appendix 6-1 Onshore Cumulative Assessment (application ref: 7.6.6.1)**. The second stage of this assessment is only undertaken, as is this case in this Chapter, if the first stage identifies that cumulative effects are possible.

193. The CEA has been based on information available on each potential scheme (e.g. as set out on the East Riding of Yorkshire Council and Hull City Council planning portals and the Planning Inspectorate website) as of January 2024. It is noted that the other scheme 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.

194. A total of eight schemes have been identified for inclusion on the short list of projects to be assessed cumulatively for Land Use. Schemes that have not been considered as resulting in likely cumulative significant effects for Land Use are as a result of no spatial overlap with the Onshore Development Area.

195. Summary information on the short list schemes progressing through this exercise (i.e. the short list of other schemes) for assessment on Land Use is provided below in **Table 21-16**. This presents the scenarios whereby the Projects and the other schemes/developments that have been identified on the short list of schemes screened for Land Use, as listed in **Table 21-16**, could potentially result in cumulative effects for onshore Land Use.

Table 21-16 Short List of Schemes Considered Within the Land Use Cumulative Effects Assessment

Scheme Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
Strawberry Fields - reorganisation and expansion of existing holiday park	3	There is an area of overlap between the Projects and the proposed expansion of the existing holiday park located at Strawberry Fields. The area of overlap between the two projects is along Cliff Road.	Although there is a spatial overlap between the two projects, it is along an already existing road. Therefore, it is not anticipated that there would be the potential for cumulative effects on land use.
A164 and Jocks Lodge Improvement Scheme	1	There is both a spatial and temporal overlap between the Projects and the proposed junction improvements. The spatial overlap between the two projects is focused in the area between the A164 and A1079. There would be a temporal overlap during the first year of construction of the Projects and the final year of the junction improvements. It is anticipated that the junction improvement scheme would be operational during the remaining construction period of the Projects.	The spatial overlap between the two projects could result in impacts of a direct and/or indirect nature during the construction and operational phases. The temporal overlap between the construction phases of the two projects could result in the same areas of land being impacted at the same time for two consecutive lengths of time. The significance of effect associated with the junction improvement scheme is anticipated to be greater than that of the Projects. This is due to the likely permanent loss of agricultural land as a result of road realignment which could result in the potential for cumulative effects to occur. The junction improvement works will result in the permanent removal of Rowley Bridleway No.13 where it crosses the improvement works area. However, a number of proposed farm access tracks for pedestrian, cycle and equestrian users are proposed to replace the bridleway to provide connectivity to existing footpaths on the other side of the junction. Although there will be a permanent closure of part of the bridleway, connectivity will be maintained with other PRoW in the area, as such it is not anticipated that there would be the potential for cumulative effects.
Creyke Beck Solar Farm	1	There is both a spatial and temporal overlap between the Projects and the proposed solar farm. The spatial overlap between the two projects is focused in the area between the A1079 and A164. There would be a temporal overlap during the first year of construction of the Projects and the final year of the solar farm. It is anticipated that the solar farm would be operational during the remaining construction period of the Projects.	The spatial overlap between the two projects could result in impacts of a direct and/or indirect nature during the construction and operational phases. The temporal overlap between the construction phases of the two projects could result in the same areas of land being impacted at the same time for two consecutive lengths of time. The area of overlap between the two projects is <1ha. It is considered unlikely that this would result in a

Scheme Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
			cumulative significance of effect greater than that of the Projects alone.
Proposed Beverley Household Recycling Centre[1]	3	There is an area of overlap between the Projects and the proposed household recycling centre and associated works. The area of overlap between the two projects is along Grange Way.	Although there is a spatial overlap between the two projects, it is along an already existing road. Therefore, it is not anticipated that there would be the potential for cumulative effects on land use.
Dogger Bank A and B	1	There are four areas of spatial overlap between the Projects and Dogger Bank A and B. The areas of overlap are located at landfall, Dunnington Lane (access road for the Projects), south west of Routh and south of the A1079. Both Dogger Bank A and B would be operational during the construction phase of the Projects.	The spatial overlap between the two projects could result in impacts of a direct and/or indirect nature during the construction and operational phases. However, cumulative effects are not predicted due to the differing construction phases of the projects. Operational effects are not anticipated in relation to PRoW, specifically King Charles III England Coast Path and Woodmansey Bridleway No.6, as no permanent closures would be required as a result of the projects. Operational effects in relation to long-term loss of agricultural land are not anticipated to be greater than those of the Projects alone. Therefore, no significant cumulative effects on land use are predicted.
Proposed Birkhill Wood National Grid Substation	2	The Projects will be connecting to the Birkhill Wood Substation for onward distribution of electricity, as such there is spatial overlap between the Projects and Birkhill Wood Substation. This overlap is located south west of the A1079. At the time of writing potential construction dates for the substation were not available. As a worst case scenario it has been assumed there would be a temporal overlap between the projects.	The spatial overlap between the two projects could result in impacts of a direct and/or indirect nature during the construction and operational phases. Should there be a temporal overlap between the construction phases of the two projects there is the potential for the same areas of land being impacted at the same time for two consecutive lengths of time. The area of agricultural land that may be impacted as a result of the construction and operation of both projects is approximately 5ha. It is anticipated that the substation project would include mitigation measures similar to those discussed in this chapter. However, as a greater area of agricultural land would be lost, this could result in the potential for cumulative effects to occur.

[1] The Applicants are aware that the Proposed Beverley Household Recycling Centre application has been refused however kept in CEA longlist due to professional judgement and stakeholder request.

Scheme Name	Tier	Discussion	Likelihood and Significance of Cumulative Effects
Hornsea 4 Offshore Wind Farm	1	There is a spatial overlap between the Projects and Hornsea 4 Offshore Wind Farm. The overlap between the projects is located within the area between the A1079 and A164. Construction of Hornsea 4 Offshore Wind Farm is anticipated to start in 2024, overlapping with the construction of the Projects between 2026 and 2028. It is anticipated that Hornsea 4 Offshore Wind Farm would be operational during the remaining construction period of the Projects.	The spatial overlap between the two projects could result in impacts of a direct and/or indirect nature during the construction and operational phases. The temporal overlap between the construction phases of the two projects could result in the same areas of land being impacted at the same time for two consecutive lengths of time. The area of overlap between the two projects is <1ha. It is considered unlikely that this would result in a cumulative significance of effect greater than that of the Project alone. In relation to PRoW, the construction of Hornsea 4 will result in the permanent diversion of Rowley Bridleway No.13. Should the permanent diversion of Rowley Bridleway No.13 be completed prior to the commencement of construction for the Projects, the mitigation measures identified within the **Outline Public Rights of Way Management Plan (Volume 8, application ref: 8.9)** will be applied. Therefore, it is not anticipated that there would be the potential for cumulative effects.
JBM Peartree Hill Solar Farm	2	There is a spatial overlap between the Projects and JBM Peartree Hill Solar. The overlap between the projects is located to the west of Whitecross Road. At the time of writing the solar farm development is at the pre-application stage and so construction dates are not yet known. As a worst case scenario, it has been assumed that there would be a temporal overlap between the projects.	The spatial overlap between the two projects could result in impacts of a direct and/or indirect nature during the construction and operational phases. Should there be a temporal overlap between the construction phases of the two projects there is the potential for the same areas of land being impacted at the same time for two consecutive lengths of time. The area of agricultural land that may be impacted as a result of the construction and operation of both projects is <10ha. It is anticipated that the solar farm project would include mitigation measures similar to those discussed in this chapter. However, as a greater area of agricultural land would be lost, this could result in the potential for cumulative effects to occur.

196. For the large part, the CEA for Land Use has not identified any schemes where significant cumulative effects could arise. However, there is the potential for significant cumulative effects to occur in relation to the loss of agricultural land which cannot be mitigated against.

21.8.1 Cumulative Impact 1: Loss of Agricultural Land

197. There is the potential for the cumulative loss of agricultural land associated with the following schemes and the Projects as there is spatial overlap with the Onshore Development Area:

- The Proposed Birkhill Wood National Grid Substation; and
- JBM Peartree Hill Solar Farm.

21.8.1.1 Significance of effect

198. Due to the spatial and potential overlap between the above schemes and the Projects, there is the potential for a greater area of agricultural land to be impacted through either temporary losses during construction or permanent losses associated with the operational phases.

199. Although it is anticipated that the proposed Birkhill Wood National Grid Substation and solar farm will adopt mitigation measures similar to those of the Projects, the area of land cumulatively affected would be in excess of 20ha. As such, there is the potential for **significant** cumulative effects to occur.

200. As the area of land that will potentially be impacted is >20ha, it may not be possible to reduce the significance of effect through the application of mitigation measures. Therefore, the significance of effect would remain **significant**. As with the Projects, there is the potential for landowners/occupiers to be impacted to varying extents by the loss of agricultural land.

21.9 Transboundary Effects

201. There are no transboundary effects with regard to Land Use as the Onshore Development Area would not be sited in proximity to any international boundaries. Transboundary effects are therefore scoped out of this assessment and not considered further.

21.10 Interactions

202. The effects identified and assessed in this chapter have the potential to interact with each other. The areas of potential interaction between effects are presented in **Table 21-17**. This provides a screening tool for which effects have the potential to interact.

203. **Table 21-18** provides an assessment for each receptor (or receptor group) as related to these impacts.

204. Within **Table 21-18** the effects are assessed relative to each development phase to see if multiple effects could increase the significance of the effect upon a receptor. Following this a lifetime assessment is undertaken which considers the potential for effect to affect receptors across all development phases.

Table 21-17 Interactions Between Impacts - Screening

Potential Interactions between Impacts						
Construction						
	Impact 1 Agricultural Drainage	Impact 2 Temporary Loss of Agricultural Land	Impact 3 Soil Degradation and Loss of Soil to Erosion	Impact 4 Impact to Environmental Stewardship Schemes (ESS)	Impact 5 Disruption to Existing Utilities	Impact 6 Disruption to users of Recreational Routes
Impact 1 Agricultural Drainage		Yes	Yes	Yes	No	No
Impact 2 Temporary Loss of Agricultural Land	Yes		Yes	Yes	Yes	No
Impact 3 Soil Degradation and Loss of Soil to Erosion	Yes	Yes		Yes	Yes	No
Impact 4 Impact to Environmental Stewardship Schemes (ESS)	Yes	Yes	Yes		Yes	No
Impact 5 Disruption to Existing Utilities	No	Yes	Yes	Yes		No
Impact 6 Disruption to users of Recreational Routes	No	No	No	No	No	
Operation						
	Impact 1 Disruption to Field Drainage	Impact 2 Permanent Loss of Land for Agriculture	Impact 3 Environmental Stewardship Schemes	Impact 4 Disruption to Existing Utilities	Impact 5 Disruption to Users of Recreational Routes	Impact 6 Soil Heating
Impact 1 Disruption to Field Drainage		Yes	Yes	No	No	No
Impact 2 Permanent Loss of Land for Agriculture	Yes		Yes	Yes	No	No
Impact 3 Environmental Stewardship Schemes	Yes	Yes		No	No	No

Potential Interactions between Impacts						
Impact 4 Disruption to Existing Utilities	No	Yes	No		No	No
Impact 5 Disruption to Users of Recreational Routes	No	No	No	No		No
Impact 6 Soil Heating	No	No	No	No	No	

Table 21-18 Interaction Between Impacts - Phase and Lifetime Assessment

Receptor	Highest Significance Level				
	Construction	Operation	Decommissioning	Phase Assessment	Lifetime Assessment
Field drainage network	Minor adverse	No change	Minor adverse	No greater than individually assessed impact. The impacts to the field drainage networks within the Onshore Development Area are considered to have no or minor significance of effect on receptors. Given that the significance levels are no to minor, and that each impact would be managed with standard and best practice methodologies, it is considered that there would either be no interactions or that these would not result in greater impact than assessed individually.	No greater than individually assessed impact. Most impacts within the Onshore Development Area would occur during the construction phase of the Projects (all scenarios). Field drainage would be reinstated following construction, where possible, with drainage requirements at the onshore substations complying with a flood risk assessment. The impacts to field drainage during the life of the onshore substations are negligible. It is therefore anticipated that there are no lifetime impacts for receptors.
Agricultural land	Moderate adverse	Major adverse	Moderate adverse	Greater than individually assessed impact. The impacts to agricultural land within the Onshore Development Area are considered to have moderate or major adverse significance of effect on receptors. Given the significance levels are moderate to major, and that it will not be possible to mitigate the impacts to levels of minor significance, there is the potential for greater impacts to occur than when assessed individually.	Greater than individually assessed impact. Most impacts within the Onshore Development Area would occur during the operational phase of the Projects (all scenarios). The impacts to agricultural land during the life of the onshore substations are considered major adverse. It is therefore anticipated that there is the potential for lifetime impacts to occur.
Agricultural soils	Minor adverse	No change	Minor adverse	No greater than individually assessed impact Impacts to soils (degradation and erosion) are considered to have no to minor adverse magnitude of impact on the individual receptors, with significance of	No greater than individually assessed impact Most impacts within the Onshore Development Area would occur during the construction phase of the Projects (all scenarios). Soil would be reinstated

Receptor	Highest Significance Level				
	Construction	Operation	Decommissioning	Phase Assessment	Lifetime Assessment
				effect dependent upon the sensitivity of the receptor. Given that the significance levels are no to minor and that each impact would be managed with standard and best practice methodologies it is considered that there would either be no interactions or that these would not result in greater impact than assessed individually.	following construction, where possible, restoring the area to its original condition. The impacts to soil during the life of the onshore substations are negligible. It is therefore anticipated that there are no lifetime impacts for receptors.
ESS and CSS	No change to major adverse	No change	No change to major adverse	The significance of effect on agri-environment schemes would only be known once the final landowner agreements are in place, confirming the extent and duration of impacts to specific land parcels. Therefore, it is not possible to establish if there would be interactions between each of the phases or lifetime of the Projects.	
Utilities	No change	No change	No change	Not applicable.	Not applicable.
Users of recreational routes	Minor adverse	No change	Minor adverse	No greater than individually assessed impact. The impacts on recreational routes are considered to have no to minor significance of effects on the individual receptors. Given that each impact would be managed with standard best practice and best practice methodologies, it is considered that there would either be no interactions or that these would not result in a greater impact than assessed individually.	No greater than individually assessed impact. There would be limited impact to recreational routes during the construction phase of the Projects (all scenarios). It is unlikely that there would be widespread closures of routes during the operational phases of the Projects (all scenarios). It is therefore anticipated that there are no lifetime impacts for receptors.

21.11 Inter-relationships

205. For Land Use potential inter-relationships between other topics assessed within the ES. A summary of the potential inter-relationships between flood risk and hydrology, terrestrial ecology and ornithology, geology and land quality and tourism is provided in **Table 21-19**.

Table 21-19 Land Use Inter-relationships

Topic and Description	Related Chapter	Where Addressed in this Chapter	Rationale
Construction			
Impact 1: Agricultural Drainage	**Volume 7, Chapter 20 Flood Risk and Hydrology (application ref: 7.20)**	Section 21.6.1.1	Potential impacts on drainage could lead to changes in flood risk or water resources e.g. private water supplies.
Impact 2: Temporary Loss of Land for Agriculture	**Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**	Paragraph 21.6.1.2	Changes in land uses could impact on ecological receptors, for example the loss of agricultural land.
Impact 3: Soil Degradation and Loss of Soil to Erosion	**Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**	Section 21.6.1.3	Changes in soil quality and quantity could impact on ecological receptors.
	Volume 7, Chapter 19 Geology and Land Quality (application ref: 7.19)		Changes in soil quality could impact on ground conditions and potentially contaminated land.

Topic and Description	Related Chapter	Where Addressed in this Chapter	Rationale
Impact 4: Impacts to Agri-environment Schemes	**Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**	Section 21.6.1.4	Changes to land uses could impact on ecological receptors for example the removal of trees or hedgerows or the loss of agricultural land.
Impact 6 Disruption to users of Recreational Routes	**Volume 7, Chapter 29 Tourism and Recreation (application ref: 7.29)**	Section 21.6.1.6	The Projects may affect local businesses in the tourism and recreation industry.
Operation			
Impact 1 Disruption to Field Drainage	**Volume 7, Chapter 20 Flood Risk and Hydrology (application ref: 7.20)**	Section 21.6.2.1	Potential impacts on drainage could lead to changes in flood risk or water resources e.g. private water supplies.
Impact 2 Permanent Loss of Land for Agriculture	**Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**	Section 21.6.2.2	Changes in land uses could impact on ecological receptors, for example the removal of trees or hedgerows or the loss of agricultural land.

Topic and Description	Related Chapter	Where Addressed in this Chapter	Rationale
Impact 3 Environmental stewardship schemes	**Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**	Section 21.6.2.3	Changes in land uses could impact on ecological receptors, for example the removal of trees or hedgerows or the loss of agricultural land.
Impact 5 Disruption to Users of Recreational Routes	**Volume 7, Chapter 28 Socio-economics (application ref: 7.28)**	Section 21.6.2.5	The Project may affect local businesses in the tourism and recreation industry.
	Volume 7, Chapter 29 Tourism and Recreation (application ref: 7.29)		

21.12 Summary

206. This chapter has provided a characterisation of the existing environment for Land Use based on existing data, which has established that there would be some **minor** to **major adverse** residual effects on land use receptors.

207. A summary of the potential impacts identified in relation to Land Use is presented in **Table 21-20**.

208. These impacts are driven mainly by change of land use, soil handling and the disruption to PRoW, paths and cycle routes during construction. The construction impacts to land use and soil have a greater likelihood to be more significant on higher sensitivity land (such as ALC Grade 2 land) and land subject to agri-environmental schemes. The construction phase of the Projects has the potential to disrupt paths and national cycle routes which are determined to have high sensitivity to change. However, many of the impacts are temporary and reversible once construction is complete.

209. During operation, the impacts to Land Use are limited. This is because the Onshore Export Cables would be buried. However, residual impacts to changes in land use and agri-environmental schemes during operation are potentially **major** adverse.

210. The detail and scope of the decommissioning works would be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. As such, impacts during the decommissioning phase are assumed to be the same as those identified during the construction phase.

Table 21-20 Summary of Potential Likely Significant Effects on Land Use

Potential Impact	Receptor	Sensitivity	Magnitude of Impact	Significance of Effect	Additional Mitigation Measures Proposed	Residual Effect
Construction						
Impact 1 Agricultural Drainage	Field drainage network	Medium	Negligible	Minor adverse	No additional mitigation measures required.	**Minor** adverse
Impact 2 Temporary Loss of Agricultural Land	Agricultural land	High	Low	Moderate adverse	Maintaining accesses to severed land, timing of works discussed prior to commencement of construction works, private agreements or compensation with landowners/occupiers.	**Minor** adverse
Impact 3 Soil Degradation and Loss of Soil to Erosion	Agricultural soils	Medium	Negligible	Minor adverse	No additional mitigation measures required.	**Minor** adverse
Impact 4 Impact to Environmental Stewardship Schemes (ESS)	ESS	The significance of effect on landowners / occupiers with agri-environment agreements in place would depend on the extent and duration of construction works within land parcels managed, and the terms and conditions attached to the agreement in place.				
Impact 5 Disruption to Existing Utilities	Utilities	No change				
Impact 6 Disruption to users of Recreational Routes	Users of recreational routes	High	Negligible	Minor adverse	No additional mitigation measures required.	**Minor** adverse
Operation						
Impact 1 Disruption to Field Drainage	Field drainage network	Medium	No change			
Impact 2 Permanent Loss of Land for Agriculture	Agricultural land	Medium to high	High	Major adverse	Land available for agricultural use will be unavailable for the medium to long-term, as such the magnitude of impact would remain medium.	**Major** adverse
Impact 3 Environmental stewardship schemes	ESS	No change				
Impact 4 Disruption to Existing Utilities	Utilities	No change				
Impact 5 Disruption to Users of Recreational Routes	Users of recreational routes	No change				

Potential Impact	Receptor	Sensitivity	Magnitude of Impact	Significance of Effect	Additional Mitigation Measures Proposed	Residual Effect
Impact 6 Soil Heating	Agricultural soils	No change				
Decommissioning						
The detail and scope of the decommissioning works would be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A Decommissioning Plan would be provided prior to any decommissioning commencing onshore.						

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