



The Sizewell C Project

6.3 Volume 2 Main Development Site Chapter 17 Soils and Agriculture

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17. Soils and Agriculture

17.1 Introduction

17.1.1 This chapter of **Volume 2** of the **Environmental Statement (ES)** presents an assessment of the soils and agriculture effects arising from the construction and operation of the main development site (referred to throughout this volume as 'the proposed development'). This includes an assessment of potential impacts, the significance of effects, the requirements for mitigation and the residual effects.

17.1.2 Detailed descriptions of the main development site (referred to throughout this volume as the 'site'), the proposed development and the different phases of development are provided in **Chapters 1 to 4** of this volume of the **ES**. A description of the anticipated activities for the decommissioning of the Sizewell C power station, including a summary of the types of environmental effects likely to occur is provided in **Chapter 5** of this volume. A glossary of terms and list of abbreviations used in this chapter is provided in **Volume 1, Appendix 1A** of the **ES**.

17.1.3 This assessment has been informed by data from other assessments as follows:

- **Chapter 11:** Noise and vibration;
- **Chapter 12:** Air quality;
- **Chapter 14:** Terrestrial ecology and ornithology;
- **Chapter 18:** Geology and land quality; and
- **Chapter 19:** Groundwater and surface water.

17.1.4 This assessment has been informed by data presented in the following technical appendices:

- **Appendix 17A:** Main Development Site Agricultural Land Classification (ALC) Report; and
- **Appendix 17B:** Off-site developments soils and agriculture assessment.
- **Appendix 17C:** Outline Soil Management Plan.

17.1.5 This assessment relates to the following key factors:

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- the soil types and related ALC¹ grades likely to be affected by the proposed development;
- the type of farm enterprises and farming/land management practices present, including any agri-environment schemes²; and
- the possible presence of crop/soil/animal diseases or noxious weeds, and the risk of spreading such disease/weeds.

17.1.6 The objectives of the assessment are to:

- characterise the baseline environmental conditions for soils, land-use and agriculture within the study area;
- identify all soils, land-use and agricultural receptors within and adjacent to the site that may be affected by the construction and operation of the proposed development;
- assess the likely significant effects of the proposed development on soil, land-use and agriculture, taking account of temporary and permanent land-use requirements and site restoration;
- specify measures, if appropriate, to mitigate potential significant adverse effects on soil, land-use and agriculture; and
- determine the residual effects remaining after additional mitigation.

17.1.7 A standalone ES was prepared for the Sizewell B relocated facilities works for submission with the hybrid planning application under the Town and Country Planning Act 1990 (East Suffolk Council application ref. DC/19/1637/FUL). The Sizewell B relocated facilities ES (included in **Volume 1, Appendix 2A** of the **ES**) scoped out the assessment of effects on soils and agriculture, as no potential for likely significant effects from Sizewell B relocated facilities proposals on their own were identified. The assessment presented within this chapter also accounts for the effects of the Sizewell B relocated facilities works, as it forms part of the Sizewell C Project.

¹ Agricultural land in England and Wales is graded between 1 and 5, depending on the extent to which physical or chemical characteristics impose long-term limitations on agricultural use. Grade 1 land is excellent quality agricultural land with very minor or no limitations to agricultural use, and Grade 5 is very poor quality land, with severe limitations due to adverse soil characteristics, relief, climate or a combination of these. Grade 3 land is subdivided into Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). Grades 1, 2 and 3a are defined as best and most versatile (BMV) land.

² Agri-environment schemes are land management practices which protect and enhance the environment, for example planting field margins with food sources for insects and reduced management of hedgerows to provide more habitat for farmland birds.

17.2 Legislation, policy and guidance

17.2.1 **Volume 1, Appendix 6M** of the **ES** identifies and describes legislation, policy and guidance of relevance to the assessment of the potential agriculture and soil impacts associated with the Sizewell C Project across all ES volumes.

17.2.2 This section provides an overview of the specific legislation, policy and guidance of relevance to the soils and agriculture assessment of main development site.

a) International

17.2.3 There is no international legislation or policies that are deemed relevant to the assessment of effects on soils and agriculture for this site.

b) National

17.2.4 As stated in **Volume 1, Chapter 3** of the **ES**, the Overarching National Policy Statement (NPS) for Energy (NPS EN-1) (17.1) when combined with the NPS for Nuclear Power Generation (NPS EN-6) (17.2) provides the primary basis for decisions on applications for nuclear power generation developments. A summary of the relevant NPS EN-1 and EN-6 requirements, together with consideration of how these requirements have been taken into account in soils and agricultural assessment is provided in **Volume 1, Appendix 6M** of the **ES**.

17.2.5 In summary, these policies require the impacts on soils and best and most versatile (BMV) land to be considered in the assessment, including seeking to minimise impacts on BMV land and use areas of poorer quality land in preference.

17.2.6 Other national policies of relevance to the assessment include:

- The National Planning Policy Framework – this requires planning policies and decisions to recognise the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland (17.3).
- Planning Practice Guidance – this refers to agricultural land and the requirement for consultation with Natural England where there is an impact on BMV land (17.4).
- Government’s 25 Year Environment Plan – this includes plans to tackle problems of soil degradation and to enhance our natural capital (which includes soils), with an ambition that by 2030 all of England’s soils should be managed sustainably (17.5).

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- A Strategy for England; Safeguarding Our Soils – this sets out the Government’s aim to protect agricultural soils, particularly where BMV land is present (17.6).

c) **Regional**

17.2.7 No regional policies are deemed relevant to the assessment of effects on soils and agriculture for this site.

d) **Local**

17.2.8 Local policies of relevance to the soils and agricultural assessment include:

- Suffolk Coastal District Council Local Plan Core Strategy and Development Management Polices (17.7) – this makes reference to, where possible, preserving prime agricultural land for food production; and
- Suffolk Coastal District Council Final Draft Local Plan – this highlights the presence of BMV land as a key issue (17.8).

17.2.9 The requirements of these, as relevant to the soils and agricultural assessment are described in **Volume 1, Appendix 6M** of the **ES**.

e) **Guidance**

17.2.10 This assessment has been undertaken in accordance with the following guidance documents:

- Natural England Technical Information Note 049 (2012) (17.9);
- Defra Construction Code of Practice for the sustainable re-use of soils on construction sites (17.10);
- Good Practice Guide for Handling Soils (MAFF, 2000) (17.11); and
- British Standard Specification for Topsoil and Requirements for Use (BS3882:2015) (17.12).

17.3 Methodologya) **Scope of the assessment**

17.3.1 The generic Environmental Impact Assessment (EIA) methodology is detailed in **Volume 1, Chapter 6** of the **ES**.

17.3.2 The full method of assessment for soils and agriculture that has been applied for the Sizewell C Project is included in **Volume 1, Appendix 6M** of the **ES**.

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- 17.3.3 This section provides specific details of the soils and agriculture methodology applied to the assessment of the proposed development.
- 17.3.4 The scope of assessment considers the impacts of the construction and operation of the proposed development. Where the works proposed have the potential for likely significant effects, these have been assessed in further detail.
- 17.3.5 The scope of this assessment has been established through a formal EIA scoping process undertaken with the Planning Inspectorate. A request for an EIA scoping opinion was initially issued to the Planning Inspectorate in 2014, with an updated request issued in 2019, see **Volume 1, Appendix 6A** of the **ES**.
- 17.3.6 Comments raised in the EIA scoping opinions received in 2014 and 2019 have been taken into account in the development of the assessment methodology. These are detailed in **Volume 1, Appendices 6A to 6C** of the **ES**.

b) Consultation

- 17.3.7 The scope of the assessment has been informed by specific consultation and engagement with statutory consultees throughout the design and assessment process. This has been undertaken on a project-wide basis and details are included in **Volume 1, Appendix 6M** of the **ES**. This includes consultation on specific aspects of the survey approach for this site.

c) Study area

- 17.3.8 The study area for the soils and agriculture assessment covers the land required for construction and operation of the proposed development. It also includes areas required for off-site mitigation. The location and extent of the site are shown in **Chapter 1** of this volume.
- 17.3.9 The site covers approximately 371.7 hectare (ha) (excluding the marine elements and off-site developments) and is located on the Suffolk coast to the north and north-east of Leiston. Approximately 213.9ha of the site is agricultural land. The remainder comprises woodland, roads, properties and the existing power station complex (Sizewell A and B).
- 17.3.10 The terrestrial part of the site has been split into four areas as follows, for the purposes of describing the baseline in order to provide greater clarity:
- Main platform (also referred to as the main construction area);
 - Sizewell B relocated facilities and National Grid land;
 - Temporary construction area; and

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- Land east of Eastlands Industrial Estate (LEEIE).

17.3.11 In addition, the assessment of impacts on farm viability takes account of the extent of each affected land holding (i.e. so the impact can be considered in the context of the holding).

d) [Assessment scenarios](#)

17.3.12 The assessment of effects on soils and agriculture includes the assessment of both the construction and operational phases of the proposed development, rather than specific assessment years.

e) [Assessment criteria](#)

17.3.13 As described in **Volume 1, Chapter 6** of the **ES**, the EIA methodology considers whether impacts of the proposed development would have an effect on any resources or receptors. Assessments broadly consider the value or sensitivity of resources and receptors that could be affected and magnitude of impacts in order to classify effects.

17.3.14 A detailed description of the assessment methodology used to assess the potential effects on soils and agriculture for the proposed development is provided in **Volume 1, Appendix 6M** of the **ES**. A summary of the assessment criteria used in this assessment is presented in the following sub-sections.

i. [Sensitivity](#)

17.3.15 The approach to assigning levels of sensitivity to receptors is summarised in **Table 17.1**.

Table 17.1: Assessment of the value or sensitivity of receptors for soils and agriculture

Value and/or Sensitivity	Description
High	<ul style="list-style-type: none"> • Grade 1, 2 and 3a land (i.e. best and most versatile (BMV) land); • Irrigated agriculture; • Stock animals; • Higher level agri-environment schemes; • Soils with low or no wetness limitation affecting workability (wetness class I or II), where drought is not also a limitation; and • Soils with a high susceptibility to structural damage and soil erosion throughout the year, including heavily textured, poorly structured soils.

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Value and/or Sensitivity	Description
Medium	<ul style="list-style-type: none"> • Grade 3b land; • Non-irrigated agriculture; • Entry-level agri-environment and Woodland Grant schemes; • Soils with low wetness limitation affecting workability (wetness class II), where drought is not also a limitation; and • Soils with some seasonal susceptibility to structural damage and soil erosion.
Low	<ul style="list-style-type: none"> • Grade 4 land; • Arable or grassland areas; • Soils with moderate wetness limitation affecting workability (wetness class III or IV); and • Soils with medium to coarse textures and some resistance to structural damage for most of the year.
Very Low.	<ul style="list-style-type: none"> • Grade 5 land; • Soils with high wetness limitation affecting workability (wetness class V or VI); • Soils in which susceptibility to drought is a limitation to crop growth; and • Course textured and stony soils with little potential for structural damage.

ii. Magnitude

17.3.16 The magnitude of impact is based on the consequences the proposed development would have upon soils and agricultural receptors. There is no published guidance on thresholds for assessing what scale of loss should be regarded as significant, but the presence of BMV land is a key factor in the consideration of the sustainability of development proposals as set out in the NPPF (Ref. 17.3). The criteria for the assessment of magnitude are shown in **Table 17.2**.

Table 17.2: Assessment of magnitude of impact on soils and agriculture

Magnitude	Criteria
High	<p>Permanent or long-term loss or degradation of over 50ha of BMV land, or entire regional resource of BMV land (ALC Grades 1, 2, 3a).</p> <p>Loss of more than 20% of farmed land associated with an agricultural farm holding.</p> <p>Permanent loss of entire area of land under agri-environment or Woodland Grant scheme.</p> <p>No access possible to severed land.</p> <p>Existing land-use across land holding would not be able to continue.</p>

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Magnitude	Criteria
Medium	<p>Permanent or long-term loss or degradation of 20–50ha of BMV land, or large proportion of regional resource of BMV land.</p> <p>Loss of more than 10–20% of farmed land associated with an agricultural farm holding.</p> <p>Long-term, reversible, loss of entire area or majority of land under agri-environment or Woodland Grant scheme.</p> <p>Access possible to severed land via the public highway.</p> <p>Existing land-use across land holding would be able to continue but with major changes such as loss of yield, additional land management or increased use of fertilisers and herbicides.</p>
Low	<p>Permanent or long-term loss or degradation of 10–20ha of BMV land, or small proportion of regional resource of BMV land.</p> <p>Loss of more than 5–10% of farmed land associated with an agricultural farm holding.</p> <p>Short- to medium-term reversible loss, or permanent loss of small areas, of land area under agri-environment or Woodland Grant scheme.</p> <p>Access possible to severed land via private ways.</p> <p>Existing land-use across land holding would be able to continue but with some changes such as loss of yield, additional land management or increased use of fertilisers and herbicides.</p>
Very Low	<p>Permanent or long-term loss or degradation of <10ha of BMV land.</p> <p>Loss of less than 5% of farmed land associated with an agricultural farm holding.</p> <p>No severance.</p> <p>Short-term impacts to receptors with no impact on integrity. No material changes to existing land-use.</p>

17.3.17 For the purposes of this assessment, long-term is considered to include the entire timeframe for the construction of the proposed development.

iii. Effect definitions

17.3.18 The definitions of effect for agriculture and soils are shown in **Table 17.3**.

Table 17.3: Classification of effects

		Value / Sensitivity of Receptor			
		Very Low	Low	Medium	High
Magnitude	Very Low	Negligible	Negligible	Minor	Minor
	Low	Negligible	Minor	Minor	Moderate
	Medium	Minor	Minor	Moderate	Major

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		Value / Sensitivity of Receptor			
	High	Minor	Moderate	Major	Major

17.3.19 Following the classification of an effect as presented in **Table 17.3**, a clear statement is made as to whether the effect is 'significant' or 'not significant'. As a general rule, major and moderate effects are considered to be significant and minor and negligible effects are considered to be not significant. However, professional judgement is also applied where appropriate.

f) **Assessment methodology**

17.3.20 **Volume 1, Appendix 6M** of the **ES**, sets out the detailed methodology followed. A summary of the assessment criteria used in this assessment is presented in the following sub-sections.

i. **Establishing the baseline**

17.3.21 The principal agricultural and soil related resources are characterised by the quality of the agricultural land (i.e. the land grade according to the ALC system) and type of land use (e.g. arable land, presence of livestock etc.) including any diversified activities on farms (e.g. play barns).

17.3.22 ALC surveys were undertaken, in accordance with published guidelines (Ref. 17.13). A detailed ALC survey was undertaken in August and October 2016 and June 2019, examining soil properties to a depth of up to 1.2 metres (m) below ground level, see **Appendix 17A**.

17.3.23 Soil physical characteristics were recorded so that factors such as soil texture, structure, depth and stoniness could be assessed in terms of any limitation they pose to agricultural productivity. Site characteristics, such as micro-relief (topographical changes over short distances) and flood risk, and climate were also assessed in terms of potential limitations they may pose to agricultural productivity.

17.3.24 In addition, the landowners were interviewed in 2019. A total of seven agricultural land holdings are affected at the main development site. Interviews were conducted in 2016 and 2019. The question pro-forma used in the interviews is presented in **Volume 1, Appendix 6M** of the **ES**.

ii. **Assessment**

17.3.25 As set out above, the assessment of effects on soils and agriculture includes the following steps:

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- establishing the baseline environmental conditions for soils, land-use and agriculture within the study area and identifying relevant receptors;
- assessing the likely significant effects of the proposed development on soil, land-use and agriculture, taking account of temporary and permanent land-use requirements and site restoration;
- specifying measures, where appropriate, to mitigate potential significant adverse effects on soil, land-use and agriculture; and
- determining the residual effects remaining after additional mitigation.

g) Assumptions and limitations

- 17.3.26** An area of 14.4ha (3.87% of the total site area) was not surveyed. This relates to land that was brought into the site boundary following completion of the detailed surveys (the change in site boundary also explains why detailed ALC survey data is shown for land which now lies outside the site boundary). These areas are shown on **Figure 17.3**.
- 17.3.27** Given the proportion of land surveyed to a detailed level for the whole site and the extent of BMV land confirmed through these surveys, it is considered that the available information is sufficient to inform the assessment.
- 17.3.28** ALC surveys have not been undertaken on land associated with the proposed sports facilities at Leiston, off-site fen meadow compensation sites south of Benhall and east of Halesworth and the marsh harrier habitat improvement area west of Westleton. As detailed in **Appendix 17B**, the proposed sports facilities does not comprise of land currently in agricultural use and the fen meadow compensation sites (short-term impact with land returned to agricultural use) have therefore been screened out from further assessment.
- 17.3.29** The marsh harrier habitat improvement area west of Westleton, if required, has been screened in as the land required would be taken out of arable production resulting in potential temporary effects on the land holding (the soils would not be disturbed). As such, it was considered that the assessment for these areas could be undertaken based on published information. Where the provisional mapping shows land to be Grade 3, it has been assumed there is the potential for BMV land to be present (i.e. land Grades 1, 2 and 3a). This assessment is presented in **Appendix 17B**.
- 17.3.30** Information on land use is based on information publicly available and as provided by landowners. Where it has not been possible to interview the landowner, the assessment is based only on publicly available information (for example from historical aerial photographs).

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17.3.31 A large proportion of the land which forms the site is within the ownership of EDF Energy and, is in part, occupied by third parties under short-term agreements. Due to the Sizewell C Project, these agreements are short term in nature and, as a result, the assessment of effects on these occupiers has been scoped out as it is understood the farming businesses would not be dependent on having these agreements in place.

17.3.32 The impact on land within EDF Energy’s ownership has been determined based on the current agricultural use. However, these changes are not considered to result in a significant effect as the owners of these landholdings are not farming businesses and the viability of these entities is not dependent on the revenue created through agriculture.

17.4 Baseline environment

17.4.1 This section presents a description of the baseline environmental characteristics within the footprint of the proposed development. Further detail of the agricultural land quality at the site is presented in **Appendix 17A**.

17.4.2 Baseline information for off-site development areas, including the off-site sports facilities at Leiston, fen meadow compensation sites south of Benhall and east of Halesworth and, if required, the marsh harrier habitat improvement area (Westleton), is set out in **Appendix 17B**.

a) Current baseline

i. Geology

17.4.3 The site is underlain by bedrock geology within the Crag Group (quaternary sand). This is overlain with drift deposits of Lowestoft Formation within LEEIE and the central and eastern areas of the temporary construction area comprising sand and gravel (17.14), with two main types of soil parent materials present. Beach deposits, including sand dunes and marine shingle and tidal flat deposits, comprising clay and silt, are present along the narrow eastern coastal strip approximately 100–200m wide within the main construction area and the temporary construction area.

17.4.4 Inland, soils are formed in glacio-fluvial sands, either on relatively low river terraces or on gently sloping hill tops and ridges. To the north of the existing power station and infilling the low-lying river valley immediately to the west, are deep peat and clay deposits developed as a result of marine incursions during Holocene times. To the north of the site, these deposits form the Minsmere wetlands. Immediately west of the Sizewell B power station are the deep peat deposits of the Sizewell Marshes. Made ground has been recorded within both the main construction area and temporary construction area.

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- 17.4.5 Further description of the geology of the site is provided in **Chapter 18** of this volume.
- ii. **Topography and flood risk**
- 17.4.6 The land within the site boundary is generally low lying at between sea level and approximately 15m AOD. Gradient and microtopography do not limit ALC grade within the site based on the ALC criteria (Ref. 17.13).
- 17.4.7 The Leiston Drain and Sizewell Drain are associated with the Sizewell Marshes Site of Special Scientific Interest (SSSI) which flow through to the Minsmere Sluice to the north of the site.
- 17.4.8 The low-lying land associated with Sizewell Marshes SSSI is defined as being within the Environment Agency Flood Zones 2 and 3 with a high probability of fluvial or tidal flooding. Further information on flood risk associated with the site is provided in **Chapter 19** of this volume.
- 17.4.9 Where this land is under agricultural production the use will reflect the limitations posed by flood risk and ground wetness. Where the land is slightly elevated and underlain by the glaciofluvial sands, flood risk does not limit the ALC grade.
- iii. **Climate**
- 17.4.10 The main parameters used in the assessment of an overall climatic limitation are presented in **Appendix 17A**. These specifically refer to annual average rainfall as a measure of overall wetness, and accumulated temperature over the growing season as a measure of the warmth in the growing season. The site is considered to have both relatively low rainfall, and a long growing season, and thus climate does not impose an overall limitation on ALC grade at this site.
- 17.4.11 Climate has an important influence on the interactive limitations of soil wetness and soil droughtiness. The relatively low rainfall, and long growing season, will act to decrease the severity of any potential soil wetness limitation (i.e. reducing the potential for waterlogging to occur which may restrict plant rooting and the ability of the land to be managed). However, these attributes increase the severity of any potential soil droughtiness limitation (i.e. reduced availability of water for plant uptake).

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iv. Soil types

- 17.4.12 The distribution of soil types across the site is shown on **Figure 17.1**.
- 17.4.13 The main types of soils developed on coastal beach deposits are those belonging to the Sandwich Soil Association³. These are the soils associated with the coastal strip within the main platform area. These are described (Ref. 17.15) as being both calcareous and non-calcareous sands. East of Sizewell B power station, these soils are deep, developed on a series of sand dunes and slacks, with calcareous shelly lenses. In these areas, marram grass dominates, and soils are easily eroded. These ‘raw’ soils, with little or no organic matter or clay, are not suitable for agriculture.
- 17.4.14 The main types of soils inland from the power station complex developed on glacio-fluvial sands are those belonging to the Newport 4 Soil Association. These are the soils associated with the Sizewell B relocated facilities and National Grid land, the majority of the temporary construction area and the eastern part of the LEEIE. These are described as being deep, well drained brown sandy soils which are often slightly acidic. Soils around Sizewell power station complex also comprise deep loamy sands, frequently with some stony layers at depth. Subsoils are loose and sandy with little cohesion. These permeable sandy soils are generally Wetness Class 1 and described as droughty. They are naturally acidic and liming is required to enable a range of crops to be grown.
- 17.4.15 Along the western extent of the site (to the west of Upper Abbey Farm) and across the majority of the LEEIE the soils comprise deep well drained fine loamy over clayey soils belonging to the Melford Soil Association.
- 17.4.16 The soils west and north of Sizewell B power station, in the low-lying areas and developed on deep peat and clay deposits, are those belonging to the Mendham association. These are described as being deep peaty and clayey soils which, on oxidation of the sulphates they contain, can become very acidic. These soils are very slowly permeable and require drainage for any kind of agricultural use.

v. Agricultural land quality and classification

- 17.4.17 Published ALC maps (Ref. 17.15) show the land within the site boundary to comprise a mix of Grades 3 and 4, as well as non-agricultural land (see **Figure 17.2**). These maps are published at a scale of 1:250 000 and are

³ Soil Associations represent a group of soil series (soil types) which are typically found together associated in the landscape

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generally considered to be of value for strategic land use planning purposes and not site-specific assessments, although they do provide a guide as to the likely land grades. It should be noted also that these maps do not distinguish between the Sub-grades 3a and 3b.

- 17.4.18 Since the publication of the Provisional ALC, certain areas of the country have been surveyed in greater detail, and some detailed survey information is available for the site. This is shown on **Figure 17.3** as graded land without survey points. However, for the fields to the east of Upper Abbey farm this data was based on semi-detailed survey information (i.e. one sample point per 2ha rather than a detailed survey at a density of one sample point per 1ha (Ref. 17.16)). This data was critically reviewed to assess its applicability to the full assessment of impacts on agricultural land.
- 17.4.19 This review identified that the topsoil and subsoil was identified in the semi-detailed survey as 'loamy sand', but for ALC purposes, there is a significant difference between Loamy Fine Sand, Loamy Medium Sand and Loamy Coarse Sand.
- 17.4.20 Therefore, more information was required regarding the texture of loamy sand and sand (i.e. whether it is fine, medium or coarse – as specified in **Appendix 2** 'Soil Texture' of the ALC Guidelines (Ref. 17.13). As such, samples were collected from these fields for laboratory analysis of topsoil and subsoil to characterise particle size distribution, i.e. whether the soils comprise clay, silt and sand (fine, medium and coarse), to confirm the grades presented. Based on this additional data, it was possible to confirm land grades as presented in the existing semi-detailed survey results.
- 17.4.21 Where there was no existing detailed or semi-detailed survey information, detailed ALC surveys were undertaken in 2016 and 2019. These areas are represented on **Figure 17.3** where survey points are shown. Full details of the agricultural land quality at the site are presented in **Appendix 17A**, including the historical data and critical review of this.
- 17.4.22 The extent of each ALC grade within the site boundary is presented in **Table 17.4**.

Table 17.4: ALC grade distribution

ALC Grade	Area (ha)	Area (%)
1	0	0
2	3.9	1.05
3a	18.3	4.92
3b	66.4	17.87
4	110.9	29.84

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ALC Grade	Area (ha)	Area (%)
5	0	0
Non-agricultural.	157.8	42.45
Not surveyed.	14.4	3.87
Total	371.7	100

- 17.4.23 The collation and review of historical data and the detailed ALC survey found agricultural land in Grades 2 (3.9ha), 3a (18.3ha), 3b (66.4ha) and 4 (110.9ha) along with a large area of non-agricultural land (157.8). Grade 2 and 3a land (covering approximately 6% of the site) are considered to be among BMV agricultural land in England and Wales. In addition, 14.4ha is un-surveyed.

- 17.4.24 The principal constraint to agriculture in the agricultural fields north and west of the power station complex is droughtiness, caused by the sandy and very freely draining nature of Newport 4 soils. Although these soils are often deep and only slightly stony, their sandy texture reduces their moisture holding capacity and prevents their stored soil moisture from being adequately buffered against the effects of summer drought. The severity of droughtiness in these sandy soils places the majority of agricultural land in Grade 3b, which is classed as moderately good agricultural land, but is not BMV land.

- 17.4.25 Where the soil profiles comprise loamy sand topsoil with very loose and more coarse textured, sandy subsoils, they do not achieve a grade better than Grade 4, which is classed as poor quality agricultural land. Again, the main limitation to agricultural use is droughtiness.

- 17.4.26 Soil droughtiness has the potential to restrict the range of arable cropping and to restrict crop yields, if summer drought is not alleviated by irrigation. For some crops, such as parsnips, moisture loss from surface soils can be somewhat controlled by the use of netting mulches. Net mulches can help to reduce surface soil temperatures and to lower evaporation.

- 17.4.27 The un-surveyed land lies at the northern limit of the site to the east of Eastbridge. The land is low lying at approximately 5m AOD with a gentle topography (northerly to easterly aspect). The land is provisionally mapped as Grade 4, with the closest areas with detailed mapping comprising Grade 3b and Grade 4 land. Much of the un-surveyed land lies within the Environment Agency Flood Zone 3, with a high probability of fluvial or tidal flooding. Further information on flood risk associated with the site is provided in **Chapter 19** of this volume.

- 17.4.28 It is therefore considered that, due to the nature of the soils (freely draining sandy soils likely to be affected by droughtiness) and the risk of flooding, the un-surveyed land would not comprise BMV land.

vi. Land use and holding information

- 17.4.29 The agricultural land (approximately 210ha) within the site boundary falls under seven ownerships. Approximately 150ha of this agricultural land is within the ownership of EDF Energy Nuclear Generation Limited.
- 17.4.30 Land within the Sizewell Estate is tenanted under short term (1 year) rolling grazing licences or 1 or 2 year Farm Business Tenancies.
- 17.4.31 Details of the land holdings and associated land uses present are shown in **Table 17.5**.

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Table 17.5: Details of land holdings within the site

Holding Name	Description	Land Holding Area Within the Site Boundary	Total Land Holding Area (Approx.)	Percentage of Land Holding Within the Site Boundary	Sensitivity to Change
EDF Energy Nuclear Generation Limited.	<p>Land comprises mix of woodland, marsh and arable land. Includes part of Dunwich Forest and Sizewell Marshes SSSI as well as parts of Broom Covert and woodland adjacent to Sizewell Gap and immediately south of Sizewell A.</p> <p>Field immediately east of Goose Hill, field at Black Walks and field south of Sandpytle Plantations are under Entry Level plus Higher Level stewardship (see Figure 17.4).</p> <p>Woodland at Goose Hill, Broom Covert, adjacent to Sizewell Gap, immediately south of Sizewell A and Black Walks is under English Woodland Grant Schemes (see Figure 17.5).</p>	298.56ha (comprising approximately 150ha of land in agricultural use).	662.81ha (comprising approximately 250ha of land in agricultural use).	45.05% (comprising approximately 60% of land in agricultural use).	Medium
NNB Generation Company (SZC) Limited.	<p>Part of Aldhurst Farm habitat creation area. Managed under the Aldhurst Farm Landscape and Ecology Management Plan (occasional management of scrub across the grassland area).</p> <p>Accessed from Lover's Lane.</p> <p>No areas under agri-environment schemes (see Figure 17.4).</p>	7.88ha	38.97ha	20.25%	High (biodiversity/ grazing sensitivity).
Crown Farm/LEEIE.	<p>Irrigated arable (potatoes, onions, parsnips, turnips plus cereals). Access off main roads and internal farm tracks.</p> <p>Shooting rights held.</p> <p>All land in this block is under Entry Level plus Higher Level stewardship (see Figure 17.4).</p> <p>Forms part of a larger estate (more than 400ha).</p>	29.56ha	404ha	7.32%	High

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Holding Name	Description	Land Holding Area Within the Site Boundary	Total Land Holding Area (Approx.)	Percentage of Land Holding Within the Site Boundary	Sensitivity to Change
Old Abbey Farm.	Arable land (cereals), part of a larger landholding dissipated across the local area. Accessed from Lover's Lane, the B1122 and the farm. Land not under agri-environment schemes (see Figure 17.4).	12.58ha	21.95ha	57.31%	Low
Theberton House Estate.	Land appears to be under arable (cereals). Access from un-named road. No areas under agri-environment schemes (see Figure 17.4).	9.03ha	168.48ha	5.35%	Low
Abbey Farm	Arable land (cereals). Access from B1122. No areas under agri-environment schemes (see Figure 17.4).	0.58ha	9.14ha	6.34%	Low
Leiston House Farm / Wood Farm.	Arable. Land accessed from the B1122. Land not under agri-environment schemes.	0.13ha	10.54ha	1.23%	Low

- 17.4.32 Immediately adjacent to the site boundary, some land areas are under existing EDF Energy Estate management plans. These include:
- Minsmere to Walberswick Heaths and Marshes SSSI Management Plan;
 - Sizewell Marshes SSSI Management Plan;
 - EDF Energy Integrated Landscape Management Plan; and
 - Aldhurst Farm Landscape and Ecology Management Plan.
- 17.4.33 A number of invasive species have been recorded within or in close proximity to the site, but none are currently associated with agricultural land.
- 17.4.34 Nuttall's Waterweed (*Elodea nuttallii*) and non-native aquatic species Water Fern (*Azolla filiculoides*) and Parrot's-feather (*Myriophyllum aquaticum*) have both been recorded as being present within the ditch network at Sizewell Marshes SSSI; Japanese Rose (*Rosa rugosa*) has been recorded from Sizewell Beach; and Rhododendron (*Rhododendron ponticum*) has been recorded from within the woodland of Kenton Hills and within Fiscal Policy woodland. Further details are presented in **Chapter 14: Terrestrial Ecology and Ornithology** of this volume.

b) Future baseline

- 17.4.35 It is considered unlikely that the baseline conditions associated with soils and agriculture would change in the absence of the proposed development. The grade of agricultural land is determined predominantly by the soil's physical characteristics (in particular texture and related structure) which will not change.
- 17.4.36 Climate change is considered likely to have an effect on soil characteristics (resulting from increased temperatures and increased intensity of rainfall events), potentially reducing soil carbon levels and affecting yields. However, the main soil types are sandy, well drained soils already affected by droughtiness, with irrigation used by some farms to enable a wider range of crops to be grown. It is considered that this will not materially change the baseline over the course of the construction period of the proposed development.
- 17.4.37 Therefore, in the absence of the proposed development, it is considered unlikely there would be changes to the current baseline conditions.

17.5 Environmental design and mitigation

- 17.5.1 As detailed in **Volume 1, Chapter 6** of the **ES**, a number of primary mitigation measures have been identified through the iterative EIA process and have been incorporated into the design and construction planning of the proposed development. Tertiary mitigation measures are legal requirements

or are standard practices that will be implemented as part of the proposed development.

17.5.2 The assessment of likely significant effects of the proposed development assumes that primary and tertiary mitigation measures are in place. These measures are summarised in this section so that it is clear where and why these measures have been included and the way in which they have contributed to the management and reduction of environmental effects.

17.5.3 Primary and tertiary mitigation for off-site development areas, including the off-site sports facilities at Leiston, fen meadow compensation sites south of Benhall and east of Halesworth and, if required, the marsh harrier habitat improvement area (Westleton), are set out in **Appendix 17B**.

a) **Primary mitigation**

17.5.4 Primary mitigation is often referred to as ‘embedded mitigation’ and includes modifications to the location or design to mitigate impacts; these measures become an inherent part of the proposed development.

17.5.5 The site layout in relation to permanent land requirements has been optimised to reduce the overall land take, in particular the impact on agricultural land.

b) **Tertiary mitigation**

17.5.6 Tertiary mitigation will be required regardless of any EIA assessment, as it is imposed, for example, as a result of legislative requirements and/or standard sectoral practices.

17.5.7 The sustainable re-use of the soil resource would be undertaken in line with the Construction Code of Practice for the Sustainable Use of Soil on Construction Sites (Ref. 17.10) and the MAFF Good Practice Guide for Soil Handling (Ref. 17.11).

17.5.8 An outline **Soil Management Plan** (SMP) has been developed (see **Appendix 17C** of this volume). This includes information on handling methods and measures which would be implemented including (but are not limited to):

- development of a Soil Resources Plan (SRP) by the Contractor, which would include detail on existing soil information, proposed storage locations and management measures;
- ensuring soils are stripped and handled in the driest condition possible;
- ensuring topsoil and subsoil resources are stripped and stockpiled separately;

- protection of stockpiles from erosion through establishment of a grass cover and from tracking over through appropriate signage and/or fencing;
 - confining vehicle movements to defined haul routes until all the soil resource has been stripped; and
 - ensuring the physical condition of the replaced soil profile to at least 1.2m below ground level is sufficient for the post-construction use.
- 17.5.9 All soils would be stored away from watercourses (or potential pathways to watercourses), and any potentially contaminated soil would be stored on an impermeable surface and covered to reduce leachate generation and potential migration to surface waters.
- 17.5.10 Industry standard measures would be put in place to control pollution, including from fuel or chemical stores, silt-laden runoff or dust as detailed in the chapters on air quality (**Chapter 12** of this volume), geology and land quality (**Chapter 18** of this volume) and groundwater and surface water (**Chapter 19** of this volume).
- 17.5.11 Toolbox talks would be used to inform all those working on the site of the requirements for soil handling and minimisation of disturbance to agricultural activities to minimise potential impacts on the remainder of the landholding and on neighbouring landholdings during the construction phase. Details of the proposed toolbox talks are presented in the SMP (**Appendix 17C** of this volume).
- 17.5.12 An Outline Landscape and Ecology Management Plan (OLEMP) is appended to the **CoCP** (Doc Ref. 8.11). This details the landscape and habitat restoration proposals for land required on a temporary basis.
- 17.5.13 All fencing around the proposed development would be sufficient to resist damage by livestock (where appropriate) from adjacent land and will be regularly checked and maintained in a suitable condition. Any damage to boundary fencing would be repaired in a timely manner.
- 17.5.14 Measures contained in relevant Defra and Environment Agency best practice guidance on the control and removal of invasive weed species (Ref. 17.17) would be implemented where appropriate, such as through the appropriate use of herbicides or removal/burial of plant materials. These are detailed in the **CoCP** (Doc Ref. 8.11).
- 17.5.15 During construction, should animal bones be discovered which may indicate a potential burial site, works would cease, and advice would be sought from the Animal Health Regional Office on how to proceed, relevant to the origin and age of the materials found.

17.5.16 All movement of plant and vehicles between fields would cease in the event of a notification by Defra of disease outbreak in the vicinity of the site requiring the cessation of activities. Advice and guidance from Defra would be followed to minimise the biosecurity risk associated with the continuation of works.

17.6 Assessment

a) Introduction

17.6.1 This section presents the findings of the soils and agriculture assessment for the construction and operation of the proposed development.

17.6.2 This section identifies any likely significant effects that are predicted to occur. **Section 17.7** summarises any secondary mitigation and monitoring measures that are proposed to minimise any adverse significant effects (if required).

17.6.3 The assessment of effects associated with off-site developments, including the off-site sports facilities at Leiston, fen meadow compensation sites south of Benhall and east of Halesworth and, if required, the marsh harrier habitat improvement area (Westleton), is set out in **Appendix 17B**.

b) Construction

i. Agricultural land

17.6.4 The areas of land at each grade required temporarily and permanently are presented in **Table 17.6**.

Table 17.6: Permanent and temporary loss of agricultural land*.

ALC Grade	Total Area (ha)	Area Required Permanently (ha)	Area Required Temporarily (ha)
1	0	0	0
2	3.9	0.6	3.3
3a	18.3	5.0	13.1
3b	66.4	0.4	66.0
4	110.9	2.5	108.5
5	0	0	0
Non-agricultural.	157.8	67.5	90.5
Not surveyed.	14.4	0	14.3

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ALC Grade	Total Area (ha)	Area Required Permanently (ha)	Area Required Temporarily (ha)
Total	371.7	76.0	295.7

*Due to rounding, the permanent and temporary land take areas may not always add up to the total area reported.

- 17.6.5 As shown in **Table 17.6**, during construction, the proposed development would result in the total loss of 213.9ha of land from primary agricultural productivity. 3.9ha (1.05% of the entire site area) of this land is Grade 2 and 18.3ha (4.92% of the entire site area) of this land is of Grade 3a value, both of which are considered to be BMV land.
- 17.6.6 An area of 14.4ha has not been surveyed. This land lies at the northern edge of the site in an area provisionally mapped as Grade 4 land on freely draining sandy soils. Areas adjacent to the un-surveyed land have been mapped in detail as Grade 4, with the grade limited by droughtiness. Based on experience from the other ALC surveys in this area, it is assumed that the un-surveyed land would not be BMV land.
- 17.6.7 The remaining agricultural land temporarily lost comprises Grades 3b and 4, and land in non-agricultural uses.
- 17.6.8 However, following the removal and reinstatement of the land required temporarily, the proposed development would result in the permanent loss of 8.5ha of agricultural land. Of this, 0.6ha is Grade 2, 5.0ha is Grade 3a and 2.9ha comprise Grades 3b and 4 land.
- 17.6.9 The land described as Grade 2 and Grade 3a (22.2ha) which is lost from the start of the construction phase is a receptor of high value. The magnitude of impact for the loss of this land would be assessed as **medium**. Therefore, this is considered to be a **major adverse** effect which would be **significant**. However, following the removal and reinstatement of temporary development by the end of the construction phase, the magnitude of impact associated with the permanent loss of BMV land (5.6ha of the 22.2ha) would be assessed as **very low**. This is considered to be a **minor adverse** permanent effect which would be **not significant**.
- 17.6.10 The land described as Grade 3b and Grade 4 is a receptor of **medium/low** value. The magnitude of impact associated with the total loss of this land would be assessed as **low**. This is considered to be a **minor adverse** effect which would be **not significant**. However, following the removal and reinstatement of temporary development, the magnitude of impact associated with the permanent loss of this land would be assessed as **very low**. Therefore, this is considered to be a **negligible** effect which would be **not significant**.

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ii. Land holding

17.6.11 Seven agricultural land holdings are associated with this site.

17.6.12 All of the land in agricultural production would be lost temporarily from the start of the construction phase. The agricultural land required permanently following completion of the construction phase covers an area of 8.5ha associated mainly with the proposed access road. Land required temporarily would be retained throughout the construction phase and would be returned and restored to the holding by the end of the construction phase.

17.6.13 The effects during construction on each holding are summarised in **Table 17.7** in line with the assessment criteria. This shows the proportion of each holding required during construction. The effects of severance are based on the ease to which land remains accessible with the implementation of the measures outlined above.

Table 17.7: Summary of effects on holdings

Holding Name	Sensitivity to change	Area of Holding Required	Percentage of Holding Required During Construction	Magnitude of Impact	Classification of Effect During Construction
EDF Energy Nuclear Generation Limited.	Medium	298.56ha (comprising approximately 150ha of land in agricultural use).	45.05% (comprising approximately 60% of land in agricultural use).	High	Major adverse.
NNB Generation Company (SZC) Limited.	High	7.88ha	20.25%	Medium	Major adverse.
Crown Farm/LEEIE.	High	29.56ha	7.32%	Medium	Major adverse.
Old Abbey Farm.	Low	12.58ha	57.31%	High	Moderate adverse.
Theberton House Estate.	Low	9.03ha	5.35%	Low	Minor adverse.
Abbey Farm.	Low	0.58ha	6.34%	Low	Minor adverse.

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Holding Name	Sensitivity to change	Area of Holding Required	Percentage of Holding Required During Construction	Magnitude of Impact	Classification of Effect During Construction
Leiston House Farm / Wood Farm.	Low	0.13ha	1.23%	Very low.	Negligible

17.6.14 It is noted that whilst major adverse effects on EDF Energy Nuclear Generation Limited and NNB Generation Company (SZC) Limited have been identified in **Table 17.7** in line with the assessment criteria set out in **section 17.3**, these effects are not considered to constitute a significant adverse effect, as the owners of these landholdings are not farming businesses and the viability of these entities is not dependent on the revenue created through agriculture.

17.6.15 For each landholding, access to land not within the site boundary would remain possible using existing access routes and therefore, no effects due to severance have been identified.

17.6.16 By the end of the construction phase 205.41ha of land will be returned to agricultural use. The effect on each land holding at the end of the construction phase as a result of land being returned to agricultural use is summarised in **Table 17.8**.

Table 17.8: Summary of effects on holdings following reinstatement of land required temporarily

Holding Name	Sensitivity to change	Area of Holding to be Returned to Agricultural Use	Area of Holding Required Permanently	Percentage of Holding Required Permanently	Magnitude of Impact	Classification of Effect Once Land Required Temporarily Has Been Reinstated
EDF Energy Nuclear Generation Limited.	Medium	271.65ha	26.91ha	9.90%	Low	Minor adverse
NNB Generation Company (SZC) Limited.	High	7.89ha	0ha	0%	Very Low.	No effect
Crown Farm/LEIEE.	High	29.56ha	0ha	0%	Very Low.	No effect

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Holding Name	Sensitivity to change	Area of Holding to be Returned to Agricultural Use	Area of Holding Required Permanently	Percentage of Holding Required Permanently	Magnitude of Impact	Classification of Effect Once Land Required Temporarily Has Been Reinstated
Old Abbey Farm.	Low	12.58ha	0ha	0%	Very Low.	No effect
Theberton House Estate.	Low	5.94ha	3.09ha	1.83%	Very Low.	Negligible
Abbey Farm. ⁴	Low	0.58ha	0.58ha	6.34%	Very Low.	Minor adverse.
Leiston House Farm / Wood Farm. ⁴	Low	0.13ha	0.13ha	1.23%	Very Low.	Negligible

17.6.17 With the reinstatement of land at the end of the construction phase the impacts are reduced across all land holdings.

17.6.18 Woodland blocks associated with the EDF Energy Nuclear Generation Limited land holding are covered by Woodland Grant Schemes. These are considered to be receptors of medium sensitivity. The magnitude of impact would be considered to be high, resulting in a **major adverse** effect which would be **significant**. Under the OLEMP, woodland planting would be undertaken prior to the end of the construction phase. As such there would be a **negligible** permanent effect which would be considered **not significant**.

iii. Inter-relationship effects

17.6.19 There are anticipated to be inter-relationship effects between geology and land quality; landscape; noise; air quality and groundwater and surface water in relation to potential receptors (both agricultural land and land holdings) which could be impacted by ground contamination, poor ground conditions resulting from soil handling and noise or dust affecting adjacent land holdings.

17.6.20 There is the potential for effects on agricultural land to increase due to effects arising on land quality as construction activities could result in ground

⁴ Land required is associated with footpath diversions and comprises current field boundaries/field margins.

contamination, soil erosion and silt-laden runoff affecting land outside the site boundary or soils required for reinstatement of land required temporarily. The **CoCP** (Doc Ref. 8.11) outlines measures which will be used to control runoff, erosion and pollution. The assessment presented in **Chapter 18** of this volume determined that the impact would be low and as such it is considered there is limited potential for effects arising from geology and land quality to increase the effects reported on agricultural land.

- 17.6.21** In relation to landscape, the ability to create and maintain elements of landscape planting will require soils with appropriate characteristics. The SMP (see **Appendix 17C** of this volume) sets out how soils will be stripped, stockpiled and re-used to ensure they are suitable for the required end use. These are established methods, based on published guidance, and as such it is considered there is limited potential for inter-relationship effects with landscape.
- 17.6.22** During the construction phase there is the potential for effects on agricultural land to increase as result of noise generated by construction activities. The exact construction working methods would not be decided until after approval of the development consent application and as such precise details of mitigation measures have not been defined. However, the **CoCP**(Doc Ref. 8.11) includes a range of measures which could be used to reduce impacts from noise on adjacent receptors.
- 17.6.23** There is the potential for the effects on agricultural land to increase due to effects arising on air quality as construction activities would result in the emission of dust which could be deposited on adjacent agricultural land surrounding the site. This has the potential to result in smothering of vegetation and soil contamination, impacting agricultural productivity. A dust impact assessment was undertaken for the site (see **Appendix 12A** of this volume) which identified dust generating activities during the earthworks, construction and trackout phase. The risk of dust impacts was determined to be high. The **CoCP** (Doc Ref. 8.11) outlines the control measures that will be applied on site to reduce the risk of dust impacts such that the effect on air quality is considered to be negligible. On this basis, it is considered there is limited potential for effects arising from air quality to increase the effects reported on agricultural land quality.
- 17.6.24** Changes to surface and groundwater flows as a result of construction activities has the potential to increase effects on agricultural land and soils required for reinstatement of land and landscape planting areas (for example altered groundwater regime or flood risk). The **CoCP** (Doc Ref. 8.11) outlines measures to be implemented to reduce the risk of hydrological or hydrogeological changes which could affect agricultural land such that the effects are considered to be minor adverse or negligible. The assessment presented in **Chapter 19** of this volume determined that the impact would be

low and as such it is considered that there is limited potential for effects arising from groundwater and surface water to increase the effects reported on agricultural quality.

c) Operation

17.6.25 Potential impacts include potential for invasive weed species to grow within the site. However, this would be controlled using an appropriate management regime that would remove weed growth that might threaten adjoining agricultural land, as set out within the OLEMP, resulting in potential impacts of very low magnitude. The impact during operation on farm businesses of **low / high** sensitivity is therefore assessed as being of very low magnitude which would be a **negligible / minor adverse** effect and **not significant**.

i. Inter-relationship effects

17.6.26 There are anticipated to be inter-relationship effects between noise; air quality and groundwater and surface water in relation to potential receptors which could be impacted by noise, particulate matter and nitrogen oxide emissions or pollution incidents affecting adjacent land holdings. Potential impacts would include the contamination of soils, disturbance (noise) and dust. However, given the mitigation measures proposed in relation to these disciplines it is expected that there will be only minor inter-relationship effects (**not significant**).

17.7 Mitigation and monitoring

a) Introduction

17.7.1 Where possible, mitigation measures have been proposed where a significant effect is predicted to occur. Primary and tertiary mitigation measures that have already been incorporated within the design of the proposed development are detailed in **section 17.5**.

17.7.2 This section describes the proposed secondary mitigation measures for soils and agriculture.

17.7.3 Additional mitigation and monitoring measures for off-site development areas, including the off-site sports facilities at Leiston, fen meadow compensation sites south of Benhall and east of Halesworth and, if required, the marsh harrier habitat improvement area (Westleton), are set out in **Appendix 17B**.

i. Mitigation

17.7.4 No further secondary mitigation or monitoring measures have been identified as being available in relation to the temporary loss of BMV land. As discussed in **section 17.6**, with primary and tertiary mitigation in place, the permanent effects on BMV land are assessed as not significant.

17.7.5 Whilst the permanent effects on the land holdings are not considered to be significant, further consultation with the land owners will be undertaken to reduce the impacts on the farm businesses, as far as practicable, especially during the construction phase. This will include agreement of assurances and obligations that SZC Co. will accept upon entering the land and compensation, where applicable.

17.7.6 It is considered that this will reduce the magnitude of impact to **low** or **very low**, where the magnitude is assessed as moderate or high, which would result in residual **minor adverse** impacts which are **not significant**.

17.8 Residual effects

17.8.1 The following tables present a summary of the soils and agriculture assessment. They identify the receptor/s likely to be impacted, the level of effect and, where the effect is deemed to be significant, the tables include the mitigation proposed and the resulting residual effect.

Table 17.9: Summary of effects for the construction phase.

Receptor	Impact	Primary or Tertiary Mitigation	Assessment of Effects	Additional Mitigation	Residual Effects
Main Development Site					
BMV land.	Total loss of approximately 22.2ha (including long-term, temporary loss of 16.6ha and permanent loss of 5.6ha).	Land required temporarily will be fully restored following construction. Soil handling, storage and re-use will be detailed in the outline Soil Management Plan to ensure the soils are fit for purpose on reinstatement of the land. Measures set	Major adverse (significant).	None available.	Major adverse (significant).

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Receptor	Impact	Primary or Tertiary Mitigation	Assessment of Effects	Additional Mitigation	Residual Effects
Main Development Site					
		out in SMP (Appendix 17C of this volume).			
BMV land.	Permanent loss of 5.6ha of the 22.2ha total loss.	Permanent land take has been minimised with land required temporarily (16.6ha) fully restored by the end of the construction phase. Soil handling, storage and re-use will be detailed in the outline Soil Management Plan to ensure the soils can be re-used.	Minor adverse (not significant).	None available.	Minor adverse (not significant).
Non BMV land.	Total loss of 191.7ha (including long-term, temporary loss of 188.8ha and permanent loss of 2.9ha).	Land required temporarily will be fully restored following construction. Soil handling, storage and re-use will be detailed in the outline Soil Management Plan to ensure the soils are fit for purpose on reinstatement of the land. Measures set out in (Appendix 17C of this volume).	Minor adverse (not significant).	None available.	Minor adverse (not significant).

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Receptor	Impact	Primary or Tertiary Mitigation	Assessment of Effects	Additional Mitigation	Residual Effects
Main Development Site					
Non BMV land.	Permanent loss of 2.9ha of the 191.7ha total loss.	Soil handling, storage and re-use will be detailed in the outline Soil Management Plan to ensure the soils can be re-used.	Negligible (not significant).	None required.	Negligible (not significant).
Woodland under Woodland Grant Schemes.	Long-term temporary loss of woodland grant schemes.	Woodland replanting and management as detailed in the OLEMP.	Major adverse (significant).	None available.	Negligible (not significant) once woodlands have re-established.
EDF Energy Nuclear Generation Limited.	Temporary loss of land.	Land returned to agricultural use by end of construction phase.	Major adverse under the assessment criteria in section 17.3 , but not considered to result in a significant adverse effect as the entity is not an agricultural business and is not dependent on the revenue created through estate management (not significant).	None required.	Minor adverse (Not significant).

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Receptor	Impact	Primary or Tertiary Mitigation	Assessment of Effects	Additional Mitigation	Residual Effects
Main Development Site					
EDF Energy Nuclear Generation Limited.	Permanent loss of land.	Design has been optimised to minimise land take requirements.	Minor adverse (not significant).	Consultation to reduce the impacts on the farming operations, as far as practicable.	Minor adverse (not significant).
NNB Generation Company (SZC) Limited.	Temporary loss of land.	Land returned to agricultural use.	Major adverse under the assessment criteria in section 17.3 , but not considered to result in a significant adverse effect as the entity is not an agricultural business and is not dependent on the revenue created through estate management (not significant).	None required.	No effect
NNB Generation Company (SZC) Limited.	Permanent loss of land.	Design has been optimised to minimise land take requirements.	Minor adverse (not significant).	Consultation to reduce the impacts on the farming operations, as far as practicable.	Minor adverse (not significant).
Crown Farm/LEEIE.	Temporary loss of land.	Land returned to agricultural use.	Major adverse (significant).	Consultation to reduce the impacts on the farm business, as far as practicable.	Minor adverse (not significant).

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Receptor	Impact	Primary or Tertiary Mitigation	Assessment of Effects	Additional Mitigation	Residual Effects
Main Development Site					
Old Abbey Farm.	Temporary loss of land.	Land returned to agricultural use.	Moderate adverse (significant).	Consultation to reduce the impacts on the farm business, as far as practicable.	Minor adverse (not significant).
Theberton House Estate.	Temporary loss of land.	Land returned to agricultural use.	Negligible (not significant).	Consultation to reduce the impacts on the farm business, as far as practicable.	Negligible (not significant).
Theberton House Estate.	Permanent loss of land.	Design has been optimised to minimise land take requirements.	Negligible (not significant).	Consultation to reduce the impacts on the farm business, as far as practicable.	Negligible (not significant).
Abbey Farm.	Temporary loss of land.	Design has been optimised to minimise land take requirements. Land to be returned to agricultural use wherever possible.	Minor adverse (not significant).	Consultation to reduce the impacts on the farm business, as far as practicable.	Negligible (not significant).
Leiston House Farm / Wood Farm.	Temporary loss of land	Design has been optimised to minimise land take requirements. Land to be returned to agricultural use wherever possible.	Negligible (not significant).	Consultation to reduce the impacts on the farm business, as far as practicable.	Negligible (not significant).

Table 17.10: Summary of effects for the operational phase.

Receptor	Impact	Primary or Tertiary Mitigation	Assessment of Effects	Additional Mitigation	Residual Effects
Agricultural operations.	Restrictions due to the spread of invasive species.	Best practice management as detailed in the OLEMP.	Negligible/ minor adverse (not significant).	None required.	Negligible/ minor adverse (not significant).

References

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