# East Anglia TWO Offshore Windfarm

# Chapter 21

## Land Use

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# Table of Contents

***Chapter 21 Land Use*** figures are presented in **Volume 2: Figures** and listed in the table below.

| Figure Number | Title |
|---|---|
| **Figure 21.1** | Study Area |
| **Figure 21.2** | Land Use Cover Mapping |
| **Figure 21.3** | Agricultural Land Classifications |
| **Figure 21.4** | Environmental Stewardship Scheme Agreements |
| **Figure 21.5** | Utilities |
| **Figure 21.6** | Common Access Land |
| **Figure 21.7** | East Anglia ONE North Proposed Onshore Development Area |

***Chapter 21 Land Use*** appendices are presented in **Volume 3: Appendices** and listed in the table below.

| Appendix Number | Title |
|---|---|
| **Appendix 21.1** | Cumulative Impact Assessment with the Proposed East Anglia ONE North Project |

# Glossary of Acronyms

| | |
|---|---|
| ALC | Agricultural Land Classification |
| ALO | Agricultural Liaison Officer |
| AONB | Area of Outstanding Natural Beauty |
| APHA | Animal and Plant Health Agency |
| BMV | Best and most versatile |
| CCS | Construction Consolidation Site |
| CoCP | Code of Construction Practice |
| CIA | Cumulative Impact Assessment |
| CRoW | Countryside and Rights of Way Act 2000 |
| DCO | Development Consent Order |
| DECC | Department of Energy and Climate Change |
| Defra | Department for Environment, Food and Rural Affairs |
| DM | Development Management Policies |
| DMRB | Design Manual for Roads and Bridges |
| EMF | Electro-magnetic fields |
| ELS | Entry Level Stewardship |
| EA | Environment Agency |
| EIA | Environmental Impact Assessment |
| ES | Environmental Statement |
| ESS | Environmental Stewardship Scheme |
| ha | hectares |
| HDD | Horizontal Directional Drilling |
| HLS | Higher Level Stewardship |
| ICZM | Integrated Coastal Zone Management |
| LPA | Local Planning Authority |
| m | Metre |
| MAFF | Ministry of Agriculture, Fisheries and Food |
| MW | Megawatt |
| NPPF | National Planning Policy Framework |
| NPS | National Policy Statements |
| NSRI | National Soil Resources Institute |
| NSIP | Nationally Significant Infrastructure Project |
| OCoCP | Outline Code of Construction Practice |
| OELS | Organic Entry Level Stewardship |
| OHL | Overhead Line |
| PEI | Preliminary Environmental Information |
| PEIR | Preliminary Environmental Information Report |
| PIDs | Public Information Days |
| PRoW | Public Right of Way |
| SCC | Suffolk County Council |
| SCDC | Suffolk Coastal District Council |
| SLA | Special Landscape Areas |
| SoS | Secretary of State |
| SMP | Soils Management Plan |

| | |
|---|---|
| SP | Strategic Policies |
| UELS | Upland Entry Level Stewardship |

# Glossary of Terminology

| | |
|---|---|
| Applicant | East Anglia TWO Limited. |
| Construction consolidation sites | Compounds which will contain laydown, storage and work areas for onshore construction works. The HDD construction compound will also be referred to as a construction consolidation site. |
| Development area | The area comprising the Proposed onshore development area and the Offshore Development Area |
| East Anglia TWO project | The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one offshore construction operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure. |
| European site | Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas. |
| Evidence Plan Process | A voluntary consultation process with specialist stakeholders to agree the approach to the EIA and the information required to support HRA. |
| Horizontal directional drilling (HDD) | A method of cable installation where the cable is drilled beneath a feature without the need for trenching. |
| Jointing bay | Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts. |
| Landfall | The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables. |
| Link boxes | Underground chambers or above ground cabinets next to the cable trench housing electrical earthing links. |
| Mitigation areas | Areas captured within the Development Area specifically for mitigating expected or anticipated impacts. |
| National Grid infrastructure | A National Grid substation, connection to the existing electricity pylons and National Grid overhead line realignment works which will be consented as part of the proposed East Anglia TWO project Development Consent Order but will be National Grid owned assets. |
| National Grid overhead line realignment works | Works required to upgrade the existing electricity pylons and overhead lines to transport electricity from the National Grid substation to the national electricity grid |
| National Grid overhead | The proposed area for National Grid overhead line realignment works. |

| | |
|---|---|
| line realignment works area | |
| National Grid substation | The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia TWO project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia TWO project Development Consent Order. |
| National Grid substation location | The proposed location of the National Grid substation. |
| Natura 2000 site | A site forming part of the network of sites made up of Special Areas of Conservation and Special Protection Areas designated respectively under the Habitats Directive and Birds Directive. |
| Onshore cable corridor | The corridor within which the onshore cable route will be located. |
| Onshore cable route | This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas. |
| Onshore cables | The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables and two fibre optic cables. |
| Proposed onshore development area | The area in which the landfall, onshore cable corridor, onshore substation, mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located. |
| Onshore infrastructure | The combined name for all of the onshore infrastructure associated with the proposed East Anglia TWO project from landfall to the connection to the national electricity grid. |
| Onshore substation | The East Anglia TWO substation and all of the electrical equipment, both within and connecting to the National Grid infrastructure. |
| Onshore substation location | The proposed location of the onshore substation for the proposed East Anglia TWO project. |
| Transition bay | Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables. |

# 21 Land Use

## 21.1 Introduction

1. This chapter of the Preliminary Environmental Information Report (PEIR) considers the potential impacts of the proposed East Anglia TWO project on land use and agriculture. This chapter provides an overview of the existing land use located where the onshore infrastructure is proposed, followed by an assessment of the potential impacts of the construction, operation and decommissioning of the proposed East Anglia TWO project.

2. The focus of this chapter is on land use and agriculture (potential impacts on human beings, including landowners, occupiers, local communities and other land users as well as bio-physical elements of soils, the surrounding environment and the productivity of the land). Potential impacts on geology, ground conditions and contamination are considered in ***Chapter 18 Ground Conditions and Contamination.***

3. It should be noted that the East Anglia ONE North offshore windfarm project (the proposed East Anglia ONE North project) is also in the pre-application stage. The proposed East Anglia ONE North project will have a separate Development Consent Order (DCO) process but is working to the same programme of submission as the proposed East Anglia TWO project. This assessment considers the cumulative impact of the proposed East Anglia TWO project with the proposed East Anglia ONE North project and subsequently with other proposed developments. Further information regarding the assessment of project alone impacts for the proposed East Anglia TWO project is given in ***section 21.4.3*** and information regarding cumulative impacts is given in ***section 21.4.4.***

4. Figures which accompany the text in this chapter are provided in ***Volume 2 Figures***. This chapter is supported by ***Appendix 21.1.***

5. Due to the close association between land use, agriculture, ground conditions, groundwater, surface water and ecological receptors, this chapter should be read in conjunction with the related PEIR chapters (and their appendices and supporting documents). The relevant chapters are:

   - ***Chapter 18 Ground Conditions and Contamination;***
   - ***Chapter 22 Onshore Ecology;***
   - ***Chapter 24 Archaeology and Cultural Heritage;***
   - ***Chapter 26 Traffic and Transport;***

- ***Chapter 27 Human Health;***
- ***Chapter 29 Landscape and Visual Impact;*** and
- ***Chapter 30 Socio-Economics, Recreation and Tourism.***

6. This chapter has been produced by Royal HaskoningDHV in accordance with the NPPF (2018) and the relevant National Policy Statement (NPS) guidance, specifically pertaining to NPS EN-1, NPS EN-3 and NPS EN-5. More information on this guidance is presented in ***section 21.4.1.***

## 21.2 Consultation

7. Consultation is a key driver of the Environmental Impact Assessment (EIA) process, and continues throughout the lifecycle of a project, from its initial stages through to consent and post-consent.

8. To date, consultation with regards to land use and agriculture has been undertaken via the East Anglia TWO Scoping Report (ScottishPower Renewables (SPR) 2017). Feedback received through this process has been considered in preparing the PEIR where appropriate and this chapter will be updated following the next stage of consultation for the final assessment submitted with the Development Consent Order (DCO) application. ***Table 21.1*** provides a summary of those consultation responses that have been received as a response to the Scoping Report (SPR 2017) and are relevant to land use and agriculture. Responses from stakeholders have been captured in the table below.

**Table 21.1 Consultation Responses Relevant to Land Use and Agriculture**

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| Aldringham-cum-Thorpe Parish Council | 07/12/2017<br>Scoping Response | Any land taken for the laying of the onshore cables should also be restricted to agricultural land. This land should be purchased by SPR and following the works, gifted to the community for rewilding, giving long term benefit, and an overall improvement to the [Area of Outstanding Natural Beauty] AONB, going some way to mitigate the presence of the substations within our beautiful and precious landscape. | Noted. The Applicant is working closely with local communities. |
| Suffolk County Council and Suffolk Coastal | 08/12/2017<br>Scoping Response | It is disingenuous to suggest that land users 'may potentially experience disruption' as is stated in the Scoping Report. Based on the current EA ONE project, it is clear that there will be an impact on users of the [Public | PRoW are covered as a baseline in ***section 21.5.8.*** Reference should be made to ***Chapter 30 Socio-*** |

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| District Council | | Rights of Way] PRoW and access network and this impact needs to be considered from the first stage to the last stage in the installation process. This includes the physical disruption to the network of activities such as the preparation of the working width - topsoil stripping, as well as the potential for obstacles such as newt fencing, gates, fencing of the corridor and unnecessary or unsuitable alternative routes. | ***Economics, Recreation and Tourism*** where potential impacts to PRoW, access network and users of PRoW are considered further. |
| Suffolk County Council and Suffolk Coastal District Council | 08/12/2017<br>Scoping Response | It is unacceptable to install unnecessary obstacles such as fences and gates across the network. These have now been kept to a bare minimum on EA One (2 only) and this message needs to be clear for East Anglia Two. | Noted, access obstacles will be kept to a minimum and fences/gates will only be installed where required for security and safety purposes. Refer to ***Chapter 6 Project Description*** for more information |
| Suffolk County Council and Suffolk Coastal District Council | 08/12/2017<br>Scoping Response | It is unacceptable for any PRoW to be permanently closed as a result of this project. This area has a well-used and coherent access network visited by local residents and visitors alike and this must not be put at risk. In addition, the impact on the amenity value of this network must be assessed with respect to the positioning and visual impact of the substations. | As a result of the location of the onshore substation, one PRoW will potentially be permanently diverted however there will be no permanent closures to any PRoW within the proposed onshore development area. Reference should be made to ***Chapter 30 Socio-Economics, Recreation and Tourism*** where potential impacts to PRoW are considered in greater detail. |
| Natural England | 08/12/2017<br>Scoping Response | Impacts from the development should be considered in light of the Government's policy for the protection of the best and most versatile (BMV) agricultural land as set out in paragraph 112 of the National Policy Planning Framework (NPPF). We also recommend that | The site selection process has considered impacts on ESS (***section 21.5.5***) and agricultural land of high grade (***section*** |

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| | | soils should be considered under a more general heading of sustainable use of land and the ecosystem services they provide as a natural resource in line with paragraph 109 of the NPPF. | ***21.5.3).*** Also refer to ***section 21.5.4*** for specific referral to soil preservation. |
| Anglian Water | 08/12/2017<br>Scoping Response | Reference is made to the crossing of existing utilities including assets owned by Anglian Water. There are existing Anglian Water sewers located within the boundary of the site which potentially be affected. We would expect any requests for alteration or removal of foul sewers to be conducted in accordance with the Water Industry Act 1991.The extent to which existing sewers would be affected will need to be defined with the assistance of Anglian Water. | All utilities owners will be consulted with and appropriate crossing agreements will be reached. Utilities are considered further in ***sections 21.5*** and ***21.5.9***. |
| Anglian Water | 08/12/2017<br>Scoping Response | It is suggested that the PEI should include reference to the sewage treatment as well as the foul sewerage network and water mains. | See ***section 21.5.9*** for utilities consideration |
| EPS Utilities | 23/11.2017<br>Scoping Response | As your plans for the proposed work develop you are required to keep ES Pipelines Ltd regularly updated about the extent and nature of your proposed works in order for us to fully establish whether any additional precautionary or diversionary works are necessary to protect our gas and electricity networks. Arrangements can be set in place so that one of our representatives can meet on site (date to be agreed) and we will be happy to discuss the impact of your proposals on the gas and electricity networks once we have received the details. | All utilities owners will be consulted with and appropriate crossing agreements will be reached. Utilities are considered further in ***sections 21.5*** and ***21.5.9***. |
| Forestry Commission | 16/11/2017<br>Scoping Response | We have examined the scoping document and note the reference to the national grid's Horlock Rules which indicates a serious attempt to avoid the worse impacts on the environment however we believe these may be a little out of date given that the assessment of Ancient woodland within the scoping document refers to it only within the paragraph on 'areas of local amenity value'. We do not believe this to be an adequate description, Ancient Woodland is of national significance and is an irreplaceable habitat as | Noted. Ancient woodland should be conserved and enhanced under the NPPF and therefore considered of high importance by the proposed East Anglia TWO project. Refer to ***Chapter 22 Onshore Ecology*** for a detailed baseline description of |

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| | | described in paragraph 118 NPPF therefore we suggest that it needs to be given a much stronger consideration and value than is currently indicated by the wording. It is not clear how impacts on Ancient woodlands are to be assessed and mitigated, whereas heritage sites have specific passages associated with this. | all habitats and potential impacts upon them. |
| The Planning Inspectorate | 20/12/2017<br>Scoping Response | The PEI should set out the time of year and the conditions of the site walkover study including any limitations. | For details of the site walkover, refer to ***Chapter 22 Onshore Ecology Appendix 22.1*** |
| The Planning Inspectorate | 20/12/2017<br>Scoping Response | The Scoping Report identifies that a soil and drainage management strategy will be developed if required, depending on the results of pre-construction surveys for the cable corridor restoration. The PEI should address how soils and drainage will be managed and assess any impacts. Any mitigation required should be explained in the PEI and appropriately secured. | An Outline Code of Construction Practice (OCoCP) will be completed as part of the DCO submission which will include soils and drainage measures to be used during construction where appropriate. See ***sections 21.6.1.3*** and ***21.6.1.4*** for further information<br>Permanent drainage requirements for the substation are outlined in ***Chapter 6 Project Description*** |

9. Ongoing public consultation has been conducted through a series of Public Information Days (PIDs) and Public Meetings. PIDs have been held throughout Suffolk in November 2017, March 2018, and June / July 2018 with further events planned in 2019. A series of stakeholder engagement events were also undertaken in October 2018 as part of consultation phase 3.5. These events were held to inform the public of potential changes to the onshore substation location. This consultation aims to ensure that community concerns are well understood and that site specific issues can be taken into account, where practicable. Consultation phases are explained further in ***Chapter 5 EIA Methodology***. Full details of the proposed East Anglia TWO project

consultation process will be presented in the Consultation Report, which will be submitted as part of the DCO application. ***Table 21.2*** shows public consultation feedback pertaining to land use and agriculture. Consultation phases are explained further in ***Chapter 4 Site Selection and Assessment of Alternatives***. Full details of the proposed East Anglia TWO project consultation process will be presented in the Consultation Report, which will be submitted as part of the DCO application.

10. ***Table 21.2*** summarises public consultation pertaining to land use and agriculture.

**Table 21.2 Public Consultation Relevant to Land Use and Agriculture**

| Topic | Response / where addressed in the PEI |
|---|---|
| **Phase 1** | |
| • Loss of agricultural land should be taken into account during connection point decision making | Loss of agricultural land is assessed in ***section 21.6.1.1*** and ***21.6.2.1*** |
| **Phase 2** | |
| • Loss of high grade agricultural land | Loss of agricultural land is assessed in ***section 21.6.1.1*** and ***21.6.2.1*** |
| **Phase 3** | |
| • Loss of agricultural land at the substation and onshore cable corridor<br>• Restrictions to food production<br>• Zone 7 is high grade agricultural land<br>• Avoidance of greenfield land | Loss of agricultural land is assessed in ***section 21.6.1.1*** and ***21.6.2.1*** |
| **Phase 3.5** | |
| • Loss of virgin farmland at Friston<br>• Farms being taken over<br>• Avoid greenfield land, place on brownfield.<br>• Grade 2 productive arable farming land<br>• Breaking up land will lead to reduced efficiency in farming operations and will increase cultivation costs<br>• Loss of food production<br>• Loss of agricultural land due to haul roads | Impacts associated with loss of agricultural land are assessed within ***section 21.6.1.1***. This section addresses the loss of land with Agricultural Land Classification (ALC) Grade 2. |

## 21.3 Scope

### 21.3.1 Study Area

11. The onshore infrastructure for the proposed East Anglia TWO project will include the following elements:

- Landfall including cable ducts and transition bays;
- Onshore cable corridor which includes the cable trenches, construction consolidation sites (CCS), haul road and spoil storage areas;
- East Anglia TWO substation (onshore substation); and
- National Grid infrastructure.

12. A full description of the above infrastructure is provided in ***Chapter 6 Project Description***.

13. For the PEIR, a proposed onshore development area has been identified (shown on ***Figure 21.1***). This area is subject to further refinement post-PEIR, as a result of ongoing site selection. In the case of this PEIR, it is assumed that using the proposed onshore development area is already representing the onshore infrastructure plus a buffer.

14. For the purpose of the assessment, and to aid baseline descriptions, study areas have been determined by a number of factors such as distribution of receptors, footprint of potential impact and local authority boundaries. These have been agreed with regulators through the submission of the Scoping Report (SPR 2017).

15. The following study areas have been defined to assess the direct and indirect impacts, on land use and agriculture, associated with the proposed East Anglia TWO project:

- The proposed onshore development area, as outlined in ***Chapter 6 Project Description***, is the largest area over which direct impacts could be experienced. Through further refinement post-PEIR, the area of land that is being directly, physically impacted upon may be reduced;
- Local level: this study area is used to assess indirect impacts and impacts on individual landowners/occupiers;
- Local planning authority boundaries provide the study area within which local planning policies are considered. This incorporates the entire district borough which falls under Suffolk Coastal District Council. This is the spatial level at which local planning policy is made and at which level development objectives are applicable; and

- The county boundary is used to assess wider impacts on the agricultural industry. The proposed onshore development area is wholly within the county of Suffolk.

### 21.3.2 Worst Case Scenario

16. This section identifies the realistic worst case parameters associated with the proposed East Anglia TWO project alone. This includes all onshore infrastructure for the proposed East Anglia TWO project and the National Grid infrastructure that the proposed East Anglia TWO project will require for ultimate connection to national electricity grid.

17. ***Chapter 6 Project Description*** details the project parameters using the Rochdale Envelope approach for the PEIR.

18. ***Table 21.3*** identifies those realistic worst case parameters of the onshore infrastructure that are relevant to potential impacts on land use and agriculture during construction, operation and decommissioning phases of the proposed East Anglia TWO project. Please refer to ***Chapter 6 Project Description*** for more detail regarding specific actvities, and their durations, which fall within the construction phase.

**Table 21.3 Realistic Worst Case Scenario**

| Impact | Parameter | Notes |
|---|---|---|
| **Construction** | | |
| Impacts related to the landfall | HDD temporary works area: 7,000m$^2$ (70m x 100m)<br>Transition bay excavation footprint (for 2 transition bays): 1,554m$^2$ (37m x 42m)<br>Landfall CCS: 18,400m$^2$ (160m x 115m)<br>Landfall transition bays approximate quantity of spoil material (for 2 transition bays): 454m$^3$ | Landfall to be achieved via HDD. No beach access required. |
| Impacts related to the onshore cable corridor | Onshore cable route: 287,360m$^2$ (8,980m x 32m)<br>Jointing bay construction excavation footprint: 570m$^2$ (30.6m x 18.6m). Total for 36 jointing bays: 20,520m$^2$ (570m$^2$ x 36)<br>HDD (retained as an option to cross SPA / SSSI):<br>• Entrance pit CCS (x1): 7,000m$^2$ (100m x | Onshore cable corridor construction footprint may be located anywhere within the proposed onshore development area.<br>The location strategy for access routes, CCS and jointing bays will be to site them near to field boundaries or roads as far as |

| Impact | Parameter | Notes |
|---|---|---|
| | 70m)<br>• Exit pit CCS (x1): 3,000m$^2$ (100m x 30m)<br>Onshore cable route CCS: 18,400m$^2$ (160m x 115m). Total for 5 CCS: 92,000m$^2$ (18,400m$^2$ x 5)<br>Temporary roads:<br>• Onshore cable route haul road between landfall and Snape Road (4.5m wide with additional 4m for passing places at approximately 87m intervals): 41,376m$^2$<br>• Onshore cable route and substation access haul road (9m width): 18,675m$^2$<br>• Temporary access road: 23,495m$^2$<br>Onshore cable trench approximate quantity of spoil material: 13,321m$^3$ | practical.<br>Two link boxes sit underground beside each jointing bay at a depth of approximately 1.2m. The construction footprint of these is included in the jointing bay construction excavation footprint. |
| Impacts related to the onshore substation | Onshore substation CCS: 17,100m$^2$ (190m x 90m)<br>Permanent footprint (used as CCS during construction): 36,100m$^2$ (190m x 190m)<br>Substation operational access road: 12,800m$^2$ (1,600m x 8m) | Construction access is included above as the onshore cable route and substation access haul road. |
| Impacts related to the National Grid Infrastructure | National Grid substation CCS: 78,750m$^2$ (250m x 315m)<br>Permanent footprint (used as CCS during construction): 45,500m$^2$ (325m x 140m) | Design for the required overhead line (OHL) realignment work (including cable sealing end CCSs and pylon realignment CCS) is currently on going. As more detail is made available, this will be fully assessed and included in the Environmental Statement (ES) and DCO application. However, indicative locations for cable sealing end CCSs and pylon realignment CCS are shown in ***Figure 6.6*** of ***Chapter 6 Project Description***.<br>Construction access is included above as the onshore cable route and substation access haul road.<br>Operational access is included above as the substation |

| Impact | Parameter | Notes |
|---|---|---|
| | | operational access road, |
| **Operation** | | |
| Impacts related to the landfall | 2 transition bays will be installed underground, each with an operational volume of 227m$^3$ | Transition bays will be buried approximately 1.2m underground – there will no above ground infrastructure. |
| Impacts related to the onshore cable corridor | 36 jointing bays will be installed underground, each with an operational volume of 77m$^3$<br>72 link boxes will be installed underground (2 per jointing bay), each with an operational volume of 3m$^3$ | Jointing bays will be buried approximately 1.2m underground – there will no above ground infrastructure.<br>Link boxes will be located underground immediately adjacent to jointing bays – there will be no above ground infrastructure. |
| Impacts related to the onshore substation | Operational footprint: 36,100m$^2$ (190m x 190m)<br>Substation operational access road: 12,800m$^2$ (1,600m x 8m) | The operational footprint does not include the additional landscaping footprint (which will be agreed post-PEIR). |
| Impacts related to the National Grid Infrastructure | National Grid operational substation: 45,500m$^2$ (325m x 140m) | The operational footprint does not include the additional landscaping footprint (which will be agreed post-PEIR).<br>Design for the required overhead line (OHL) realignment work (including cable sealing end CCSs and pylon realignment CCS) is currently on going. As more detail is made available, this will be fully assessed and included in the Environmental Statement (ES) and DCO application. However, indicative locations for cable sealing end CCSs and pylon realignment CCS are shown in ***Figure 6.6*** of ***Chapter 6 Project Description***. |
| **Decommissioning** | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as | | |

| Impact | Parameter | Notes |
|---|---|---|
| it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst-case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | |

### 21.3.3 Embedded Mitigation

19. Embedded mitigation covers those activities which have been implanted within, and influenced, the design of the proposed East Anglia TWO project. The site selection process for the onshore cable route will be developed in adherence with key design principles of routeing in order to avoid areas of woodland, urban land, residential areas and sites designated for nature conservation or cultural heritage where possible.

20. Embedded mitigation pertaining to land use and agriculture ensures that where practicable, steps will be taken to minimise creating isolated land parcels, permanently cutting off farm access routes and disrupting key assets such as utilities.

21. The worst case assumptions and subsequent impact assessment have taken into account the potential proposed embedded mitigation; these are summarised in ***Table 21.4.*** Any further mitigation proposed within this chapter to minimise residual impacts on land use and agriculture is therefore considered to be additional to embedded mitigation.

**Table 21.4 Embedded Mitigation for Land Use and Agriculture**

| Parameter | Mitigation Measures Embedded into the Project Design |
|---|---|
| **General** | |
| Code of Construction Practice (CoCP) | An Outline CoCP will be included with the DCO application, and will set out proposed management measures for onshore construction works associated with the proposed East Anglia TWO project. |
| Soils Management Plan (SMP) | A SMP, including construction method statements for soil handling, would be produced by a competent soil science contractor and agreed with the relevant regulator, in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. |
| | Best practice soil handling will be implemented to prevent the spread |

| Parameter | Mitigation Measures Embedded into the Project Design |
|---|---|
| | of plant and animal diseases, including following the Environment Agency (EA) (2010) guidance: Managing Invasive Non-native Plants. Best practice soil handling also includes measures pertaining to topsoil and subsoil storage in a bid to minimise compactions and erosion.<br><br>Measures contained in relevant Defra and EA best practice guidance on the control and removal of invasive weed species would be implemented during the pre-construction and construction phases.<br><br>A pre-construction land survey would be undertaken by a qualified Agricultural Liaison Officer (ALO) to record details of crop regimes, position and condition of field boundaries, existing drainage and access arrangements, and private water supplies.<br><br>The construction footprint has been minimised as far as practicable (see ***Chapter 6 Project Description***). Land would be reinstated to its pre-construction condition as soon as reasonably possible following cable installation, dependent on weather conditions and excluding the onshore substation, National Grid substation, CCS and jointing bay locations. |
| | The preparation and implementation of a SMP throughout the construction works to include:<br><br>•The separate storage of topsoil and excavated materials, to prevent mixing of subsoil and topsoil, thus improving reinstatement.<br><br>•Minimising excavation volumes and disturbance to the surrounding areas, together with the replacement of any soils inadvertently disturbed during excavations in general accordance with their original structure and location.<br><br>The setting of vehicular speeds along the construction access routes would minimise soil trafficking. |
| Construction: Drainage | Land drainage systems would be maintained during construction and reinstated on completion. Consultation with landowners and occupiers to establish existing drainage arrangements, location of drains and any other information. In addition, following construction, field drainage systems and ditches would be fully reinstated where possible in consultation with landowners / occupiers.<br><br>The cable circuits would nominally be installed in a flat formation (each cable core installed alongside each other). This would allow the cables (and protective tiles and tape) to be laid below the level of typical field drainage pipes and other underground services to minimise impact and interaction where possible. |
| Construction: Utilities | Potentially affected utility providers would be contacted and the location of existing services would be accurately identified on the ground prior to construction.<br><br>SPR would undertake utility crossings in accordance with industry |

| Parameter | Mitigation Measures Embedded into the Project Design |
|---|---|
| | standard practice as agreed with the utility owners.<br>The continuity of water supplies during the construction works would be ensured. |
| **Landfall** | |
| Project Design | The use of HDD techniques at landfall would be employed to avoid potential impacts on sensitive receptors at the proposed landfall. |
| **Landfall and Onshore Cable Route** | |
| Project Design: Land Take | Some areas of land would need to be temporarily excluded from landowners, occupiers or the public. These areas have been minimised through the route selection process as described in ***Chapter 4 Site Selection and Assessment of Alternatives*** and will be minimised further through detailed design and ongoing landowner discussions. |
| **Onshore Cable Corridor** | |
| Project Design: Routeing | Initial cable routeing and site selection (***Chapter 4 Site Selection and Assessment of Alternatives***) avoids key sensitive land uses e.g. development land, urban land, residential land and major utilities. |
| Project Design | The potential use of trenchless techniques to avoid disturbing roads and important areas for protected species will be considered wherever feasible. |
| Land Access | Providing temporary means of access to severed fields for vehicles and machinery.<br>Appropriate planning and timing of works to reduce conflicts, in particular with agricultural regimes. |
| Construction: Utilities | Prior to construction, the team on the ground would be made aware of the precise locations of existing services. Potentially affected utility providers would be contacted and the Applicant would seek to arrange crossing agreements. |
| Construction: Agricultural Features | Reinstatement as far as practicable of fences, and re-planting sections of hedgerows, hedge banks, ditches and culverts removed or disturbed during construction (***Chapter 22 Onshore Ecology***). |
| Operation: Maintenance | Suitable maintenance (typically five years for hedgerows along the cable route and 10 years on the onshore substation and CCS locations) of any newly planted sections of hedgerow, shelterbelts and woodlands following construction (***Chapter 22 Onshore Ecology***) and any reinstated land. |
| **National Grid Substation and Onshore Substation** | |

| Parameter | Mitigation Measures Embedded into the Project Design |
|---|---|
| Project Design: Location | Initial site selection (***Chapter 4 Site Selection and Assessment of Alternatives***) avoids key sensitive land uses e.g. development land, urban land, residential land and major utilities. |

### 21.3.4 Monitoring

22. Post-consent, the final detailed design of the proposed East Anglia TWO project and the development of the relevant management plan(s) will refine the worst-case parameters assessed in the EIA. It is recognised that monitoring is an important element in the management and verification of the impacts of the proposed East Anglia TWO project. Outline management plans, across a number of environmental topics, will be submitted with the DCO application. These outline management plans will contain key principles that provide the framework for any monitoring that could be required. The requirement for and final appropriate design and scope of monitoring will be agreed with the relevant stakeholders and included within the relevant management plan(s), submitted for approval, prior to construction works commencing.

## 21.4 Assessment Methodology

### 21.4.1 Guidance

23. There are a number of pieces of legislation, policy and guidance applicable to land use and agriculture. The following sections provide detail on key pieces of international and UK legislation, policy and guidance which are relevant to this chapter.

#### 21.4.1.1 Legislation and Policy

24. The following UK legislation is considered the most relevant to land use and agriculture and is considered in this chapter:

- Marine and Coastal Access Act 2009;
- The Commons Act 2006;
- The Environmental Stewardship (England) Regulations 2005
- Countryside and Rights of Way Act (CRoW) 2000;
- Weeds Act 1959;
- Ragwort Control Act 2003;
- National Planning Policy Framework (NPPF) 2018; and
- Natural Environment White Paper 2011.

25. Further detail is provided in ***Chapter 3 Policy and Legislative Context***.

26. National Policy Statements (NPS) (the principal decision making documents for Nationally Significant Infrastructure Projects (NSIPs)), of relevance to the proposed East Anglia TWO project are:

- Overarching NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC) 2011a);
- NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b); and
- NPS for Electricity Networks Infrastructure (EN-5) (DECC 2011c).

27. The specific requirements of the NPS in relation to land use and agriculture are summarised in ***Table 21.5***. This table addresses where in this chapter specific requirements from the NPS are addressed. Where any part of the NPS has not been followed within the assessment an explanation as to why the requirement was not deemed relevant, or has been met in another manner, is provided.

**Table 21.5 National Policy Relevant to Land Use and Agriculture**

| NPS Requirement | NPS Reference | Preliminary Environmental Information (PEI) Reference |
|---|---|---|
| The ES [Environmental Statement] should identify existing and proposed land uses near the project, any effects of replacing an existing development or use of the site with the proposed project or preventing a development or use on a neighbouring site from continuing. Applicants should also assess any effects of precluding a new development or use proposed in the development plan. | EN-1 Section 5.10.5. | ***Sections 21.5*** and ***21.6.*** |
| During any pre-application discussions with the Applicant the LPA [Local Planning Authority] should identify any concerns it has about the impacts of the application on land use, having regard to the development plan and relevant applications and including, where relevant, whether it agrees with any independent assessment that the land is surplus to requirements. | EN-1 Section 5.10.7. | Local authorities have identified their concerns through to provision of Scoping Responses as shown in ***Table 21.1*** and ***section 21.2.*** |
| Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3 of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise | EN-1 Section 5.10.8. | See ***sections 21.6.1.4*** and ***21.6.*** See also ***Chapter 18 Ground Conditions and Contamination***. |

| NPS Requirement | NPS Reference | Preliminary Environmental Information (PEI) Reference |
|---|---|---|
| impacts on soil quality taking into account any mitigation measures proposed. For developments on previously developed land, Applicants should ensure that they have considered the risk posed by land contamination. | | |
| The general policies controlling development in the countryside apply with equal force in Green Belts but there is, in addition, a general presumption against inappropriate development within them. Such development should not be approved except in very special circumstances. Applicants should therefore determine whether their proposal, or any part of it, is within an established Green Belt and if it is, whether their proposal may be inappropriate development within the meaning of Green Belt policy. | EN-1 Section 5.10.10. | No areas of Green Belt have been identified within the proposed onshore development area. |
| An Applicant may be able to demonstrate that a particular type of energy infrastructure, such as an underground pipeline, which, in Green Belt policy terms, may be considered as an "engineering operation" rather than a building, is not in the circumstances of the application inappropriate development. It may also be possible for an Applicant to show that the physical characteristics of a proposed overhead line development or wind farm are such that it has no adverse effects which conflict with the fundamental purposes of Green Belt policy. | EN-1 Section 5.10.12. | No areas of Green Belt have been identified within the proposed onshore development area. |
| Ensure that Applicants do not site their scheme on the best and most versatile agricultural land without justification. It should give little weight to the loss of poorer quality agricultural land (in grades 3b, 4 and 5) except in areas (such as uplands) where particular agricultural practices may themselves contribute to the quality and character of the environment or the local economy. | EN-1 Section 5.10.15. | See ***section 21.6.2.1.*** |

#### 21.4.1.2 Local Planning Policy

28. EN-1 states that the Planning Inspectorate will also consider Development Plan Documents or other documents in the Local Development Framework to be relevant to its decision making.

29. The proposed onshore development area falls under the jurisdiction of Suffolk County Council and the jurisdiction of the Suffolk Coastal District Council local planning authority (LPA).

30. There are no relevant land use and agriculture planning policies from SCC.

31. SCDC is reviewing their current Local Plan, a First Draft Local Plan has been published for public consultation (period of consultation from 20th July to 14th September 2018) (SCDC 2018). This plan sets out strategic planning policies within East Suffolk and how the local planning authorities address the NPPF on a local basis. The Suffolk Coastal District Council Local Plan incorporates 'saved' polices from the 2006 and 2013 revisions of the Local Plan and includes core strategies such as the Suffolk Minerals Core Strategy and Suffolk Waste Core Strategy (more detail on these is given in ***Chapter 18 Ground Conditions and Contamination***). Strategic Policies (SP), Development Management Policies (DM) and Objectives from this plan that are relevant to land use and agriculture are detailed in ***Table 21.6***.

**Table 21.6 Relevant Local Planning Policies**

| Document | Policy | Policy/Guidance Purpose |
|---|---|---|
| **Suffolk Coastal District Council** | | |
| Suffolk Coastal District Council (2018) First draft Local Plan | AP28 (saved policy) | Areas to be Protected from Development<br>Development will not normally be permitted where it would materially detract from the character and appearance of:<br>(i) those areas identified on the Proposals Map to be protected from development, or further development; and<br>(ii) other sites, gaps, gardens and spaces which make an important contribution in their undeveloped form to a Town or Village, its setting, character, or the surrounding landscape or townscape.<br>Outside of the physical limits boundaries of Towns and Villages, the area is defined as Countryside. |
| | Strategic Policy SP1 – Sustainable Development | Aims to deliver sustainable communities through better integrated and sustainable patterns of land use, movement, activity and development. This SP gives priority to re-using previously developed land as opposed to greenfield sites |
| | Strategic Policy SP14 – | To promote a spatial strategy that protects |

| Document | Policy | Policy/Guidance Purpose |
|---|---|---|
| | Biodiversity and Geodiversity | and enhances as far as possible the distinctive and valued natural and historic landscape, and the built environment of the district. To ensure, in particular, that where strategic new development takes place appropriate compensatory and mitigatory measures are secured to ensure that any adverse impacts are limited and that it does not result in coalescence of settlements. |
| | SCLP12.23<br>Strategy for Aldeburgh | New development is anticipated to occur through the development of previously developed land including infilling. The strategy aims to maintain the town's close-knit historic character and retain the sensitive environment, particularly the setting and along the edges of the town |
| | Sections 12.186 – 12.192<br>Strategy for Leiston | Protect and enhance the setting of the town |
| | Strategic Policy SP30 – The Coastal Zone | Sets out SCDC's commitment to promote Integrated Coastal Zone Management (ICZM). Development which is consistent with ICZM plans and contributes to the sustainable future of coastal and estuarine environment will be supported as will investment and resources from the private sector for coastal defence and adaption measures.<br>Development will be resisted where it conflicts with the '*adopted Strategic Flood Risk Assessment, the Shoreline Management Plan and Estuarine Plans as endorsed by the Council*' (SCDC 2013). |

#### 21.4.1.3 Assessment Guidance

32. There is no specific industry guidance on assessing the impacts of projects on land use and agriculture, therefore a methodology has been developed for this assessment based on the following sources:

- Highways Agency (2001) Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 6 (Land Use) and Part 11 (Geology and Soils); and

- 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).

33. In addition to the sources of guidance outlined above there are a number of documents that provide best practice guidance on soil handling and construction management. These offer guidance on methods to reduce the impact on soils and land use and agriculture, particularly during construction. They are:

- Department for Environment, Food and Rural Affairs (Defra) (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites;
- Defra (2016) Waste Management Duty of Care Code of Practice;
- MAFF (2000) Good Practice Guide for Handling Soils;
- MAFF (1991) Practical Guide to Preventing the Spread of Plant and Animal Diseases;
- Environment Agency (2010) Managing Invasive Non-native Plants;
- Natural England (2012) Agricultural Land Classification: Protecting the Best and Most Versatile Agricultural land; and
- Defra (2003) Biosecurity Guidance to Prevent the Spread of Animal Diseases.

### 21.4.2 Data Sources

34. The following data were used to inform the land use and agriculture impact assessment (***Table 21.7***).

**Table 21.7 Data Sources Features**

| Data | Source | Year | Coverage | Confidence | Notes |
|---|---|---|---|---|---|
| Suffolk Coastal District Local Plan (First Draft) | SCDC | 2018 | Proposed onshore development area | High | n/a |
| ALC and agri-environment schemes | Natural England | 2012 | England and Wales | High | Locations and Details |
| Common Land | Natural England | 2011 | England and Wales | High | Locations and Details |
| 'A' Roads, Railway Lines | Ordnance | 2018 | England and | High | Locations and Details |

| Data | Source | Year | Coverage | Confidence | Notes |
|---|---|---|---|---|---|
| and Urban Areas | Survey | | Wales | | |
| Utilities | EMAP | 2018 | Proposed onshore development area | High | Locations and Details |
| Animal Burials | APHA | 2018 | Proposed onshore development area | Medium | Information on animal burials, records of outbreaks or occurrences of notifiable or quarantine plant pest diseases. |
| Invasive Species | Biological records and Phase 1 Surveys (site walkover) | 2018 | Proposed onshore development area | High | Locations and Details |
| Soil Survey of England and Wales | National Soil Resources Institute | 2014 | East Anglia | High | Locations and Details |
| Agricultural Activities | Land agents and public consultation events | 2018 | Proposed onshore development area | Medium | High level qualitative data on agricultural activities in Suffolk and specific to the proposed onshore development area |

35. Any additional data sets will be identified through feedback obtained from stakeholders and landowners in the ES as part of the DCO application.

### 21.4.3 Impact Assessment Methodology

36. The generic assessment methodology that is applied throughout the PEIR is explained in detail in ***Chapter 5 EIA Methodology***. The following sections describe more specifically the methodology, used to assess the potential impacts of the proposed East Anglia TWO project on onshore land use and agriculture, following the characterisation of the existing environment.

37. Two key groups of impact have been identified for the purpose of defining receptor sensitivity and impact magnitude in this chapter:

- Impacts on land use and tenure: these are the potential impacts of the project on human beings, including landowners and occupiers, local communities and other land users.
- Impacts on agricultural productivity and soil resources: These are potential project impacts on the bio-physical elements of the soils, the surrounding environment and the productivity of the land. The focus of this chapter is on agricultural productivity. Soil resources are discussed briefly and covered in greater detail in ***Chapter 18 Ground Conditions and Contamination.***

38. Whilst there are clear links between the two impact groups, the assessment of receptor sensitivity and magnitude of effect will differ. The potential impacts will be assessed as a function of the sensitivity of a receptor and the magnitude of the effect. Examples of these are given in the following sections.

#### 21.4.3.1 Sensitivity

39. The sensitivity of receptors is based on the capacity of receptors to tolerate change and whether or not increased risks would be acceptable within the scope of the prevailing legislation and guidelines. The degree of change that is considered to be acceptable is dependent on the susceptibility of the receptor to the change that the proposed East Anglia TWO project would potentially have.

40. Guidance for the definitions of levels of sensitivity is provided in ***Table 21.8***.

**Table 21.8 Sensitivity Definitions for Land Use Receptors**

| Sensitivity | Land Use and Tenure | Agriculture and Soils |
|---|---|---|
| High | Receptor has no or very limited capacity to accommodate changes to the land use such as loss of land areas, soil degradation etc. | |
| | Higher level ESSs;<br>Future planning applications for large scale planning uses;<br>Internationally and nationally designated planning policy areas; or<br>Land uses that are not possible elsewhere or regionally scarce and cannot be adapted or replaced e.g. the ecosystem service functions of soils. | ALC Grade 1 or 2 land (***Appendix 22.1***);<br>Farming practices with specific requirements;<br>Land with Notifiable Weeds (risk of spread);<br>Land with notifiable Scheduled diseases (risk of spread); or<br>Soil vulnerable to structural damage and erosion or unrecoverable or not adaptable to changes. |
| Medium | Receptor has limited capacity to accommodate changes to the land use such as loss of land areas, soil degradation etc. | |

| Sensitivity | Land Use and Tenure | Agriculture and Soils |
|---|---|---|
| | Entry level ESS; or<br>Local designated planning policy areas. | ALC Grade 3; or<br>Seasonally susceptible to structural damage or erosion. |
| Low | Receptor has moderate capacity to accommodate changes to the land use such as loss of land areas, soil degradation etc. | |
| | No designated planning policy areas;<br>No ESS's but under other environmental management;<br>Land used for ordinary agriculture or horticulture; or<br>Large agricultural holdings. | ALC Grade 4 land;<br>Arable or pasture grassland; or<br>Medium to course material, some resistance to structural damage the majority of the year. |
| Negligible | Receptor generally tolerant of changes to the land use such as loss of land areas, soil degradation etc. | |
| | No designated planning policy areas; or<br>No ESS. | ALC Grade 5 land;<br>Non-agricultural and urban, non-arable or pasture grassland; or<br>Greater resistance to soil structural damage. |

#### 21.4.3.2 Magnitude

41. Impact magnitude on a receptor has been defined with consideration of the spatial extent, duration, frequency and severity of the effect. The following definitions apply to the time periods used in the magnitude assessment:

- Long term: Greater than five years;
- Medium term: Two to five years; and
- Short term: Less than two years.

42. For the purposes of this assessment, construction related impacts that do not extend beyond the construction phase of the proposed East Anglia TWO project; a short-term magnitude will be assigned.

43. Impact magnitude is assessed qualitatively according to the criteria defined in ***Table 21.9***.

**Table 21.9 Definitions of Magnitude Levels for Land Use Receptors**

| Magnitude | Land Use and Tenure | Agriculture and Soils |
|---|---|---|
| High | Permanent (>10 years) / irreversible changes, over the whole receptor, affecting usability, risk, value over a wide area, or certain to affect regulatory compliance. | Permanent loss of over 20 hectares (ha) of the BMV agricultural land (grades 1 and 2) or more than 60% total regional resource (Natural England, 2012a);<br>Full recovery of land would take more than 10 years; or<br>Existing land use would not be able to continue on more than 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. |
| 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;<br>Existing land use would not be able to continue on less than 5ha of land; or<br>Noticeable changes to the existing land use although it may continue. | Medium to long term loss of more than 20ha of the BMV agricultural land or more than 60% of the regional resource;<br>Permanent loss of more than 10ha of ALC (grade 3) agricultural land;<br>Full recovery of land is expected within 5 to 10 years;<br>More than 20ha of soil is temporarily unsuitable for agriculture; or<br>Small areas (<10ha) of any agricultural land permanently lost from agriculture. |
| Low | Temporary change affecting usability, risk or value over the medium-term (<5 years); or<br>Temporary change affecting usability within the site boundary; measurable permanent change with minimal effect usability, risk or value; no effect on regulatory compliance. | Short term loss of more than 20ha, or permanent loss of more than 10ha of ALC Grade 4 land or more than 10% of regional resource;<br>Full recovery of land is expected within 5 years; or<br>Less than 20ha of soil is temporarily unsuitable for agriculture or less than 1Ha 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. | No material change to the soil resource has been identified; or<br>Small area<1,000m2 is permanently lost from agriculture. |

### 21.4.3.3 Impact Significance

44. Following the identification of receptor sensitivity and magnitude of the effect, it is possible to determine the significance of the impact.

45. The matrix which will be used as tool to aid this assessment is presented in ***Table 21.10***. The assessment of impact significance is qualitative and reliant on professional experience, interpretation and judgement. The matrix should therefore be viewed as a framework to aid understanding of how a judgement has been reached, rather than as a prescriptive tool.

**Table 21.10 Impact Significance Matrix**

| | | **Negative 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* |

46. Following initial assessment, if the impact does not require additional mitigation (or none is possible) the residual impact will remain the same. If, however, additional mitigation is proposed there will be an assessment of the post-mitigation residual impact.

47. As with the definitions of magnitude and sensitivity, the matrix used for a topic is clearly defined by the assessor within the context of that assessment. The impact significance categories are divided as shown in ***Table 21.11***.

**Table 21.11 Impact Significance Definitions**

| Value | Definition |
|---|---|
| Major | Very large or large change in receptor condition, both adverse or beneficial, which are 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 are 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. |

| Value | Definition |
|---|---|
| Negligible | No discernible change in receptor condition. |
| No change | No impact, therefore no change in receptor condition. |

48. Note that for the purposes of this PEIR, major and moderate impacts are deemed to be 'significant'. In addition, whilst minor impacts are not significant in their own right, it is important to distinguish these from other non-significant impacts as they may contribute to significant impacts cumulatively or through interactions.

49. Embedded mitigation will be referred to and is included in the initial assessment of impact. If the impact does not require further mitigation (or none is possible) the residual impact will remain the same. If, however, mitigation is required there will be an assessment of the post-mitigation residual impact.

### 21.4.4 Cumulative Impact Assessment

50. The proposed East Anglia TWO project Cumulative Impact Assessment (CIA) will initially consider the cumulative impact with only the proposed East Anglia ONE North project against two different construction scenarios (i.e. construction of the two projects simultaneously and sequentially). The worst case scenario of each impact is then carried through to the traditional CIA which considers other developments which are in close proximity to the proposed East Anglia TWO project.

51. For a general introduction to the methodology used for the CIA please refer to ***Chapter 5 EIA Methodology***. Further detail of the CIA in regard to land use and agriculture is given in ***section 21.7.***

### 21.4.5 Transboundary Impact Assessment

52. There is no pathway to transboundary impacts as the proposed onshore development area is not sited in proximity to any international boundaries. Therefore, transboundary impacts on land use and agriculture are scoped out of this assessment and will not be considered further.

## 21.5 Existing Environment

53. This section describes the existing environment in relation to land use and agriculture. It is based on a desk-based study of data sources identified in ***section 21.4.2*** and ***Table 21.7*** as a basis for the impact assessment.

54. The land use within the proposed onshore development area is predominantly agricultural, the majority of which is arable and a small amount of grazing

pastures'. There are also areas of 'non-agricultural' land, comprised of woodland and small waterbodies (such as rivers and ponds) (***Figure 21.2***). The largest urban areas within, or adjacent to, the proposed onshore development area are Leiston, Aldringham, Friston, Knodishall and Coldfair Green. A key guiding design principle taken forward into the site selection process was that urban areas were to be avoided.

### 21.5.1 Land Use Policies and Designations

55. A review of the SCDC Local Plan (SCDC 2018) was undertaken to identify any parcels of land that are allocated for, or restrict, future development or changes of use. This included a review of the proposals map for allocations for each of the local authorities.

56. The relevant planning policies in relation to land use and agriculture are outlined in ***section 21.4.1.2.*** Nature conservation, heritage and landscape designations are discussed in detail in ***Chapter 22 Onshore Ecology***, ***Chapter 24 Archaeology and Cultural Heritage*** and ***Chapter 28 Seascape, Landscape and Visual Amenity*** of the PEIR respectively.

57. Upon a review of the SCDC Local Plan, Special Landscape Areas (SLAs) are considered in ***Chapter 28 Seascape, Landscape and Visual Amenity*** and conservation areas are considered in ***Chapter 24 Archaeology and Cultural Heritage.***

58. No planning designations discussed in the SCDC local plan are located within the proposed onshore development area. Therefore, no impacts are predicted on planning designations due to the proposed East Anglia TWO project and therefore the potential impact on land use policies and designations is not considered further.

### 21.5.2 Agricultural Activities

59. This section describes the baseline environment in terms of agricultural land cover within the proposed onshore development area. It describes the crops grown and agricultural practices adopted where these are known. It should be noted that this assessment is based on high level datasets (shown in ***Table 21.6***) and ecological walkover surveys (further details of which can be found in ***Chapter 22 Onshore Ecology***), which are only accurate at the time of data collection. They should only be considered indicative of the land uses found within the study areas.

60. The primary land use within the proposed onshore development area is agricultural, (arable and pastoral farmland) with some areas of woodland and improved grassland (***Figure 21.2***).

61. Agriculture in Suffolk is primarily arable or mixed use with farms ranging in size from less than 5ha to more than 100ha (Defra 2013a). Soil types vary from heavy clays to light sands and can support crops such as winter wheat, winter barley, sugar beet, oilseed rape, winter and spring beans and linseed, and smaller areas of rye, oats and other vegetables can be found. Pigs and poultry are also very important to agriculture in Suffolk, with over 20% of the UK's outdoor reared pork originating in Suffolk (Invest in Suffolk 2018). The proposed onshore development area reflects the type of agricultural land typical of Suffolk County.

62. For the purposes of this assessment, the agricultural industry is discussed in terms of Suffolk County as a whole.

63. Agriculture in Suffolk was worth £330 million in crops and livestock output in 2004 (Transforming Suffolk Strategy 2008 – 2028). The agricultural sector (including growing, production, processing and distribution) has since exhibited growth and is estimated to be worth £400 million, and thus continues to play an important part of the county's economy (Invest in Suffolk 2018).

64. Agriculture accounted for 2,688 businesses in Suffolk in 2018 and employed just over 8,200 people (Invest in Suffolk 2018). Cereal crop farming accounts for almost half of the agricultural land in Suffolk; the majority being wheat but also barley and other crops including biofuels (Suffolk County Council 2011). Suffolk's farmland accounts for over a fifth of the agricultural land in the East of England.

### 21.5.3 Agricultural Land Classifications

65. Agricultural land in England and Wales is classified according to the quality and versatility of the soil in a nationally recognised grading system (the Agricultural Land Classifications). The grading system was produced by the former Ministry of Agriculture, Fisheries and Food (MAFF, now Defra) and is described in ***Table 21.12***. Grade 1 represents best quality agricultural land through to Grade 5 which represents agricultural land of the poorest quality.

**Table 21.12 ALC Grades and Descriptions (MAFF 1988)**

| Grade | Description |
|---|---|
| Grade 1 – Excellent Quality Agricultural Land | Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality. |
| Grade 2 – Very Good Quality Agricultural Land | Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with |

| Grade | Description |
|---|---|
| | the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1. |
| Grade 3[1] – Good to Moderate Quality Agricultural Land | Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2. |
| Grade 4 – Poor Quality Agricultural Land | Land with severe limitations, which significantly restrict the range of crops and / or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land. |
| Grade 5 – Very Poor Quality Agricultural Land | Land with very severe limitations, which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops. |
| Urban | Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, and cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants. |

66. The proposed onshore development area covers Grade 2 (very good), Grade 3 (good to moderate) and Grade 4 (poor) agricultural land. The onshore substation location and National Grid substation location land covers agricultural land of Grade 2 and Grade 3 quality. This is shown on ***Figure 21.3.***

67. The percentage of land of different ALC grades within the proposed onshore development area is presented below in ***Table 21.13.***

**Table 21.13 Percentage of Land of Different ALC Grades within the Proposed Onshore Development Area**

| ALC Grade | Hectares | % ALC Grade land within Proposed onshore development area | ALC Grade land within Proposed onshore development area as a % of total ALC Grade land in Suffolk |
|---|---|---|---|
| Grade 1 | 0 | n/a | n/a |
| Grade 2 | 115 | 1.2 | 0.10 |
| Grade 3 | 285 | 44 | 0.09 |

[1] No sub-grades of ALC Grade 3 (3a or 3b) have been identified within the proposed onshore development area, therefore only ALC Grade 3 is considered in the assessment.

| ALC Grade | Hectares | % ALC Grade land within Proposed onshore development area | ALC Grade land within Proposed onshore development area as a % of total ALC Grade land in Suffolk |
|---|---|---|---|
| Grade 4 | 205 | 31 | 0.37 |
| Non-Agricultural Land (Includes urban, woodland, agricultural buildings and open water) | 71 | 11 | n/a |

68. To conclude, ***Table 21.13*** shows that the biggest percentage of agricultural land within the proposed onshore development area is Grade 3 and Grade 4 respectively. In total, 75.64% of the proposed onshore development area is moderate to poor quality agricultural land. There is no agricultural land of the highest quality within the proposed onshore development area.

### 21.5.4 Soil Type

69. This section provides a description of the soils found within the proposed onshore development area, including the type, drainage, texture, fertility and moisture.

70. Reference should be made to ***Chapter 20 Water Resources and Flood Risk*** 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 proposed onshore development area. 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 will differ between and within individual fields and will be captured within the SMP.

71. The soils within the proposed onshore development area are dominated by freely draining slightly acid sandy soils. The soils are from low natural fertility (without the addition of fertilizers).

72. ***Table 21.14*** provides additional detail on the characteristics of the soil types found within the site according to published information (National Soils Research Institute (NSRI) undated).

**Table 21.14 Characteristics of the Soil Types within the Proposed Onshore Development Area**

| | |
|---|---|
| **Freely Draining Slightly Acid but Base-Rich Soils** | |
| Typical Habitats (Semi-natural vegetation) | Base-rich pastures and deciduous woodlands |
| Texture | Loamy |
| Drainage Type | Freely draining |
| Natural Fertility | Moderate to high |
| **Slowly Permeable Seasonally Wet Slightly Acid but Base-Rich Loamy And Clayey Soils** | |
| Typical Habitats (Semi-natural vegetation) | Lowland seasonally wet pastures and woodlands |
| Texture | Loamy |
| Drainage Type | Impeded drainage |
| Natural Fertility | Moderate |
| **Freely Draining Slightly Acid Sandy Soils** | |
| Typical Habitats (Semi-natural vegetation) | Freely draining slightly acid sandy soils |
| Texture | Sandy |
| Drainage Type | Freely draining |
| Natural Fertility | Low |
| **Freely Draining Slightly Lime-Rich Sandy Soils** | |
| Typical Habitats (Semi-natural vegetation) | Sand dune vegetation ranging from pioneer dune systems through to low shrub |
| Texture | Sandy |
| Drainage Type | Freely draining |
| Natural Fertility | Low |
| **Fen Peat Soils** | |
| Typical Habitats (Semi-natural vegetation) | Wet fen and carr woodlands |
| Texture | Peaty |
| Drainage Type | Naturally wet |
| Natural Fertility | Mixed |

73. The NSRI provides a classification for Expected Crops and Land Use based on land uses and land cover commonly associated with individual soil types. Those relevant to the proposed onshore development area are:

- Suitable for range of spring and autumn sown crops; under grass the soils have a long grazing season. Free drainage reduces the risk of soil damage from grazing animals or farm machinery. Shortage of soil moisture most likely limiting factor on yields, particularly where stony or shallow;
- 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 prevent damage to soil structure. Land is tile drained and periodic moling[2] or subsoiling will assist drainage;
- 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;
- Suitable for wide range of spring and autumn sown crops including irrigated roots, potatoes and field vegetables; lime and fertiliser rapidly leached; shortage of soil moisture will limit yield without irrigation; and
- Reasonably flexible but more suited to autumn sown crops and grassland; soil conditions may limit safe groundwork and grazing, particularly in spring.

### 21.5.5 Environmental Stewardship Scheme

74. Environmental Stewardship Schemes (ESS) provide funding and advice to farmers, tenants and other land managers to encourage effective environmental management of land (Natural England 2011). They were a key tool for the delivery of the Rural Development Programme for England 2007-2013, funded by the European Union and UK Government. The 2014-2020 Rural Development Programme of England attempts to build on and enhance the Environmental Stewardship programme, by providing funding to protect 14,000ha of woodland and targeting specific biodiversity and water objectives (European Commission 2017). The schemes are administered by Natural England for Defra.

75. There are three levels to the scheme:

- Entry Level Stewardship (ELS) – includes Uplands ELS (UELS): simple and effective land management agreements with priority options;

[2] Moling is a trenchless method used to lay pipes. A pneumatically-driven machine known as a mole forces its way through the soil along the desired path of the pipe, this avoids the need to dig a trench

- Organic (OELS) – includes Uplands OELS: organic and conventional mixed farming agreements; and
- Higher Level Stewardship (HLS): more complex types of management and agreements tailored to local circumstances.

76. In total, 53.2% (345.3ha) of the proposed onshore development area is covered by ESS. The proposed onshore development area crosses two parcels of land which are signed up to ESS. The ESS to the east of the Aldeburgh road is an area of 'Entry Level with Higher Stewardship Scheme' (293.8ha, 45.3% of the proposed onshore development area) and the ESS that falls within the west of the proposed onshore development area is a smaller area of 'Entry Level Stewardship' Scheme (51.4ha, 7.9%) of the proposed onshore development area). The onshore substation and National Grid substation are not located on land designated under an ESS. These are shown in ***Figure 21.4.***

77. Elements of construction, operational and decommissioning phases of the onshore cable corridor such as trenching, cable installation and link boxes could potentially impact on land under an ESS agreement and will be considered further in the assessment.

78. It should be noted that the mapping from Natural England identifies the parcels of land that are subject to agreements and was last updated by Natural England in February 2018. It does not identify the specific areas of land that are under specific management (e.g. the location of wildlife friendly strips within parcels of land). This land may be identified at a later stage of consultation through future discussions with landowners and land agents.

### 21.5.6 Notifiable Scheduled Diseases

79. The potential exists for cable installation to transmit agricultural crop and animal diseases between adjacent land holdings and fields, since installation activity would cross between these land holdings and fields.

80. However, no records of animal burials or notifiable scheduled diseases were identified within the proposed onshore development area were provided following consultation with the Animal and Plant Health Agency (APHA). Therefore, potential impacts of the transfer of notifiable scheduled diseases are not considered further.

81. Should any animal remains be discovered during the construction phase that indicate a potential burial site, the main works contractor would cease all work in the vicinity and immediately advise the Animal Health Regional Office accordingly.

### 21.5.7 Injurious Weeds and Invasive Plant Species

82. The Phase 1 habitat survey and biological records check did record one instance of Himalayan Balsam within the onshore study area. Refer to ***Chapter 22 Onshore Ecology*** for the full Phase 1 habitat survey report. Appropriate construction methods will be implemented to ensure that this species is managed appropriately.

83. Potential impacts of the transfer of injurious weeds and invasive plant species are not considered further.

### 21.5.8 PRoW and Cycle Routes

84. Recreational land uses include the Suffolk Coast Path, which runs along the coastline between Felixstowe and Lowestoft and is present within the proposed onshore development area at the coast between Sizewell and Thorpeness (***Figure 21.2***). Inland there are numerous Public Rights of Way (PRoWs), bridleways and other footpaths.

85. ***Chapter 30 Socio-Economics and Tourism and Recreation*** provides a detailed summary of existing PRoWs and cycle paths in the locality of the proposed East Anglia TWO project and addresses the potential impacts on PRoWs. They are not considered further within this chapter of the PEIR.

### 21.5.9 Utilities

86. There are a number of utilities present within the proposed onshore development area, including telecommunications, buried and above ground electricity cables, gas and public water mains. The locations of known utilities are shown in ***Figure 21.5***.

87. ***Table 21.15*** provides information on the utilities of major and national importance that cross the proposed onshore development area. Details regarding the source of this information are listed in ***Table 21.7***.

**Table 21.15 Major Utilities Crossing the Proposed Onshore Development Area**

| Utility Type | Provider |
|---|---|
| Drainage and Sewage Treatment Works | Anglian Water |
| Electric | National Grid/UK Power Network |
| Overhead Electric | National Grid/UK Power Network |
| Water | Essex and Suffolk Water |
| Gas | National Grid/ESP Utilities |
| Gas | Fulcrum Pipelines Limited |

| Utility Type | Provider |
|---|---|
| Telecoms | BT Openreach |
| Telecoms | Interoute Communications |
| Telecoms | Vodafone |
| Telecoms | Virgin Media |

### 21.5.10 Common Land

88. Under the CRoW Act 2000 the public are not restricted to paths, but can freely walk on mapped areas of mountain, moor, heath, downland and registered common land. Common land is shown on ***Figure 21.6.***

89. There is one area of common land which sits within the proposed onshore development area, which is Thorpeness Common. There are five small areas of common land that are either immediately adjacent to or on the boundary of the proposed onshore development area. Any overlap of the proposed onshore development area with these five areas of common land is due to the scaling on ***Figure 21.6***. The proposed onshore development area will not encroach on these five areas of adjacent common land.

### 21.5.11 Anticipated Trends in the Baseline Conditions

90. The baseline review of land use and agriculture in ***section 21.5*** shows that the primary land use within the proposed onshore development area is agricultural, (arable and pastoral farmland) with some areas of woodland and improved grassland.

91. ***Chapter 22 Onshore Ecology*** notes that species associated with farmland environments have declined over the short and long term, with farmland birds and butterflies both declining. Soil erosion is expected to occur naturally over time, depending on weather conditions (exacerbated by climate change) and farming practices.

92. Consequently, the quality and availability of agricultural land could reasonably be expected to decline over time, with some potential offsets by advances in agricultural innovations and technology.

## 21.6 Potential Impacts

93. This section outlines potential impacts on land use and agriculture as a result of the proposed East Anglia TWO project. Each impact is described and assigned a significance using the assessment methodology described in ***section 21.4*** and ***Chapter 5 EIA Methodology.***

94. As the onshore substation and National Grid substation (considered together as substation(s)) will potentially have different impacts in terms of type and magnitude than those of the onshore cable corridor and landfall, the magnitude of these are discussed separately or under the same impact where relevant. The greater of the two magnitudes is used to define the significance of that impact overall.

### 21.6.1 Potential Impacts during Construction

95. Reference should be made to ***Chapter 6 Project Description*** for full details of the activities proposed during the construction phase. However, in summary, the activities considered likely to impact on land use and agriculture are as follows:

- Creation of construction consolidation sites to support construction;
- Construction of onshore infrastructure including landfall, onshore cable route, transition bay and jointing bay locations – installation techniques may include HDD;
- Construction of the onshore substation and landscaping;
- Construction of National Grid infrastructure;
- Construction of new access tracks and haul road;
- Stockpiling of topsoil and subsoil; and
- Disposal of excess soil offsite to a suitably licensed facility.

96. The following section considers the potential proposed embedded mitigation (***Table 21.4***), other mitigation measures suggested within the section are considered to be additional. An OCoCP will be included with the DCO application which will set out in full the embedded and additional mitigation to be applied.

#### 21.6.1.1 Impact 1: Land Taken out of Existing Use

97. Land would be directly taken out of existing use or isolated due to construction activities and effectively taken out of use. Due to health, safety and technical requirements during construction, works areas would be fenced off and not accessible to landowners or occupiers for the duration of the construction period. The exact timing and duration of works at any location are not known at this time. However, construction of the cable route will be sectional where possible; meaning that in most cases land will not be taken out of existing use for the full construction duration.

#### 21.6.1.1.1 Landfall and Onshore Cable Corridor

98. ***Section 21.3.2*** addresses the worst case scenario and ***Table 21.3*** details land take as a result of the proposed East Anglia TWO project. The proposed onshore development area is 532.97ha in size. However, the actual construction land take area for the construction phase of the proposed East Anglia TWO project cable corridor and landfall will be approximately 520,000m$^2$ (52ha).

99. The area of land from which landowners, occupiers or the public would need to be excluded has been, and will be further, minimised through the route selection process as described in ***Chapter 4 Site Selection and Alternatives.*** Access for farm vehicles, to land severed by the works, would be maintained where practicable in consultation with and subject to agreements with individual landowners and occupiers. Where necessary, crossing points would be agreed pre-construction.

100. At this stage, it is not possible to calculate the area of land that would become isolated or inaccessible, as access to individual fields would be determined as part of detailed design and construction planning. It is however likely that relatively small areas or strips of land would be affected.

101. Based on the information provided in ***section 21.5***, the majority of the construction footprint would be within areas currently associated with agricultural production.

102. Other land uses encompassed by the proposed onshore development area include roads and associated verges, field boundaries and watercourses.

103. The total area of farmed land in Suffolk is 283,701ha (Defra 2013b). The footprint of the proposed onshore development area constitutes 0.2% of the county resource and the construction footprint of the onshore cable corridor and landfall represents 0.01% of this resource.

104. The precise duration of impacts on land take is dependent on the timing of the construction sequence.

105. Where possible, reinstatement of hedgerows and their associated features (banks and ditches), and drainage systems would occur following the installation of each section of cable. Removal of trees or interference with roots would be avoided where possible (for further details see ***Chapter 22 Onshore Ecology***). Any land temporarily lost (through lost accesses) would be consulted on with landowners and the local authorities. The exact timing and duration of works at any location are not known at this time.

106. The sensitivity of the receptor is considered to be medium, because although the quality of the land varies from ALC Grades 2 – 4, the majority of the land area is either grades 3 or 4 (see ***Table 21.13***). The magnitude of effect is considered to be low given that there is no permanent change to land use for the onshore cable corridor and landfall, with only temporary restriction to agricultural activities, and based upon the areas of land taken ranging from ALC Grades 2-4. Furthermore, the area affected along the onshore cable route is minimal as a percentage of the county resource. In the context of the county resource the impact significance is considered to be negligible and in the context of the local resource **minor adverse.**

107. During construction, it is unavoidable that land along the onshore cable corridor would temporarily be taken out of its existing use, however the embedded mitigation measures (such as site selection and providing temporary means of access), (see ***Table 21.4***) reduce the potential impacts as far as practicable. No further mitigation measures are recommended. Potential impacts on ecological features such as hedgerows and trees and any associated mitigation are considered further in ***Chapter 22 Onshore Ecology***.

#### 21.6.1.1.2 Substation(s)

108. Land take at the substation(s) locations is considered a permanent impact, or an impact with the duration of the project lifespan. This impact is discussed as an operational impact, please refer to ***section 21.6.2.1.2***.

### 21.6.1.2 Impact 2: Impacts to ESS

109. During the construction period, there would be the potential for impacts on ESS. The effect on individual landowners / occupiers is likely to be specific to their own scheme, which would need to be discussed between the Applicant, landowners, occupiers and Natural England prior to construction. For the purposes of the PEIR, this assessment looks at the impacts in general terms rather than on an agreement by agreement basis. Two potential connected impacts are anticipated as a result of this:

- Ecological – in terms of the loss of the agreements and the substantive agri-environmental objectives of the scheme; and
- Financial - in terms of the loss of the agreements and the impact on overall farming income.

110. Following the completion of construction, all areas subject to ESS (with the exception of any permanent infrastructure such as the substation(s) site) would be reinstated and therefore not inhibit similar agreements being re-established (see ***Chapter 22 Onshore Ecology***).

#### 21.6.1.2.1Landfall and Onshore Cable Corridor

111. During construction, there would be the potential for impacts from the onshore cable corridor on ESS, as described in ***section 21.6.1.2*** above. In total, 53.2% (345ha) of the proposed onshore development area falls under an ESS (see ***Figure 21.4***). The landfall and onshore cable corridor will cover some of this land although the exact construction footprint that falls within an ESS will not be known until detailed cable routeing has been confirmed (this will be detailed in the ES).

112. The duration of the construction works for the onshore cable corridor is stated in ***Table 21.3.*** Features that are likely to be subject to agreements, such as trees and ponds have been avoided where practicable (see ***Chapter 22 Onshore Ecology***). A number of ditches and hedgerows would be crossed; these would be crossed at right angles, where possible, to minimise the footprint and therefore disturbance to those features, and replanted / reinstated following completion of the works.

113. There is potential for a certain amount of disruption to ESS as a direct result of loss of land during construction affecting such features as field margins. A number of landowners within an ESS would be affected by the proposed East Anglia TWO project. The area of ESSs which fall within the proposed onshore development area represents approximately 0.16% of Suffolk county resource (204,545ha) It is considered that the overall magnitude of effect would be negligible due to the size of area affected at county level, the extent of the ESS itself which falls within the onshore cable route, and the level of the ESSs. The sensitivity of receptors is considered to be medium (***Table 21.8***) due to the size of the area affected and the level of the ESS being a lower, entry level area.

114. Overall, the significance of the impacts to land within Environmental Stewardship is considered to be **negligible**. The Applicant will consult with affected landowners to agree the necessary compensations.

#### 21.6.1.2.2Substation(s)

115. At the substation(s) site, there are no ESS and therefore no impact is predicted. This is discussed further in ***section 21.6.2.2***.

### 21.6.1.3 Impact 3: Impacts to Land Drainage

#### 21.6.1.3.1Landfall, Onshore Cable Corridor and Substation(s)

116. Construction works such as excavation and stockpiling of soils has the potential to cause an impact to the natural and artificial field drainage systems. Drains are likely to be at a depth of between 0.5m – 1.5m, made of ceramic, plaster or other appropriate materials and therefore would be impacted by any excavation works planned through agricultural fields. It would be necessary to truncate the

drainage systems temporarily during excavation and installation and reinstate following construction.

117. Given the soil types found along the onshore cable route, some sections would have existing field drainage systems in place. The sensitivity of the receptor is considered to be high overall as the soil is vulnerable to erosion or structural damage (***Table 21.8***).

118. Embedded mitigation measures are proposed in ***Table 21.4.*** Embedded mitigation includes implementation of the final CoCP. These would include provisions for a water management design / drainage plan.

119. The magnitude of the effect is considered to be low as the impact will be short term (only during the construction phase of the proposed East Anglia TWO project) and the relatively small area of land affected. Refer to ***Chapter 20 Water Resource and Flood Risk*** for further detail regarding land drainage qualities.

120. Taking into account the embedded mitigation described above, the impact significance, due to the low magnitude of effect but high sensitivity of the receptor, is therefore considered to be moderate adverse. Examples of additional mitigation may include:

- The use of a specialist drainage contractor to undertake surveys and create drawings prior to and post-construction to locate drains and ensure appropriate reinstatement.
- The development of a Drainage Remediation Plan could be developed, outlining any further remediation work if required during post construction monitoring.

121. This additional proposed mitigation is expected to reduce the residual impact to **minor adverse**.

#### 21.6.1.4 Impact 4: Degradation to Natural Resource

##### 21.6.1.4.1Landfall, Onshore Cable Corridor and Substation(s)

122. The following activities proposed during the construction phase have been identified as having the potential to degrade the existing soil resource:

- Removal of trees and vegetation;
- Topsoil stripping, earthworks and landscaping within the construction footprint;
- Construction and operation of the haul road;

- Operation of the CCS;
- Storage of topsoil and subsoil; and
- Reinstatement of subsoil and topsoil.

123. There is the potential for soils to be compacted and soil structure to deteriorate during the works. The result would be reduced biological activity, porosity and permeability and increased strength. It can also lead to reduced water infiltration capacity and increased risk of erosion (European Commission, 2008). The effect of all of these impacts is usually reduced fertility and crop yields, should the site be returned to agricultural use in the future.

124. A range of embedded mitigation measures may be employed to reduce the effect of the construction activities on the soil resource. These include:

- Soils handling, storage and reinstatement by a competent contractor under Defra (2009) Construction code of practice for the Sustainable Use of Soils on Construction Sites;
- Topsoil stripping within all construction areas and storage adjacent to where it is extracted, where practical;
- Storage of the excavated subsoil separately from the topsoil, with sufficient separation to ensure segregation;
- Handling of soils according to their characteristics – e.g. within wooded areas it is unlikely that topsoil resources of any quality could be separated and preserved for reuse. If current wooded areas are to be used for storage it would not be necessary to undertake topsoil stripping. Topsoil from agricultural land may be treated as a single resource for stockpiling and reuse where appropriate;
- Where necessary, tree roots would be removed by screening;
- Under storage areas, loosening of subsoils is proposed when dry to improve permeability before the topsoil is replaced;
- For most after-uses, subsoils may be treated as a single resource for stockpiling where appropriate;
- During wet periods, limiting mechanised soil handling in areas where soils are highly vulnerable to compaction;
- Restricting movements of heavy plant and vehicles to specific routes and avoidance of trafficking of construction vehicles in areas of the site which are not subject to construction phase earthworks;
- Minimising the excavation footprint where possible; and

- In circumstances where construction has resulted in soil compaction, further remediation may be provided, through an agreed remediation strategy.

125. The mitigation measures above would be set out in a SMP, including construction method statements for soil handling, which would be produced by a competent contractor and agreed with the relevant regulator, in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP.

126. The soils within the proposed onshore development area are dominated by freely draining slightly acid sandy soils, therefore susceptible to compaction, and difficult to handle during wet periods using machinery without causing structural degradation. Given these characteristics, the soil resource at the site is conservatively considered to be of high sensitivity with respect to potential for degradation during the construction period.

127. Soil within the construction areas would be subjected to substantial earthworks including initial stockpiling and movement between stockpiles. The magnitude of effect is considered to be medium as full recovery of the land is expected within five to 10 years and an area less than 51.95ha is potentially going to be temporarily unsuitable for agriculture (***Table 21.9***).

128. Based on a medium magnitude of effect and high soil sensitivity, and without additional mitigation, the impact is predicted to be of major adverse significance at a local level.

129. Following implementation of the SMP, details of which are listed above, the Applicant could additionally seek private agreements with relevant landowners/occupiers regarding any measures required in relation to crop loss incurred as an indirect consequence of degradation of the soil resource during the construction phase of the proposed East Anglia TWO project. This is expected to reduce the predicted impact to **minor adverse** significance.

#### 21.6.1.5 Impact 5: Utilities

##### 21.6.1.5.1 Landfall and Onshore Cable Corridor and Substation(s)

130. The onshore cable corridor has been selected to avoid major buried utilities; however, those that do intersect with the proposed onshore development area are discussed in ***section 21.5.9*** and shown in ***Figure 21.5.***

131. The Applicant would be required to contact potentially affected utility providers and identify the location of existing services on the ground prior to construction. Major utilities will be covered by identifying protective provisions in the drafting

of the DCO, and with the use of crossing agreements. The Applicant would undertake utility crossings or diversions in accordance with the appropriate standards for such crossings or works. The continuation of water supplies will be ensured. Therefore, **no impacts** associated with existing utilities are anticipated during the construction of the proposed East Anglia TWO project.

#### 21.6.1.6 Impact 6: Impacts to Common Land

##### 21.6.1.6.1 Landfall and Onshore Cable Corridor

132. During the construction period, there is potential for impacts on common land. One area of common land falls within the proposed onshore development area, at the landfall Thorpeness Common). It should be noted that at the landfall, construction will primarily comprise of drilling under the common land with no construction footprint on Thorpeness Common. Potential accesses for construction will be along already existing access routes.

133. There are also five discreet areas of common land that are directly adjacent to the proposed onshore development area. Common land which is adjacent to the proposed onshore development area will not be subject to closures or loss of access because they can be accessed from the side which is not adjacent to the proposed onshore development area, therefore users of the land are unlikely to be affected in terms of access.

134. Overall, common access land is of medium sensitivity as it is protected by local planning policy. The magnitude of the impact described above is low, due to the construction activity involving HDD under the area of common land and extremely minimal activity on the common land itself. Therefore, due to the medium sensitivity and low magnitude of effect, the significance of the impact to common land is considered to be **minor adverse**.

##### 21.6.1.6.2 Substation(s)

135. No areas of common land have been identified within or adjacent to the substation(s) locations (***Figure 21.6***), therefore **no impacts** are predicted.

### 21.6.2 Potential Impacts during Operation

136. This section describes the potential impacts arising during the operational phase of the proposed East Anglia TWO project. Reference should be made to ***Chapter 6 Project Description*** for full details of the operational phase.

#### 21.6.2.1 Impact 1: Permanent change to Land Use

137. The Applicant will permanently reinstate the cable corridor following the construction phase.

138. Routine maintenance is anticipated as consisting of one annual visit to each jointing bay to carry out routine integrity tests, which would be accessed via man-hole covers and possible non-intrusive checking of the cable in between jointing bays with, for instance, ground penetrating radar.

139. Appropriate off-road vehicles would be used to access each jointing bay when carrying out the maintenance visit. Jointing bays would therefore be located adjacent to field boundaries or roads as far as possible to reduce impacts.

140. Non-scheduled maintenance to address faults as and when these may arise would also be necessary, and this maintenance could be required in between jointing bay locations.

#### 21.6.2.1.1Landfall and Onshore Cable Corridor

141. The areas of land that would be affected during the operational period are predominately limited to the narrow strip of land above the onshore cables, over which the Applicant is likely to acquire cable protection rights. The Applicant will seek to ensure as far as possible that agricultural activities along the onshore cable route can continue during the operational period.

142. The sensitivity of the receptor is considered to be medium because the land is of ALC Grades 2 – 4. The magnitude of the effect is considered to be negligible due to small area of land affected and the temporary nature of the impact (i.e. only when access is required). Additionally, it is anticipated that non-scheduled maintenance events would be highly localised, temporary and of short duration. Furthermore, embedded mitigation measures mean that jointing bays would be located away from watercourses and adjacent to field boundaries or roads, where practicable and appropriate off-road vehicles would be used to access each of these during maintenance where applicable.

143. Therefore, the impact significance is considered to be **negligible**.

144. Discussions with landowners regarding potential future land uses and any restrictions on these would be undertaken as part of ongoing discussions between landowners and the Applicant.

#### 21.6.2.1.2Substation(s)

145. The total permanent land take at the substation(s) would be 94,400m$^2$ (This is not inclusive of landscaping, see ***Table 21.3***). This land is ALC Grade 2 - 3 and is considered to be of high sensitivity. Due to the small area of the substation(s) in the context of the regional resource (0.002% of Suffolk's total ALC Grade 2 land), the magnitude of the effect is considered to be low. Although the impact significance is therefore predicted to be moderate adverse

at a site level of the substation(s) compound, the impact is considered to be of **minor adverse** significance in the context of the county.

#### 21.6.2.2 Impact 2: Impacts to ESS

##### 21.6.2.2.1 Landfall and Onshore Cable Corridor

146. One Entry Level Stewardship Scheme and one Entry Level plus Higher Level Stewardship Scheme fall within the proposed onshore development area.

147. Following construction, it is expected that all affected ESSs would be reinstated. Permanent infrastructure along the onshore cable corridor consists of a total of 36 jointing bays (each 45m$^2$ in area). However, it should be noted that jointing bays will be underground and only manhole covers will represent the surface infrastructure. These will be located adjacent to field boundaries where possible to limit disturbance. The operational impact comes in the form of potential access constraints due to schedule maintenance activities along the cable route.

148. On a receptor of medium sensitivity and an impact of low magnitude (due to only a maximum of 0.16% of regional resource being affected (on the proposed onshore development area)), the operational impact to ESS is considered to be **minor adverse**.

##### 21.6.2.2.2 Substation(s)

149. The land at the substation(s) is not on or adjacent to any land which is part of an ESS. Therefore, **no impact** is predicted on ESS due to the substation(s).

#### 21.6.2.3 Impact 3: Alterations to Land Drainage

##### 21.6.2.3.1 Landfall, Onshore Cable Corridor and Substation(s)

150. No impacts on drainage are expected to occur during the operational phase of the cable corridor or landfall, due to the reinstatement of all drainage post construction where possible.

151. All drainage affected during construction would be reinstated where possible and operational drainage requirements at the onshore substation and National Grid substation would be compliant with any flood risk assessment. The potential drainage requirements and strategy for minimising flood risk at the onshore substation and National Grid substation are discussed in ***Chapter 20 Water Resource and Flood Risk***. Therefore, there would be **no impact** during operation.

#### 21.6.2.4 Impact 4: Utilities

##### 21.6.2.4.1 Landfall, Onshore Cable Corridor and Substation(s)

152. The potential exists for maintenance activities (such as described in ***Chapter 6 Project Description***) to affect utilities if the location of maintenance coincides with a utility crossing, since these activities may require access to the buried cables. As described in ***section 21.6.1.5***, potentially affected utility providers would be contacted prior to maintenance works and any works would be carried out according to agreed methods. As works would be undertaken with the cooperation and agreement of utility providers **no impact** is predicted during operation.

#### 21.6.2.5 Impact 5: Impact to Common Access Land

##### 21.6.2.5.1 Landfall and Onshore Cable Corridor

153. The landfall and onshore cable corridor includes one area of common land and five areas of common land that border but are out with the proposed onshore development area.

154. The operational phase of the proposed East Anglia TWO project would have no operational access impact on the five areas of common land which are adjacent to the proposed onshore development area. Siting of the onshore infrastructure will most likely mean that there will also be no direct impact on the area of common land that falls within the proposed onshore development area, as the onshore cables will be underneath the area and it is not anticipated that any access closures will be required when undertaking routine operational and maintenance activities.

155. The sensitivity of common land is medium (***Table 21.8***) and the magnitude of the effect will be negligible due to there being only a temporary change that has no effect on usability, risk or value of the common land. Overall, the operational impact on common land is considered to be **negligible**.

##### 21.6.2.5.2 Substation(s)

156. No areas of common land have been identified within or adjacent to the substation(s) locations, therefore **no impacts** are predicted.

#### 21.6.2.6 Impact 6: EMFs

##### 21.6.2.6.1 Landfall and Onshore Cable Corridor and Substation(s)

157. High voltage cable systems generate electromagnetic fields (EMFs) during operation. The potential operational impacts of EMFs are discussed further and assessed in ***Chapter 27 Human Health.***

### 21.6.3 Potential Impacts during Decommissioning

158. No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left in situ. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst-case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase.

## 21.7 Cumulative Impacts

### 21.7.1 Cumulative Impact with proposed East Anglia ONE North Project

159. The East Anglia ONE North offshore windfarm project (the proposed East Anglia ONE North project) is also in the pre-application phase. The proposed East Anglia ONE North project will have a separate DCO application but is working to the same programme of submission as the proposed East Anglia TWO project. The two projects will share the same landfall and cable route and the two onshore substations will be co-located, the onshore substation location is shown in ***Figure 21.7,*** and feed into the same National Grid substation.

160. The proposed East Anglia TWO project CIA will therefore initially consider the cumulative impact with only the East Anglia ONE North project.

161. The CIA considers the proposed East Anglia TWO project and the proposed East Anglia ONE North project under two construction scenarios:

- Scenario 1 - the proposed East Anglia TWO project and proposed East Anglia ONE North project are built simultaneously; and
- Scenario 2 - the proposed East Anglia TWO project and the proposed East Anglia ONE North project are built with a construction gap.

162. The worst case (based on the assessment of these two construction scenarios) for each impact is then carried through to the wider CIA which considers other developments which are in close proximity to the proposed East Anglia TWO project (***section 21.7.2***). The operational phase impacts will be the same irrespective of the construction scenario. For a more detailed description of the assessment scenarios please refer to ***Chapter 5 EIA Methodology***.

163. Full assessment of scenario 1 and scenario 2 can be found in ***Appendix 21.1***. This assessment found that scenario 2 represented the worst case impacts for land use and agriculture. A summary of those impacts can be found in ***Table 21.16***.

164. ***Table 21.16*** shows that under scenario 2 there are resulting potentially significant impacts on land taken out of existing use, ESS and land drainage. These significant impacts arise from the increased expected construction duration associated with scenario 2.

165. Although there is the potential for these significant impacts, the Applicant will commit to reinstatement plans which will ensure that land is returned to its original use as far as practicable following construction. Therefore, these measures will ensure that there are no long term significant impacts.

**Table 21.16 Summary of Potential Impacts Identified for Land Use under Construction Scenario 2**

| Potential Impact | Receptor | Sensitivity | Magnitude | Significance | Examples of Potential Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| **Construction** | | | | | | |
| Impact 1: Land taken out of Existing Use | Landfall | Medium | Medium | Moderate Adverse | n/a | **Moderate Adverse** |
| | Onshore Cable Corridor | Medium | Medium | Moderate Adverse | n/a | **Moderate Adverse** |
| Impact 2: Impact to ESS | Landfall and Onshore Cable Corridor | Medium | Medium | Moderate Adverse | Consultation with Affected Landowners | **Moderate Adverse** |
| Impact 3: Impact to Land Drainage | Landfall, Onshore cable Corridor, onshore substation and National Grid substation locations | High | Medium | Major Adverse | Use of a specialist drainage contractor. Development of a Drainage Remediation Plan. | **Moderate Adverse** |
| Impact 4: Degradation to Natural Resource | Landfall, Onshore cable corridor, onshore substation and National Grid substation locations | High | Medium | Major Adverse | Private agreements with landowners regarding any measures required in relation to crop loss incurred as an indirect consequence of degradation of the soil resource | **Minor Adverse** |
| Impact 5: Impact to Utilities | Landfall, Onshore cable Corridor, onshore substation and National Grid substation locations | n/a | None | No Impact | n/a | **No Impact** |
| Impact 6: Impact | Landfall and Onshore | Medium | Low | Minor Adverse | n/a | **Minor Adverse** |

| Potential Impact | Receptor | Sensitivity | Magnitude | Significance | Examples of Potential Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| to Common Land | Cable Corridor | | | | | |
| | Onshore substation and National Grid substation locations | n/a | None | No Impact | n/a | **No Impact** |
| **Cumulative Operational Impacts with the proposed East Anglia ONE North project** | | | | | | |
| Cumulative operational impacts on land use and agriculture will be the same as operational impacts for the proposed East Anglia TWO project alone. See ***Table 21.21*** for a summary of those operational impacts for the proposed East Anglia TWO project alone. | | | | | | |
| **Decommissioning** | | | | | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst-case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | | | | | |

### 21.7.2 Cumulative Impact Assessment with Other Developments

166. The assessment of cumulative impacts has been undertaken here as a two stage process. Firstly, all impacts considered in ***section 21.6*** have been assessed for the potential to act cumulatively with other projects. Potential cumulative impacts are set out in ***Table 21.17.***

**Table 21.17 Potential Cumulative Impacts**

| Impact | Potential for Cumulative Impact | Rationale |
|---|---|---|
| **Construction** | | |
| Land taken out of Existing Use | Yes | Cumulative direct impacts arising from two or more projects are possible. 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 (e.g. loss of earnings from more than one project taking the same parcels of land out of use). Changes to ALC grades of land may also occur as an indirect impact. |
| ESS | Yes | Cumulative direct impacts arising from two or more projects are possible. Impacts may occur where project boundaries overlap spatially or temporally on the same landowner/occupier's land. Such impacts have the potential to affect land under ESS (e.g. loss of earnings from ESS more than one project taking the same parcels of land out of use). |
| Land Drainage | Yes | Cumulative direct impacts arising from two or more projects are possible given the level of uncertainty regarding the presence and location of drainage systems. Impacts may occur to individual field drains in any area of over-lap or those with an extent which intersects two or more proposed development boundaries (where groundworks are anticipated). |
| Soils | Yes | Cumulative direct impacts arising from two or more projects are possible. 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 (e.g. loss of earnings from more than one project taking the same parcels of land out of use). Changes to ALC grades of land may also occur as an indirect impact. |
| Utilities | No | Potentially affected utility providers would be contacted and the location of existing services would be identified |

| Impact | Potential for Cumulative Impact | Rationale |
|---|---|---|
| | | prior to works to ensure there would be no impact. |
| Common Land | Yes | Cumulative direct impacts arising from two or more projects are possible. Impacts may occur where project boundaries overlap spatially or temporally on the same area of common land or over the access to common land. |
| **Operation** | | |
| Permanent Change to Land Use | Yes | Cumulative impacts may occur at a county scale where impacts to productivity affect the wider agriculture industry. |
| ESS | No | where practicable, all ESSs, and the accesses to these parcels of land, will be reinstated following the construction phase. Therefore, no cumulative impacts are predicted during operation. |
| Land Drainage | No | Due to the reinstatement of all drainage post construction, where practicable, and adherence with the flood risk assessment, no cumulative impacts are predicted during operation. |
| Utilities | No | Potentially affected utility providers would be contacted and the location of existing services would be identified prior to works to ensure there would be no impact. Therefore, no cumulative impacts are predicted during operation. |
| Common Land | No | All common land, and the accesses to these parcels of land, will be reinstated following the construction phase. |
| **Decommissioning** | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst-case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | |

167. The second stage of the CIA is an assessment of whether there is spatial overlap between the extent of potential effects of the onshore infrastructure and

the potential effects of other projects scoped into the CIA upon the same receptors. To identify whether this may occur, the potential nature and extent of effects arising from all projects scoped into the CIA have been identified and any overlaps between these and the effects identified in ***section 21.6*** Where there is an overlap, an assessment of the cumulative magnitude of effect is provided.

168. Following a review of projects which have the potential to overlap temporally or spatially with the proposed East Anglia TWO project, one development has been scoped into the CIA.

169. ***Table 21.18*** provides detail regarding the project.

170. The full list of projects for consideration will be updated following PEIR and agreed in consultation with local authorities. The remainder of the section details the nature of the cumulative impacts against all those receptors scoped in for cumulative assessment.

**Table 21.18 Summary of Projects Considered for the CIA in Relation to Land Use**

| Project | Status | Development period | [3]Distance from East Anglia TWO proposed onshore development area (km) | Project definition | Level of information available | Included in CIA | Rationale |
|---|---|---|---|---|---|---|---|
| Sizewell C New Nuclear Power Station | Scoping Opinion Adopted by SoS on 02.06.2014 | Uncertain | 0.49km | Full Scoping Report Available: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-000103-Sizewell%20C%20EIA%20Scoping%20Report_Main%20text.pdf | Tier 5[4] | No | Project boundary unlikely to overlap with the proposed onshore development area. No cumulative impacts are anticipated. |

[3] Shortest distance between the considered project and East Anglia TWO– unless specified otherwise
[4] Based on criteria outlined in ***section 5.7.2*** of ***Chapter 5 EIA Methodology***

171. At this stage, the construction and operational footprint of the Sizewell C New Nuclear Power Station is unknown however there is unlikely to be any overlap, and in the instance that there is an overlap it is likely to be small. The Sizewell C New Nuclear Power Station is subject to EIA, and is therefore anticipated to adopt mitigation strategies which will seek to avoid, reduce or offset their impacts. Therefore, the Sizewell C New Nuclear Power Station is not being taken forward into the CIA at the PEI stage for land use and agriculture. This will be considered again for the ES should more information regarding the Sizewell C New Nuclear Power Station project become available.

172. Therefore, the impacts will not change from those presented in ***Table 21.16***.

## 21.8 Inter-relationships

173. Inter-relationships address situations where a number of parameters, or 'sources', interact to affect a single receptor. Those sources that are considered to interact with receptors identified in this chapter are listed in ***Table 21.19.***

**Table 21.19 Inter-relationships with Land Use and Agriculture**

| Inter-relationship all Phases and Linked Chapter | Section where Addressed | Rationale |
|---|---|---|
| ***Chapter 18 Ground Condition and Contamination*** | ***Sections 21.5, 21.6, 21.7*** | Changes in soil quality could impact on ground conditions and potential contaminated land. |
| ***Chapter 20 Water Resources and Flood Risk*** | ***Sections 21.5, 21.6, 21.7*** | Impacts on land drainage may have the potential to affect water resources. |
| ***Chapter 22 Onshore Ecology*** | ***Sections 21.5, 21.6, 21.7*** | Changes to land uses could impact on ecological receptors for example the removal of trees or hedgerows or the loss of agricultural land. |
| ***Chapter 24 Archaeology and Cultural Heritage*** | ***Sections 21.5, 21.6, 21.7*** | Potential impacts on land use could affect any buried archaeology present. |
| ***Chapter 26 Traffic and Transport*** | ***Sections 21.5, 21.6, 21.7*** | Changes in land uses e.g. at roads or paths could affect traffic and transport. |
| ***Chapter 29 Landscape and Visual Impact*** | ***Sections 21.5, 21.6, 21.7*** | Changes to land uses could impact on the landscape and visual amenity. |
| ***Chapter 30 Socio-Economics, Recreation and Tourism*** | ***Sections 21.5, 21.6, 21.7*** | Changes in the agricultural industry may affect the socio-economics of the region. |

## 21.9 Interactions

174. The impacts identified and assessed in this chapter have the potential to interact with each other, which could give rise to synergistic impacts as a result of that interaction. For clarity, the areas of interaction between impacts are presented in ***Table 21.20***, along with an indication as to whether the interaction may give rise to synergistic impacts.

**Table 21.20 Interactions between Impacts**

| **Potential Interactions between Impacts**<br><br>**Construction Stage Impacts** | | | | | | |
|---|---|---|---|---|---|---|
| | **Land taken out of Existing Use** | **Impact to ESS** | **Impact to Land Drainage** | **Degradation to Natural Resource** | **Impact to Utilities** | **Impact to Common Land** |
| Land taken out of Existing Use | - | Yes | Yes | Yes | No | Yes |
| Impact to ESS | Yes | - | Yes | Yes | No | Yes |
| Impact to Land Drainage | Yes | No | - | Yes | No | No |
| Degradation to Natural Resource | Yes | Yes | Yes | - | No | Yes |
| Impact to Utilities | No | No | No | No | - | No |
| Impact to Common Land | Yes | Yes | Yes | Yes | No | - |
| **Operation Stage Impacts** | | | | | | |
| | **Permanent Change to Land Use** | **Impact to ESS** | | **Alterations to Land Drainage** | **Impact to Utilities** | |
| Permanent Change to Land Use | - | No | | Yes | No | |

| Potential Interactions between Impacts | | | | |
|---|---|---|---|---|
| Impact to ESS | Yes | - | No | No |
| Alterations to Land Drainage | Yes | No | - | No |
| Impact to Utilities | No | No | No | - |
| **Decommissioning Stage Impacts** | | | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst-case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | | | |

## 21.10 Summary

175. This section summarises the main findings from the impact assessment. Discussion is given below and a summary is presented in ***Table 21.21.***

**Table 21.21 Summary of Potential Impacts Identified for Land Use and Agriculture**

| Potential Impact | Receptor | Sensitivity | Magnitude | Significance | Examples of Potential Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| **Construction** | | | | | | |
| Impact 1: Land taken out of Existing Use | Landfall | Medium | Low | Minor Adverse | n/a | **Minor Adverse** |
| | Onshore Cable Corridor | Medium | Low | Minor Adverse | n/a | **Minor Adverse** |
| Impact 2: Impact to ESS | Landfall and Onshore Cable Corridor | Medium | Negligible | Negligible | Consultation with Affected Landowners | **Negligible** |
| Impact 3: Impact to Land Drainage | Landfall, Onshore cable Corridor, onshore substation and National Grid substation locations | High | Low | Moderate Adverse | Use of a specialist drainage contractor. Development of a Drainage Remediation Plan. | **Minor adverse** |
| Impact 4: Degradation to Natural Resource | Landfall, Onshore cable corridor, onshore substation and National Grid substation locations | High | Medium | Major Adverse | Private agreements with landowners regarding any measures required in relation to crop loss incurred as an indirect consequence of degradation of the soil resource. | **Minor Adverse** |
| Impact 5: Impact to Utilities | Landfall, Onshore cable Corridor, onshore substation and National Grid substation locations | n/a | None | No Impact | n/a | **No Impact** |
| Impact 6: Impact | Landfall and Onshore Cable Corridor | Medium | Low | Minor Adverse | n/a | **Minor Adverse** |

| Potential Impact | Receptor | Sensitivity | Magnitude | Significance | Examples of Potential Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| to Common Land | Onshore substation and National Grid substation locations | n/a | None | No Impact | n/a | **No Impact** |
| **Operation** | | | | | | |
| Impact 1: Permanent Change to Land Use | Landfall and Onshore Cable Corridor | Medium | Low | Negligible | n/a | **Negligible** |
| | Onshore substation and National Grid substation locations | High | Low | Minor Adverse | n/a | **Minor Adverse** |
| Impact 2: Impact to ESS | Landfall and Onshore Cable Corridor | Medium | Negligible | Minor Adverse | n/a | **Minor Adverse** |
| | Onshore substation and National Grid substation locations | None | None | No Impact | n/a | **No Impact** |
| Impact 3: Alterations to Land Drainage | Landfall, Onshore cable Corridor, onshore substation and National Grid substation locations | High | None | No Impact | n/a | **No Impact** |
| Impact 4: Impact to Utilities | Landfall, Onshore cable Corridor, onshore substation and National Grid substation locations | High | None | No Impact | n/a | **No Impact** |
| Impact 5: Impact to Common Land | Landfall and Onshore Cable Corridor | Medium | Negligible | Negligible | n/a | **Negligible** |
| | Onshore substation and National Grid | n/a | None | No Impact | n/a | **No Impact** |

| Potential Impact | Receptor | Sensitivity | Magnitude | Significance | Examples of Potential Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| | substation locations | | | | | |
| Impact 6: EMFs | N/A, refer to ***Chapter 27 Human Health*** | | | | | |
| **Decommissioning** | | | | | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst-case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | | | | | |
| **Cumulative Impacts with Other Developments** | | | | | | |
| No cumulative impacts anticipated. | | | | | | |

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