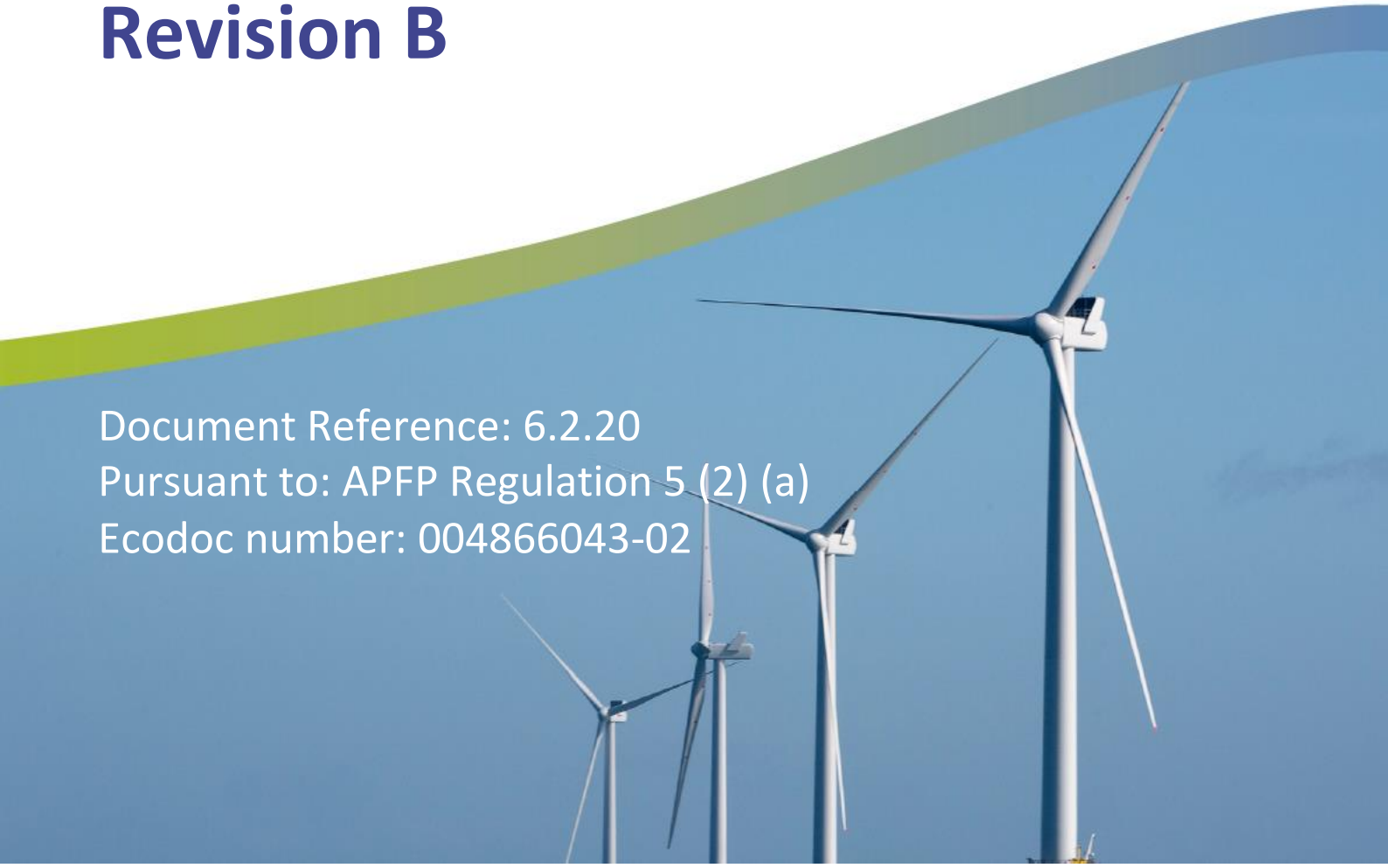
Rampion 2 Wind Farm

Category 6: Environmental Statement

Volume 2, Chapter 20: Soils and agriculture (tracked)

Date: August 2024

Revision B



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A	04/08/2023	Final for DCO Application	WSP	RED	RED
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Executive Summary

This section summarises the assessment findings at this point in the Environmental Impact Assessment (EIA) process for soils and agricultural land, based on **Chapter 20: Soils and agriculture, Volume 2** of the Environmental Statement (ES) (Document Reference 6.2.20).

How effects on soils and agriculture have been assessed

The assessment has considered the likely significant effects of the Proposed Development on soil and agricultural land resources in relation to effects on (or loss of) soil functions and effects on (or loss of) agricultural land as a resource, as classified using the system devised by the former Ministry of Agriculture Fisheries and Food (MAFF), now part of the Department for Environment, Food and Rural Affairs (Defra).

Information on the baseline soil and agricultural land conditions has been obtained from a number of sources including Natural England, British Geological Survey, the Multi-Agency Geographic Information for the Countryside (MAGIC) website and Soil and Agricultural Land Classification (ALC) surveys completed during 2021 for approximately 40 percent of the proposed Development Consent Order (DCO) Order Limits.

The assessment focuses on the construction phase of Rampion 2, as at the Scoping stage of the EIA it was agreed that there are unlikely to be any significant effects on soils and agriculture during the operation and maintenance and decommissioning phases of Rampion 2. Potential effects which have been assessed include changes to soil structure, and soil erosion or compaction, in addition to the permanent loss of soils and agricultural land to facilitate the construction of permanent features including the substation at Oakendene, and the existing National Grid Bolney substation extension.

Baseline environment

Land near the coast (around landfall) is a mixture of silty soils and fine loamy soils over gravel. These soils give mainly high-quality agricultural land dominated by arable farming. On the South Downs, the soils are mainly shallow over chalk, with deeper soils in dry valleys. The South Downs has a mixture of arable and livestock farms with woodland plantation. On the Weald, heavier soils over clays are present, typically wet and of moderate agricultural quality. The Weald is under grassland with variable proportions of cereal rotation.

The Agricultural Land Classification (ALC) grades within the proposed DCO Order Limits include Grade 2, Subgrade 3a, Subgrade 3b and Grade 4, with Grades 2 and 3a being classed as best and most versatile land. The Soil and ALC survey completed to date has covered approximately 40 percent of the land within the proposed DCO Order Limits and has found mainly Subgrade 3b, which is not best and most versatile land. However, the land not surveyed to date includes a significant area of the South Downs, parts of which have a higher potential than other areas in the proposed DCO Order Limits to be best and most versatile land. By supplementing the ALC survey data with provisional ALC classifications, it has been estimated that 12~~68~~.41~~0~~ha of the land within the proposed DCO Order Limits (2~~32.1~~ percent) is Grade 2 agricultural land, 200.00~~203.65~~ha (35~~.7~~ percent) is Subgrade 3a (i.e., 57.8 percent is best and most versatile land), 154.23~~.50~~ha (27~~6.9~~ percent) is Subgrade 3b and 75.34~~.87~~ha (13. 1 ~~1~~ percent) is Grade 4, and an estimated 2.2

percent of land within the proposed DCO Order Limits is either non-agricultural or urban. The confirmed and / or likely ALC grades have been considered for each element of the Proposed Development to obtain an appropriate classification to determine the sensitivity of the soils / agricultural land to potential effects in the assessment. For all elements, this has been defined as Subgrade 3a, reflecting that although the majority of the land within the proposed DCO Order Limits is likely to be best and most versatile land, the ALC grades vary locally to include Grade 2, Subgrades 3a and 3b and Grade 4. The design of Rampion 2 has sought to minimise the potential impact to soil resources and agricultural land through consideration of these potential receptors, throughout the design process.

In relation to other sensitive soils such as those within woodland, or supporting sites designated for ecological conservation, these soil receptors can be avoided by trenchless crossings below the feature to avoid disturbance of near surface soils.

Embedded environmental measures

A range of environmental measures in the **Commitments Register** (Document Reference: 7.22) relating to soils and agricultural land are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. These include storage and handling of topsoil and subsoil in accordance with the Defra 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009), protection of land drainage, and other measures defined in the **Outline Soils Management Plan (SMP)** (Document Reference 7.4), which is based on the site-specific Soil and ALC survey results. The **Outline SMP** (Document Reference 7.4) will be developed pre-construction into a final SMP by the appointed construction contractor, based upon additional (pre-construction) Soil and ALC survey (embedded environmental measure C-183). The additional survey will be completed during pre construction, and will cover land not surveyed to date that will potentially be disturbed during the construction phase for Rampion 2.

Likely significant effects

Overview

Based on the proposed location of the onshore substation and routing of the onshore cable corridor, plus the implementation of embedded environmental measures such as the **Outline SMP** (Document Reference 7.4), no significant effects have been identified on soil and agricultural land receptors during the construction, operation and maintenance, and decommissioning phases.

Cumulative effects

No significant cumulative effects have been identified in relation to the Proposed Development on soil and agricultural land receptors during the construction, operation and maintenance, and decommissioning phases.

Inter-related effects

No significant Inter-related effects of greater significance compared to the effects considered alone were identified for soil and agricultural land receptors during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.

Transboundary effects

No significant transboundary effects have been identified in relation to the Proposed Development on soil and agricultural land receptors during the construction, operation and maintenance, and decommissioning phases.

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20. Soils and agriculture

20.1 Introduction

20.1.1 This chapter of the Environmental Statement (ES) presents the results of the assessment of the likely significant effects of Rampion 2 with respect to soils and agricultural land as a resource, including loss and potential degradation of best and most versatile agricultural land, and loss of or damage to soil resources and soil functions. It should be read in conjunction with the project description provided in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference 6.2.4) and the relevant parts of the following chapters and appendices:

- **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference 6.2.22) for the assessment of potentially significant effects with respect to terrestrial ecology and nature conservation sites that may arise from Rampion 2;
- **Chapter 24: Ground conditions, Volume 2** of the ES (Document Reference 6.2.24) for the assessment of potentially significant effects with respect to land contamination, geohazards and geodiversity that may arise from Rampion 2; and
- **Chapter 26: Water environment, Volume 2** of the ES (Document Reference 6.2.26) for assessment of potentially significant effects on water environment receptors including groundwater, surface water and flood risk that may arise from Rampion 2. In particular, soil compaction and erosion caused by construction activities could impact the water environment.

20.1.2 The cultural heritage functions of soil, such as preservation of archaeological remains, are not discussed in this chapter since this function of soil has limited interaction with the other functions addressed in this chapter. The cultural heritage function of soil in the onshore part of the proposed Development Consent Order (DCO) Order Limits is covered in **Chapter 25: Historic environment, Volume 2** of the ES (Document Reference 6.2.25).

20.1.3 This technical chapter describes:

- the legislation, planning policy and other documentation that has informed the assessment (**Section 20.2: Relevant legislation, planning policy, and other documentation**);
- the outcome of consultation and engagement that has been undertaken to date, including how matters relating to soils and agriculture within the Scoping Opinion (Planning Inspectorate, 2020) and the Statutory Consultation have been addressed (**Section 20.3: Consultation and engagement**);
- the scope of the assessment for soils and agriculture (**Section 20.4: Scope of the assessment**);
- the methods used for the baseline data gathering (**Section 20.5: Methodology for baseline data gathering**);

- the overall baseline (**Section 20.6: Baseline conditions**);
- embedded environmental measures relevant to soils and agriculture and the relevant maximum design scenario (**Section 20.7: Basis for ES assessment**);
- the assessment methods used for the ES (**Section 20.8: Methodology for ES assessment**);
- the assessment of soils and agriculture effects (**Section 20.9: Assessment of effects** and **Section 20.10: Assessment of cumulative effects**);
- consideration of transboundary effects (**Section 20.11: Transboundary effects**);
- inter-related effects (**Section 20.12: Inter-related effects**);
- a summary of residual effects for soils and agriculture (**Section 20.12.3: Summary of residual effects**);
- a glossary of terms and abbreviations is provided in **Section 20.14: Glossary of terms and abbreviations**; and
- a references list is provided in **Section 20.15: References**.

20.1.4 The chapter is also supported by the following appendices:

- **Appendix 20.1: Detailed Agricultural Land Classification Report, Volume 4** of the ES (Document Reference 6.4.20.1).

20.2 Relevant legislation, planning policy and other documentation

Introduction

20.2.1 This section identifies the legislation, policy and other documentation that has informed the assessment of effects with respect to soils and agriculture. Further information on policies relevant to the Environmental Impact Assessment (EIA) and their status is provided in **Chapter 2: Policy and legislative context, Volume 2** of the ES (Document Reference 6.2.2).

Legislation and national planning policy

20.2.2 **Table 20-1** lists the legislation and policy relevant to the assessment of the effects on soils and agriculture receptors.

Table 20-1 Legislation and national planning policy relevant to soils and agriculture

Legislation or Policy description	Relevance to assessment
The Environment Act 2021	
The Environment Act 2021 requires organisations to pay regard to environmental principles including: • **The prevention principle, which means that government policy should aim to prevent, reduce or mitigate harm.** • **The rectification at source principle, which means that if damage to the environment cannot be prevented it should be tackled at its origin.** • **The polluter pays principle, which is the principle that those who cause pollution or damage to the environment should be responsible for mitigation or compensation.** • **The precautionary principle, which states that where there are threats of serious or irreversible environmental damage, a lack of scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.** **The Environment Act 2021 also strengthens woodland protection enforcement measures and biodiversity protection and includes a biodiversity net gain requirement for development to deliver at least 10% increase in biodiversity, however this requirement is still in its two year transitional period and is not yet in force.**	The assessment (**Section 20.9**, **Section 20.10** and **Section 20.11**) considers the potential for Rampion 2 to result in damage to soils and agricultural land and the embedded environmental measures to avoid or minimise such effects are detailed in **Section 20.7**. Effects on woodland soils are avoided through design of Rampion 2.
Overarching National Policy Statement (NPS) for Energy (EN-1) (Department for Energy and Climate Change (DECC), 2011a)	
EN-1 NPS sets out guidance and requirements for major energy infrastructure projects and is relevant to Rampion 2 as it is an offshore wind project generating more than 100MW. ***"Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the***	At each stage of its development, the design of Rampion 2 has taken into account information on soils including ALC grades, particularly where these confirm or indicate the likely presence of best and most versatile agricultural land. This information

Legislation or Policy description	Relevance to assessment
Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed." **(Paragraph 5.10.8).** ***"The IPC should 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."*** **(Paragraph 5.10.15)**	has been considered in the design to minimise the potential impact to soil resources and agricultural land through the embedded environmental measures presented in **Table 20-17**. The assessment of effects is outlined in **Section 20.9**, **Section 20.10** and **Section 20.11**.
National Planning Policy Framework, (NPPF) (Ministry of Housing, Communities and Local Government (MHCLG), 2021)	
The NPPF at Paragraph 8 states that: **"*Achieving sustainable development means that the planning system has three overarching objectives…:*** ***c) an environmental objective – to contribute to protecting and enhancing our natural… environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, … mitigating and adapting to climate change…*"** **Paragraph 120 states that:** **"*Planning* policies and decisions should:** ***b) recognise that some undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation…carbon storage or food production"*** **Paragraph 174 states that:** ***"Planning policies and decisions should contribute to and enhance the natural and local environment by:***	At each stage of its development, the design of Rampion 2 has taken into account information on soils including ALC grades, particularly where these confirm or indicate the likely presence of best and most versatile agricultural land. This information has been considered in the design to minimise the potential impact to soil resources and agricultural land through embedded environmental measures presented in **Section 20.7**. The assessment of effects is outlined in **Section 20.9, Section 20.10** and **Section 20.11**. The policy description provided in this table reflects the range of soil functions and soil ecosystem services, and the interaction of this chapter with other aspects including the water environment, terrestrial ecosystems and ground conditions.

Legislation or Policy description	Relevance to assessment
a) Protecting and enhancing… valued landscapes, sites of biodiversity… value and soils… (in a manner commensurate with their identified quality in the development plan) ***b)...recognising the economic and other benefits of the best and most versatile agricultural land.*** ***d)…minimising impacts on and providing net gains for biodiversity"*** ***e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil… pollution or land instability*** ***f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."*** **Paragraph 175, footnote 58:** ***"Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality."*** **Note: Best and most versatile land is defined as land in grades 1, 2 and 3a of the Agricultural Land Classification.**	

20.2.3 The Government published draft NPS EN1-EN5 (Department for Energy Security and Net Zero (DESNZ), 2023a; DESNZ, 2023b)) for consultation in September 2021 and subsequently in March 2023. The 2011 NPSs remain in force until the review is approved (designated) and under proposed transitional arrangements the 2023 amendments will only have effect in relation to applications for development consent accepted for examination after designation. However, the draft emerging NPSs can potentially be relevant planning considerations. Therefore, Rampion 2 has kept abreast of the potential changes to the energy NPSs and incorporated any updates where required in the ES.

20.2.4 The following emerging national planning policies are relevant to the assessment of the effects on soils and agriculture receptors:

- *Draft Overarching National Policy Statement for Energy (EN-1)*, (DESNZ, 2023a); and
- *Draft National Policy Statement for Electricity Networks Infrastructure (EN-5)*, (DESNZ, 2023b).

20.2.5 There are no emerging expectations or changes relevant to the assessment of the effects on soils and agriculture receptors from the current Overarching NPS EN1

for Energy (DECC, 2011a) and NPS EN5 for Electricity Networks Infrastructure (DECC, 2011b) listed in **Table 20-1**.

Local planning policy

20.2.6 **Table 20-2** lists the local planning policy relevant to the assessment of the potential effects on soils and agriculture receptors.

Table 20-2 Local planning policy relevant to soils and agriculture

Policy description	Relevance to assessment
Adopted Arun Local Plan 2011-2031 (July 2018) (Arun District Council, 2018)	
Section 11 of the Arun Local Plan sets out the requirements for development in relation to soils (Policy SO DM1). In particular: **"*the use of Grades 1, 2 and 3a of the Agricultural Land Classification for any form of development not associated with agriculture, horticulture or forestry will not be permitted unless need for the development outweighs the need to protect such land in the long term.*** ***The requirement to protect the best and most versatile land can be outweighed if it is demonstrated through sustainability and options appraisals that:*** ***a. Preservation of land of lower agricultural quality has greater benefits in terms of ecosystem services (for example carbon storage, flood water retention, support of biodiversity);*** ***b. That any site preferred for development is demonstrated to be the best and most sustainable option, including but not limited to the terms of land quality, ecosystem services, infrastructure and proven need; and*** ***[…] Development will not be permitted unless:*** ***d. The applicant has submitted sustainability and options appraisals, mitigation measures, and a soil resources plan for the development site;***	At each stage of its development, the design of Rampion 2 has taken into account available information on soils including ALC grades, particularly where these confirm or indicate the likely presence of best and most versatile agricultural land, or where soils are within sites rich in biodiversity. This information has been considered in the design to minimise the potential impacts to soil resources, and the best quality agricultural land (Grade 1 and 2) through the embedded environmental measures presented in **Table 20-17**. A Soil and ALC Survey of land within the proposed DCO Order Limits has been completed and the findings have been considered in the final design and used to update the assessment. Results of the survey are available for some land within the proposed DCO Order Limits, as detailed in the baseline conditions in **Section 20.6**. Where practical, the design of the Proposed Development has sought to avoid areas of best and most versatile (BMV) agricultural land, as identified using the Ministry of Agriculture Fisheries and Food (MAFF) soils mapping and agricultural land classification system (1988). The nature of the onshore elements of the Proposed Development is such that following construction the majority of the soils and agricultural land within the proposed DCO Order limits will be restored to baseline condition (with the

Policy description	Relevance to assessment
e. Site appraisal documents submitted by the applicant must demonstrate that consideration has been given to DEFRA's Soil Strategy for England; ***f. The productivity of the land is demonstrated using a methodology for assessing gross margins as contained in the Arun Soils and Agricultural Land Assessment Report; and*** ***g. The applicant has submitted a comprehensive soil resources plan for the development site which demonstrates that care will be taken to preserve the soil resource, such that it can be incorporated into a Productive Green Environment following development*".**	exception of any permanent infrastructure). During the operation and maintenance phase there will be minimal change to the current land use. Information to inform a soil resources plan has been completed in the form of the soil and ALC Survey in accordance with the MAFF guidance (1988). This has informed the **Outline Soil Management Plan (SMP)** (Document Reference 7.4) which forms part of the **Outline Code of Construction Practice (CoCP)** (Document Reference 7.2) and which will be issued to contractors and must be complied with during construction of Rampion 2. The **Outline SMP** (Document Reference 7.4) details the measures to protect soil resources from damage during the construction phase. Soils excavated for Rampion 2 will be reused within the onshore part of the proposed DCO Order Limits wherever possible. The assessment of effects is outlined in **Section 20.9, Section 20.10** and **Section 20.11**.
Mid Sussex District Plan 2014-2031 (2018) (Mid Sussex District Council, 2018)	
Chapter 4 of the Mid Sussex District Plan sets out the district's policies in relation to developments. DP38 Biodiversity touches on the importance of soils and states that: **"*Valued soils will be protected and enhanced, including the best and most versatile agricultural land, and development should not contribute to unacceptable levels of soil pollution.*"**	At each stage of its development, the design of Rampion 2 has taken into account information on soils including ALC grades, particularly where these confirm or indicate the likely presence of best and most versatile agricultural land, or where soils are within areas rich in biodiversity. This information has been considered in the design to minimise the potential impacts to soil resources, including the best quality agricultural land (Grade 1 and 2) through the embedded environmental measures presented in **Table 20-17**. A Soil and ALC Survey of land within the proposed DCO Order Limits has been completed and the findings have been considered in the final design and used to

Policy description	Relevance to assessment
	update the assessment. Results of the survey are available for some land within the proposed DCO Order Limits, as detailed in the baseline conditions in **Section 20.6**. Where practical, the design of the Proposed Development has sought to avoid areas of BMV agricultural land, as identified using the MAFF soils mapping and agricultural land classification system (1988). The nature of the onshore elements of the Proposed Development is such that following construction the majority of the soils and agricultural land within the proposed DCO Order limits will be restored to baseline condition (with the exception of any permanent infrastructure). During the operation and maintenance phase there will be minimal change to the current land use. Information to inform a Soil Resource Plan has been completed in the form of the Soil and ALC Survey in accordance with the MAFF guidance (1988). This has informed the **Outline SMP** (Document Reference 7.4) to be implemented as part of the **Outline CoCP** (Document Reference 7.2) and which details the measures to protect soil resources from damage during the construction phase. Soils excavated for Rampion 2 will be reused within the onshore part of the proposed DCO Order Limits wherever possible. The assessment of effects is outlined in **Section 20.9, Section 20.10** and **Section 20.11**.
South Downs Local Plan 2014-2033 (2019) (South Downs National Park, 2019)	
Core Policy SD2 of the South downs Local Plan states that developments should "*Conserve and enhance soils, use soils sustainably and protect the best and most versatile agricultural land*".	At each stage of its development, the design of Rampion 2 has taken into account available information on soils, including soils within sites rich in biodiversity and the best quality agricultural land (Grade 1 and 2) through the embedded environmental measures presented in **Section 20.7**.

Policy description	Relevance to assessment
The Local Plan is informed by the South Downs Ecosystems Services map (South Downs National Park (SDNP), 2022), which shows the relative capacity and demand for ecosystem services including carbon storage. Carbon Storage Management Zones have been identified for areas where people benefit from carbon storage in vegetation and soil. Within the proposed DCO Order Limits, most of the land is shown in Carbon Storage Management 'Zone A4. Improve', with localised areas near Warningcamp and south of Sullington Hill shown as 'Zone A1. Protect'. The classifications are based upon mapped habitat types in available literature rather than soil type.	In relation to carbon storage in soil, this is considered in the assessment of soil sensitivity in relation to soil functions. Peatlands would be classed as very high sensitivity due to their key role in soil organic matter storage, no peat has been identified in the baseline review in **Section 20.6** and the soils in the Study Area are expected to have low to medium organic carbon levels). Soils in the Study Area are in agricultural use, and activities such as ploughing can result in the loss of organic carbon from arable land. Preservation of soil organic matter during the construction phase of the Proposed Development is addressed through the implementation of an **Outline SMP** (Document Reference 7.4) which details the measures to protect soil resources from damage during the construction phase. The main aim of the **Outline SMP** (Document Reference 7.4) and final SMP is to maintain soil health and structure during soil handling, which in turn will protect soil organic matter. The assessment of effects is outlined in **Section 20.9, Section 20.10** and **Section 20.11**.
Draft Horsham District Local Plan 2019-2036 (2018)	
Spatial Objective 9 of 3.17, of the Horsham Local Plan is: To safeguard and enhance the environmental quality of the District, ensuring that development brings forward environmental net gains including biodiversity enhancements, and minimises the impact on environmental quality including air, soil, water quality and the risk of flooding.	Safeguarding of soil resources will be achieved through the implementation of the **Outline SMP** (Document Reference 7.4), as part of the **Outline CoCP** (Document Reference 7.2), which will protect soil resources from damage during the construction phase. This is an embedded environmental measure (C-183), as presented in **Table 20.7**. Soils excavated for Rampion 2 will be reused within the onshore part of the proposed DCO Order Limits wherever possible. The assessment of effects is outlined in **Section 20.9, Section 20.10** and **Section 20.11**.

Other relevant information and guidance

20.2.7 A summary of other relevant information and guidance relevant to the assessment undertaken for soils and agriculture is provided here:

- *The Government's Guide to Assessing Development Proposals on Agricultural Land* (Natural England, 2021) states that Natural England must be consulted for development proposals that are both: likely to cause the loss (or likely cumulative loss) of 20ha or more of BMV land; and, not in accordance with an approved development plan.
- *Natural England's Technical Information Note TIN049* (Natural England, 2012) states that the ALC agricultural land grading system, which takes into account climate, site and soil characteristics, is used by Natural England to give advice to planning authorities when development is proposed on agricultural land or other greenfield sites that could potentially grow crops.
- The Government's *Safeguarding our Soils strategy* (Department for Environment, Food & Rural Affairs (Defra), 2011), aims to help developers and others manage soil sustainably and protect soil functions, and is supported by the Defra *Construction Code of Practice on the Sustainable Use of soils on Construction Sites* (Defra, 2009), this can inform development design, construction and after-care phases.
- The Government's *Planning Practice Guidance: Natural environment* (Department for Levelling Up, Housing and Communities (DLUHC) and MHCLG, 2019) advises that soil is an essential natural capital resource that provides important ecosystem services, *for* example as a growing medium for food, timber and other crops; as a store for carbon and water; as a reservoir of biodiversity; and as a buffer against pollution (para. 8-002-20190721).
- Policy 3 of the *A Green Future: Our 25 Year Plan to Improve the Environment* (Defra, 2018) is to improve soil health and restore and protect the UK's peatlands, and Goal 5 states that the government wants all of England's soils to be managed sustainably by 2030.
- *Advice on Soil Management* (Natural Capital Committee, 2019) states that *"once the decision has been taken to develop an area of land, it is important to retain as many healthy soil functions as practicable by careful management of the soils during construction".*

20.3 Consultation and engagement

Overview

20.3.1 This section describes the stakeholder engagement undertaken for Rampion 2. This consists of the outcome of, and response to, the Scoping Opinion (Planning Inspectorate, 2020) in relation to the soils and agriculture assessment, the Evidence Plan Process (EPP), non-statutory consultation and Rampion 2's statutory consultation. An overview of consultation and engagement undertaken for Rampion 2 relevant to the EIA is outlined in **Section 5.4** of **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5).

20.3.2 Given the social distancing restrictions which have been in place due to the COVID-19 pandemic from 2020 to 2022, technical consultation relating to soils and agriculture has taken place online, primarily in the form of conference calls using Microsoft Teams.

Scoping Opinion

20.3.3 Rampion Extension Development Limited (RED) submitted a Scoping Report (RED, 2020) and request for a Scoping Opinion to the Secretary of State (administered by the Planning Inspectorate) on 2 July 2020. A Scoping Opinion was received on 11 August 2020 (Planning Inspectorate, 2020). The Scoping Report (RED, 2020) sets out the proposed soils and agriculture assessment methodologies, outline of the baseline data collected to date and proposed, and the scope of the assessment. **Table 20-3** sets out the comments received in Section 5 of the Planning Inspectorate Scoping Opinion '*Aspect based scoping tables – Onshore'* insofar as it relates to soils and agriculture and how these have been addressed in this ES. A full list of the Planning Inspectorate Scoping Opinion comments and responses is provided in **Appendix 5.2: Response to the Scoping Opinion, Volume 4** of the ES (Document Reference 6.4.5.2). Regard has also been given to other stakeholder comments that were received in relation to the Scoping Report.

Table 20-3 Planning Inspectorate Scoping Opinion responses – soils and agriculture

Planning Inspectorate ID number	Scoping Opinion comment	How this is addressed in this ES
5.3.1	*"The Inspectorate is content that there is unlikely to be a significant loss of agricultural land due to operational and maintenance or decommissioning activities and therefore agrees that this matter can be scoped out of the soils and agriculture assessment."*	This comment is acknowledged. Loss of agricultural land due to operation and maintenance or decommissioning activities has been scoped out of this ES chapter. It is anticipated that during decommissioning, the onshore electrical cables will be left in-situ with ends cut, sealed and buried as outlined in Section 4.~~9~~8 of **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4) to minimise environmental effects associated with removal.
5.3.2	*"The Inspectorate is content that there is unlikely to be a significant loss of soil due to operational and maintenance activities and therefore agrees that this*	This comment is acknowledged. Loss of or damage to soil resources during operation and maintenance phase has been scoped out of this ES chapter as soil resources will be protected by the site-specific **Outline SMP** (Document Reference 7.4) produced using

Planning Inspectorate ID number	Scoping Opinion comment	How this is addressed in this ES
	matter can be scoped out of the soils and agriculture assessment."	information gathered in the baseline surveys conducted in 2021 (**Section 20.6**).
5.3.3	*"The Inspectorate welcomes the use 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). The Inspectorate also expects that '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."*	The chapter considers the many ecosystem services that soils provide (flood mitigation, food production, supporting biodiversity etc.), these will be protected by embedded environmental measures (**Table 20-17**).
5.3.4	*"It is considered that the handling, storage and reinstatement of soil should be conducted in accordance with a Soil Management Plan (SMP) which sets out good practice mitigation to minimise adverse effects on the soil resource. The Applicant should refer to guidance set out in the Department for Environment, Food and Rural Affairs (Defra) 'Construction Code of Practice for the Sustainable Use of Soils on Construction Sites'. The Scoping Report identifies that a SMP is planned in Chapter 6.2, however,*	An **Outline SMP** (Document Reference 7.4) has been developed and is provided alongside this ES as part of the DCO Application. The **Outline SMP** (Document Reference 7.4) will be implemented to protect soil resources from damage during the construction phase. This is an embedded environmental measure (C-183), as presented in **Table 20-17**. The **Outline SMP** (Document Reference 7.4) makes references to relevant guidance from the Defra *Construction Code of Practice for the Sustainable use of Soils on Construction Sites* (Defra, 2009) and guidance on soil handling from the Institute of Quarrying's *Good Practice for Handling soils in Mineral Workings* (Institute of Quarrying, 2021). The **Outline SMP** (Document Reference 7.4) forms part of the **Outline CoCP**

Planning Inspectorate ID number	Scoping Opinion comment	How this is addressed in this ES
	there was no references to this in Chapter 6.4. The Inspectorate welcomes and encourages consistent cross references between the aspect chapters. The ES should address how soils and agriculture will be managed and describe any assumptions made. Any mitigation required should be explained in the ES and appropriately secured."	(Document Reference 7.2) which will be issued to contractors and must be complied with during construction of Rampion 2. The **Outline SMP** (Document Reference: 7.4) and environmental measure C-183 also commit Rampion 2 to full Soil and ALC Survey coverage within the proposed DCO Order Limits during pre-construction so that measures to be included in the Final SMP can be defined during pre-construction for all soil types and all agricultural land grades present. This ES addresses how soils and agricultural land will be managed during the construction phase of the Proposed Development and relevant mitigation will be described and secured in the **Commitments Register** (Document Reference 7.22). Commitments relevant to soils and agriculture are detailed in **Table 20-17**.
5.3.5	*"The consideration of the potential impacts on agricultural land should also be assessed in the context of socio-economics, namely those financial effects on productive farmland and small holdings during construction, operation and decommissioning. With this in mind, the Inspectorate welcomes the acknowledgement of the inter-relationship between the socio-economic and soils/agriculture."*	The assessment of effects of Rampion 2 on farming including financial effects is provided in **Section 20.9**.
5.3.6	*"The Scoping Report commits to onsite soil survey/sampling. The*	The survey approach was agreed with Natural England (the statutory consultee) to confirm the proposed

Planning Inspectorate ID number	Scoping Opinion comment	How this is addressed in this ES
	Inspectorate welcomes this survey and recommends that efforts should be made to agree the survey locations with relevant consultation bodies."	investigative method and survey locations. Partial Soil and ALC Survey was conducted in 2021 (reported in **Appendix 20.1: Detailed Agricultural Land Classification Report, Volume 4** of the ES (Document Reference: 6.4.20.1) and it was planned that the survey would cover the entire proposed DCO Order Limits. However, surveys during this phase of work were limited due to the identification of a moderate or higher risk of unexploded ordnance (UXO) in all potential route options through the former South Downs Training Area (SDTA), much of which is within the South Downs National Park (SDNP). The methodology for the collection of soil and ALC data for Rampion 2 remains in accordance with Natural England's requirements, and the remaining surveys to cover all areas of the proposed DCO Order Limits will be completed during pre-construction. This is an embedded measure in **Table 20-17**. The available survey data which informs the assessment is presented in **Section 20.6**.
5.3.7	*"Careful consideration should be given to the siting of the onshore infrastructure in relation to grade 1 and grade 2 agricultural land; the potential temporary and permanent loss of Agricultural Land Classification (ALC) land should be assessed within the ES. The potential effects on soil quality should be considered and relevant mitigation measures proposed where significant effects are likely to occur."*	BMV land has been considered throughout the design of Rampion 2 as an environmental constraint in the design of the Proposed Development (refer to **Chapter 3: Alternatives, Volume 2** of the ES (Document Reference: 6.2.3). BMV agricultural land has been further defined to confirm the ALC grades within the onshore part of the proposed DCO Order Limits through the field surveys undertaken in 2021 (**Section 20.6**). The onshore substation footprint at Oakendene has been surveyed to confirm its ALC grade and has been found to be mainly Subgrade 3b (77 percent), some Subgrade 3a was also

Planning Inspectorate ID number	Scoping Opinion comment	How this is addressed in this ES
		identified (19 percent) and a small amount of Grade 2 (4 percent). This means that 77 percent is not best and most versatile land, and 23 percent does meet the criteria of best and most versatile land. The existing National Grid Bolney substation extension works will use existing accesses and an existing compound, limiting temporary land take. The area of permanent development is limited to 0.63ha of land east of the existing National Grid Bolney substation, some of which has been used previously as a construction compound. This land has not been surveyed to date and is shown as provisional ALC Grade 3 (provisional ALC mapping does not subdivide Grade 3 into Subgrades 3a and 3b). However, the Predictive BMV Land Assessment map (Natural England, 2010), shows the land as having a low likelihood of BMV land (≤20 percent area BMV). The cables and joint bays between landfall and the onshore substation will run through some BMV land, however, other than where small ground level infrastructure is needed (e.g., access covers, each ~1m^3, at joint bays) the agricultural land use can be reinstated during the construction phase. The embedded measures to protect soils during handling and storage are in **Table 20-17**. The assessment of effects is outlined in **Section 20.9, Section 20.10** and **Section 20.11**.

Evidence Plan Process (EPP)

20.3.4 The EPP has been set up to provide a formal, non-legally binding, independently chaired forum to agree the scope of the EIA and Habitats Regulations Assessment (HRA), and the evidence required to support the application for development consent. The EPP commenced in January 2020 and has continued throughout the EIA to inform the ES.

20.3.5 For soils and agriculture, further engagement has been undertaken via the EPP Expert Topic Group (ETG) Onshore Ecology, Hydrology and Nature Conservation (onshore) ETG Meeting.

20.3.6 The soils and agriculture section of the first ETG meeting on 28 October 2020 covered the scope of the soils and agriculture assessment, soil types and potential for damage. This was attended by West Sussex County Council (WSCC), the Environment Agency, Sussex Wildlife Trust, the South Downs National Park Authority (SDNPA), Natural England, and the Royal Society for the Protection of Birds (RSPB).

20.3.7 A second ETG meeting was held for Onshore Ecology, Hydrology and Nature Conservation on 23 March 2021 attended by WSCC, Adur and Worthing Council, Sussex Ornithological Society, the Environment Agency, SDNPA, Sussex Wildlife Trust, Natural England, RSPB and Mid Sussex District Councils.

20.3.8 The soils and agriculture section of the third ETG meeting on 23 March 2021 covered an update on progress since scoping, consultation progress, progress update on the Preliminary Environmental Information Report (PEIR) (RED, 2021) assessment, overview of proposed survey observation points, initial potential embedded environmental measures and effects and next steps in terms of completion of ALC surveys and finalisation of the ES.

20.3.9 The soils and agriculture section of the fourth ETG meeting on 03 November 2021 provided a progress update including survey scope refinement and a summary of feedback received from the first Statutory Consultation exercise (July – September 2021).

20.3.10 A fifth ETG meeting was held on the 21 November 2022 for soils and agriculture and ground conditions which covered an update on progress, survey update, discussion on feedback from the first statutory consultation exercise (July – September 2021), mitigation and commitments and discussion on any emerging queries with respect to the second statutory consultation exercise (October – November 2022).

20.3.11 Further information is provided in the **Evidence Plan** (Document Reference 7.21).

Non-statutory consultation

Overview

20.3.12 Non-statutory consultation captures all consultation and engagement outside of Statutory Consultation and has been ongoing with a number of prescribed and non-prescribed consultation bodies and local authorities in relation to soils and

agriculture. A summary of the non-statutory consultation undertaken since completion of the Scoping Report (RED, 2020) is outlined in this section.

Natural England

20.3.13 The ALC and soil survey approach was confirmed with Natural England (the Statutory Consultee) to confirm the proposed soil sample locations and density. Surveys were conducted in 2021 and initial results presented at the ETG meeting held on the 21 November 2022.

Non-statutory consultation exercise – January / February 2021

20.3.14 RED carried out a non-statutory consultation exercise for a period of four weeks from 14 January 2021 to 11 February 2021. This non-statutory consultation exercise aimed to engage with a range of stakeholders including the prescribed and non-prescribed consultation bodies, local authorities, Parish Councils and general public with a view to introducing the Proposed Development and seeking early feedback on the emerging designs.

20.3.15 There were no key themes emerging from non-statutory consultation exercise in January 2021 specifically relating to soils and agriculture.

20.3.16 Further detail about the results of the non-statutory consultation exercise can be found in the **Consultation Report** (Document Reference 5.1).

Statutory Consultation

First Statutory Consultation exercise – July to September 2021

20.3.17 Rampion 2's first Statutory Consultation exercise ran from 14 July to 16 September 2021, a period of nine weeks. The PEIR (RED, 2021) was published as part of Rampion 2's first Statutory Consultation exercise which provided preliminary information on soils and agriculture within Chapter 21: Soils and agriculture.

20.3.18 **Table 20-4** provides a summary of the key themes of the feedback received in the first Statutory Consultation exercise in relation to soils and agriculture and outlines how the feedback has been considered in this ES chapter. A full list of all comments received during the first Statutory Consultation exercise in 2021 and the responses to those comments is provided in the **Consultation Report** (Document Reference 5.1).

Table 20-4 First statutory consultation exercise (July - September 2021) feedback

Stakeholder	Theme	How this is addressed in this ES and DCO Application
Mid Sussex District Council	Mid-Sussex District Council states that "*whilst the permanent loss of any agricultural land is regrettable, this will be*	The baseline information presented in **Section 20.6** records that the onshore substation footprint at Oakendene has been surveyed to confirm its ALC grade and has been

Stakeholder	Theme	How this is addressed in this ES and DCO Application
	restricted to the onshore substation on Grade 3 land so will not result in a reason to resist the proposals."	found to be mainly Subgrade 3b (77 percent) and some Subgrade 3a (19 percent) and a small amount of Grade 2 (4 percent) was also identified. This means that 77 percent is not considered best and most versatile land, and 23 percent does meet the criteria of best and most versatile land. Landscaping and drainage associated with the Oakendene substation will also result in the loss of some agricultural land, however the natural in situ soils will largely be retained, and as detailed in **paragraph 20.6.35** the ALC grade of this area is mainly Subgrade 3b. The existing National Grid Bolney substation extension works will utilise existing accesses and an existing compound, limiting temporary land take. The area of permanent development is limited to 0.63ha of land east of the existing National Grid Bolney substation, some of which has been used previously as a construction compound. As described in **Section 20.6**, this land has not been surveyed to date and is shown as provisional ALC Grade 3, however, the Predictive BMV Land Assessment map (Natural England, 2010) shows the land as having a low likelihood of BMV land (≤20 percent area BMV).
	Mid-Sussex District Council notes that the application for development consent will include "*a comprehensive reinstatement plan where the underground cables will be placed, as part of the DCO application. This is welcomed.*"	The measures to be taken during handling/excavation, storage and reinstatement of soils are detailed in the **Outline SMP** (Document Reference 7.4).The **Outline SMP** (Document Reference 7.4) has been informed by site-specific soil survey information obtained in 2021 during the soil and ALC survey. The results of the survey are detailed in the baseline information in **Section 20.6**.

Stakeholder	Theme	How this is addressed in this ES and DCO Application
		The **Outline SMP** (Document Reference 7.4) is included as part of the **Outline CoCP** (Document Reference 7.2). Once all of the proposed DCO Order Limits area has been surveyed, the soil and ALC data obtained will be used to update the **Outline SMP** (Document Reference 7.4) to a Final SMP before construction begins.
Natural England	Natural England states that the methodology used in relation to the onshore cable trenches should include soil management practices sufficient to allow habitat recovery.	The measures to be taken during handling/excavation, storage and reinstatement of soils are detailed in the **Outline SMP** (Document Reference 7.4). The **Outline SMP** (Document Reference 7.4) is informed by site-specific soil survey information obtained in the 2021 Soil and ALC Survey. The results of the survey are detailed in the baseline information in **Section 20.6**. The **Outline SMP** (Document Reference 7.4) is included as part of the **Outline CoCP** (Document Reference 7.2). The soil survey and the **Outline SMP** (Document Reference 7.4) have been completed by qualified soil specialists. An **Outline Vegetation Retention and Removal Plan** (Document Reference: 8.87 **[REP5-125]**) ~~A **Vegetation Retention Plan** is included within **Appendix B** of the **Outline CoCP**, (Document Reference 7.2)~~ as detailed in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22). This will interact with the **Outline SMP** (Document Reference 7.4). For example, in relation to the seeding of excavated and stockpiled or restored soils, or decision not to seed soils, the decision will be based on the most appropriate measures, defined

Stakeholder	Theme	How this is addressed in this ES and DCO Application
		by an ecologist, to promote habitat recovery following reinstatement.
	Concern that in areas where it is intended that trenchless crossing (Horizontal Directional Drilling (HDD)) will be used to avoid sensitive receptors that this may not be feasible due to ground conditions, resulting in trenching be used.	Ground investigation will be completed pre-construction specifically to confirm the ground conditions at required trenchless crossing locations. Based on the available desk-based information, no significant constraints to the feasibility of trenchless crossing beneath sensitive areas within the onshore part of the proposed DCO Order Limits have been identified.
	Concern over the potential for trenching through the South Downs National Park (SDNP) to result in long term 'scarring' to the landscape. Based on knowledge of the difficulties of the soil reinstatement work in this area, Natural England expect to see this aspect thoroughly considered by the ES stage.	Soils in the proposed DCO Order Limits within the SDNP have not been surveyed to date. Parts of the SDNP were historically used for military training as the South Downs Training Area (SDTA) and as a result there are moderate to high unexploded ordnance (UXO) hazard zones within the SDNP which are coincident with the proposed DCO Order Limits. The required actions to mitigate the UXO risk sufficiently in these areas to enable Soil and ALC Survey, and other pre-construction surveys, to proceed will involve a combination of non-intrusive survey and intrusive survey to identify whether avoidance, investigation or removal/ clearance of anomalies is needed before other surveys/other works can progress. Once sufficient UXO clearance is completed, the Soil and ALC Survey will be completed for all areas within the proposed DCO Order Limits and the **Outline SMP** (Document Reference 7.4) will be updated to include any new measures or amend existing measures to protect soils within the SDNP. This will be completed during pre-construction.

Stakeholder	Theme	How this is addressed in this ES and DCO Application
		Given the likely presence of shallow silty soils over chalk within the SDNP / former SDTA, and this soil's distinctive vegetation cover of herb-rich downland, the **Outline SMP** (Document Reference 7.4) includes specific measures for these soils. These include suitable seeding of soil stockpiles, to be confirmed by an ecologist, and measures to protect excavated chalk to assist with returning the soil drainage conditions to baseline following reinstatement. The requirement for these measures to be updated in the Final SMP, once Soil and ALC Survey is completed, is an embedded measure in **Table 20-17**.
	Natural England agree with the proposed Study Area for the soils and agriculture assessment (including the ALC and soil survey, which will include all temporary land-take areas).	Partial Soil and ALC survey (of areas within the proposed DCO Order Limits that are not affected by moderate or higher UXO risk) has been completed to date. Where survey data is not yet available, the assessment has used available desk-based information on soil types and likely ALC grades. As above, commitment C-183 in **Table 20-17** ensures that sufficient information will be obtained pre-construction in order for the Final SMP to include suitable measures for the handling/excavation, storage and reinstatement of soils for all areas of temporary (and permanent) land take. The full survey information will be used to inform the Final SMP.
	Concern that the temporal scope of the soils and agriculture assessment within the PEIR is limited to the construction phase.	Loss of or damage to soil resources during operation and maintenance and decommissioning phases has been scoped out of this ES chapter (as agreed by the Planning Inspectorate (Planning Inspectorate, 2020)) in the Scoping Opinion as soil resources will be protected by the

Stakeholder	Theme	How this is addressed in this ES and DCO Application
		site-specific **Outline SMP** (Document Reference 7.4) produced using information gathered in the baseline surveys conducted in 2021 (**Section 20.6**). Any disruption to soils or agricultural land due to operation and maintenance activities are likely to be minimal and short term, with no net loss of agricultural land. The use of joint bays (with access chambers) minimises the requirement to excavate lengths of cable in the event of a fault, as these can be pulled from one joint bay to another. In relation to decommissioning, it is anticipated that the onshore electrical cables will be left in-situ with ends cut, sealed and buried as outlined in Section 4.~~8~~9 of **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4) to minimise environmental effects associated with removal.
	Comment that the table in the assessment methodology in the soils and agriculture assessment in the PEIR does not clarify that agricultural land / soils that are not classed as best and most versatile are also a potential receptor.	**Table 20-18** now includes descriptions for all ALC grades. ALC grades are assigned a sensitivity in **Table 20-18** with the most versatile agricultural land, grades 1 and 2, being the most sensitive. At each stage of its development, the design of Rampion 2 has taken into account information on soils including ALC grades, particularly where these confirm or indicate the presence of best and most versatile agricultural land. The presence of other sensitive soil resources, such as those within statutory designated nature conservation areas and Ancient Woodland has also been considered, and Ancient Woodland is now avoided by the Proposed Development.

Stakeholder	Theme	How this is addressed in this ES and DCO Application
		The **Outline SMP** (Document Reference 7.4) includes soil handling measures for all identified and anticipated soil types and ALC grades within the proposed DCO Order Limits. Where several different soil / agricultural land receptors are present, the assessment of effects on soils and agricultural land (**Section 20.9**) uses a conservative average sensitivity for the soil receptors to assess the significance of the temporary and permanent effects.
	Natural England largely agree with the scoped-out aspects of the assessment (soil loss and land loss during operation, maintenance and decommissioning). It is acknowledged that loss of soil resource and agricultural land due to decommissioning activities has been scoped out of the assessment, however, it is also stated that decommissioning is anticipated to be restricted to the removal and reinstatement of the onshore substation site. However, no consideration has been made to how the substation site would be reinstated. It is currently implied that any surplus soil resource as a result of construction activities would be taken off site (C-31 and C-69).	Where possible, excavated soils will be reused within the proposed DCO Order Limits and handled in accordance with the **Outline SMP** (Document Reference 7.4), to minimise the quantity of waste soil generated. During construction the reuse of soil will be in accordance with a Materials Management Plan (C-7 and C-69, **Table 20-17**). The potential for soils to be retained and reused within the substation (e.g., for landscaping purposes) will be explored. Where soil cannot be replaced in its original location, testing of topsoil and subsoil to the applicable British Standards will be completed at the earliest opportunity to inform the potential reuse of these soils elsewhere within the proposed DCO Order Limits or at an offsite receptor site in compliance with the Definition of Waste: Code of Practice (C-256, **Table 20-17**). Details of how decommissioning will be implemented are provided in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4).
	Natural England notes that the assessment will be	At each stage of its development, the design of Rampion 2 has taken into

Stakeholder	Theme	How this is addressed in this ES and DCO Application
	based on the ALC and soil survey data for the temporary and permanent land take areas, and comments that the site-specific information should be utilised to contribute to route options/route refinement, and substation footprint/site design to help minimise BMV loss.	account information on soils including ALC grades, particularly where these confirm or indicate the likely presence of BMV agricultural land. This information has been considered in the design to minimise the potential impact to soil resources and agricultural land through embedded environmental measures presented in **Table 20-17**. Based on the soil and ALC survey information the onshore part of the proposed DCO Order Limits is expected to largely avoid the highest quality agricultural land, with most land surveyed to date being Subgrade 3b (not BMV). However, the assessment acknowledges that there is localised Grade 2 land and Subgrade 3a within the proposed DCO Order Limits, and the potential for BMV land in areas not surveyed to date, and where applicable based on the baseline information in **Section 20.6**, a conservative average of Subgrade 3a has been applied.
	Natural England welcomes the preparation of an Outline Soil Management Plan (OSMP), the avoidance of soil becoming waste and notes that a specialist land drainage consultancy should be engaged to undertake the preparation of preliminary pre- and postconstruction agricultural land drainage plan. The OSMP should include the type and volume of each soil type to be stripped; the nutrient status of the soil units to inform the potential suitability for biodiversity enhancement (where soils cannot be reinstated where	The **Outline SMP** (Document Reference 7.4) is included in the **Outline CoCP** (Document Reference 7.2). The soil survey and the **Outline SMP** (Document Reference 7.4) have been completed by qualified soil specialists. This includes soil types however it does not include soil volumes. All soil types and measures for their handling and storage will be confirmed in the Final SMP. During pre-construction, soil volumes will be confirmed in the MMP (and Soil Resource Plan - which will be integrated with, and may form a sub-section of, the MMP), which will interact with the Final SMP. Soil survey within the SDNP has been limited to date by unexploded ordnance constraints within the

Stakeholder	Theme	How this is addressed in this ES and DCO Application
	excavated); and where required, the location of soil storage and restoration, derived from the soil survey. For areas of temporary development, the ALC grade determined from soil survey should be used to inform the restoration criteria, with temporarily disturbed BMV land returned to the same quality as far as practicable to minimise loss. The ALC and soil survey should inform soil re- use opportunities when direct replacement is not possible. (i.e., the permanent land take areas). and all soils should be suitable for the planned end use. It is expected that soil data collected as part of the ALC surveys will be re-used to develop Soil Resources Plans. This soil data should be supplemented, where necessary, to provide coverage for all soils including those in non-agricultural use. The Soil Resource Plan should show the areas and type of topsoil and subsoil to be stripped, haul routes, the methods to be used, and the location, type and management of each soil stockpile.	former South Downs Training Area (SDTA) and in other areas due to land access constraints. Whilst this means that the **Outline SMP** (Document Reference 7.4) currently does not provide specific soil measures for soils within the SDNP and some other areas where survey has not been possible to date, a commitment is included in **Table 20-17** to ensure that sufficient information will be obtained pre-construction in order for the soils for the **Outline SMP** (Document Reference 7.4) to be updated to include suitable measures for the handling / excavation, storage and reinstatement of soils within the SDNP. Survey will be undertaken using the same density and approach as detailed in **Table 20-12**. Embedded environmental measure C-28 in **Table 20-17** includes a specialist drainage contractor / consultant being engaged prior to construction to develop the pre- and post-construction drainage plan on agricultural land.
	Natural England noted inconsistent terminology used for the potential	The terminology on impacts is now consistent in **Table 20-9, Table 20-16** and the assessment in **Section 20.9**. **Table 20-9** has been rationalised to

Stakeholder	Theme	How this is addressed in this ES and DCO Application
	impacts across Tables 21-8; 21-14 and section 21.9.	remove duplication in the identified potential effects.
	Natural England note that the Cumulative Effects Assessment (CEA) has been scoped out for agricultural land and soils, however, the potential cumulative permanent agricultural land take (including BMV) should be considered.	Cumulative effects have been considered for agricultural land and soils in **Section 20.10**.
South Downs National Park Authority	Concern over effects on forest soils and woodland/trees due to construction of the cables.	The Proposed Development outlined in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4) has avoided Ancient Woodland and ensured that all veteran trees will remain in-situ. **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22) outlines the embedded environmental measures to protect veteran trees and woodlands. All soils will be handled in accordance with a site-specific **Outline SMP** (Document Reference 7.4) based on soil information obtained from a soil and ALC survey.
West Sussex County Council	Concern over the construction methodology and timescales the working corridor may be left open, including haul routes, and soil left stockpiled, in relation to potential adverse effects on soil function.	Rampion 2 will implement the use of machinery with low ground pressure during topsoil stripping to minimise soil compaction where the soil conditions indicate that compaction is possible (C 12). Handling of soils will be in accordance with the **Outline SMP** (Document Reference 7.4) and soil storage time will be kept to the practicable minimum to prevent the soil deteriorating in quality, appropriate seeding of stockpiles will be undertaken to minimise the potential for soil erosion and nutrient

Stakeholder	Theme	How this is addressed in this ES and DCO Application
		loss and to maintain biological activity (see embedded environmental measures C-133 and C-183 **Table 20-17**).Topsoil stripped from different fields will be stored separately. Soils will be handled and stored in accordance with a site specific Soil Management Plan (SMP). The **Outline SMP** (Document Reference 7.4) for Rampion 2 has been produced by a qualified soil specialist based on information obtained from a soil and ALC survey. The final SMP will be developed by the Construction Contractor pre-construction (see commitment C-183 **Table 20-17**).
	West Sussex County Council notes there is the potential for adverse impacts to farming practices through the temporary loss of land availability, restricted access and disruption caused by temporary working areas and construction traffic, as well as to the soil resource itself. It is acknowledged in the PEIR that the financial effects on productive farmland have not been assessed, but the Council expects this to be fully assessed within the ES, and the methodology of which to be consulted upon with stakeholders.	The assessment of effects of Rampion 2 on farming including financial effects is included in **Section 20.9**.
	Concern over the potential for soil heating during operation of the cables.	The design of the cables selected for Rampion 2 is such that soil heating due to operation of the cables will be very limited (the cables will warm slightly, by no more than 1˚C). Further assessment of the effects of soil heating during the operational phase

Stakeholder	Theme	How this is addressed in this ES and DCO Application
		is therefore scoped out (see **Table 20-10**).
	West Sussex County Council wishes to see the minimisation of impacts whether short, medium, or long term upon the agricultural resource within the County, as per National Policy Statement for Energy (EN-1) (DECC, 2011), minimisation of impact to Best and Most Versatile agricultural land, and the permanent loss of agricultural land at the onshore substation minimised through the design phase.	At each stage of its development, the design of Rampion 2 has taken into account information on soils including ALC grades, particularly where these confirm or indicate the likely presence of BMV agricultural land. This information has been considered in the design to minimise the potential impact to soil resources and agricultural land through the embedded environmental measures presented in **Table 20-17**. Rampion 2 will implement the use of machinery with low ground pressure during topsoil stripping to minimise soil compaction where the soil conditions indicate that compaction is possible (C 12). Handling of soils will be in accordance with the **Outline SMP** (Document Reference 7.4) and soil storage time will be kept to the practicable minimum to prevent the soil deteriorating in quality (see embedded environmental measures C-133 and C-183, see **Table 20-17**). Topsoil stripped from different fields will be stored separately. Soils will be handled and stored in accordance with a site specific SMP. The **Outline SMP** (Document Reference 7.4) for Rampion 2 has been produced by a qualified soil specialist based on information obtained from a soil and ALC survey. The appointed Construction Contractor will ensure that the final SMP will be completed by a suitably qualified and experienced soil scientist or experience soil specialist pre-construction.

20.3.19 Following feedback to the first Statutory Consultation Exercise in 2021 and after further analysis, it was identified that some coastal residents did not receive

consultation leaflets as intended. Therefore, the first Statutory Consultation was reopened between 7 February 2022 to 11 April 2022 for a further nine weeks. No feedback or comments were received from the reopened first Statutory Consultation in relation to soils and agriculture.

Second Statutory Consultation Exercise – October to November 2022

20.3.20 The second Statutory Consultation Exercise was undertaken from 18 October 2022 to 29 November 2022. This was targeted supplementary consultation which focused on updates to the onshore cable route proposals which were being considered following feedback from consultation and further engineering and environmental works. As part of this second Statutory Consultation Exercise, RED sought feedback on the potential changes to the onshore cable route proposals to inform the onshore design taken forward to DCO Application.

20.3.21 **Table 20-5** provides a summary of the key themes of the feedback received in the second Statutory Consultation Exercise in 2022 in relation to soils and agriculture and outlines how the feedback has been considered in this ES chapter. A full list of all comments received during the second Statutory Consultation Exercise in 2022 and the responses to those comments are provided in the **Consultation Report** (Document Reference 5.1).

Table 20-5 Second Statutory Consultation Exercise (October – November 2022) feedback

Stakeholder	Theme	How this is addressed in this ES
Natural England	Natural England recommended that the impact assessment is based upon detailed soil and ALC surveys to determine precise areas of each ALC grade, split into permanent and temporary land take.	The assessment considers the permanent and temporary land take effects of Rampion 2, and, where available, uses soil and ALC survey data. Gaps in survey data and the actions taken to address this to provide a conservative assessment are detailed in **paragraph 20.5.3**.
	It is advised that both topsoil (typically top 25cm) and subsoil (typically remaining soil to 1.2m) require reinstatement.	The treatment of excavated topsoil and subsoil is detailed in the **Outline SMP** (Document Reference 7.4). Material management planning will be used to ensure that where possible, if soils cannot be returned to their original location (e.g., if replaced by below ground infrastructure / necessary engineered fill materials), that topsoils and subsoils are reused elsewhere within the proposed DCO Order Limits, or tested and stored appropriately so that they can be made available to receptor sites

Stakeholder	Theme	How this is addressed in this ES
		through compliance with the Definition of Waste Code of Practice (DoWCoP) (C-256, **Table 20-17**).
	Soil handling and storage measures – such as topsoil segregation from subsoil, suitable machinery for soil handling, assessment of whether soils are suitably dry for handling (compliance with the Institute of Quarrying's Good Practice for Handling soils in Mineral Workings [Institute of Quarrying, 2021]) and Natural England advises on the timing of soil handling that this should normally being avoided during November to March inclusive.	The **Outline SMP** (Document Reference 7.4) contains measures for soil handling including segregation of topsoil and subsoil, use of the Institute of Quarrying (2021) guidance to confirm soils are suitably dry for handling, use of suitable machinery for soil handling. It is also acknowledged in the **Outline SMP** (Document Reference 7.4) that soil handling between November to March inclusive is not recommended.
	Natural England advises that the SMP should be a key document feeding into the Materials Management Plan (MMP).	The use of an MMP post consent and the interaction of the SMP with the MMP is incorporated in embedded measure C-69 in **Table 20-17**.
Poling Parish Council	Soil and agricultural land quality: In relation to LACR-01a, Poling Parish Council is concerned about possible negative effects on soil condition and agricultural land quality, and drainage (including potential for increased surface water flooding), due to excavation during the construction phase of Rampion 2.	The measures to protect soil structure and soil health during soil handling and storage are detailed in the **Outline SMP** (Document Reference 7.4). Embedded environmental measure C-28 in **Table 20-17** ~~(C-28)~~ includes measures to prevent the existing land drainage regime being compromised as a result of the construction phase.
Norfolk Estate Farms Limited	The response notes in relation to soil and agriculture, that the PEIR SIR assesses that for both LACR-01a and LACR-01c there would be no change to the overall assessment outcomes and conclusions provided in Chapter 21: Soils and agriculture of the PEIR, and that without the results from the agricultural land	The selected onshore cable route through the SDNP is within the area of moderate or high UXO risk and has, therefore, not yet had soil and ALC survey. This will be completed during pre-construction and included as part of commitment C-183 in **Table 20-17**. The available survey data which informs the assessment is presented in **Section 20.6**.

Stakeholder	Theme	How this is addressed in this ES
	classification (ALC) surveys, confirmation, and direct comparison of the impacts on specific ALC grades cannot be assessed. In relation to the disturbance to land during cable construction, the risk of loss of seed-mix from topsoil due to prolonged storage is raised, in addition to dust generated during construction potentially impacting on surrounding areas of vegetation. The response also summarises comments reported to be made by local farmers involved in the Rampion 1 project. Issues raised include mixing of excavated topsoil and subsoil, topsoil stockpiles being uncovered for long periods and subject to rain erosion, failed re-planting of hedgerows (where trenchless crossings were not used) and lasting damage to land quality due to poor reinstatement of soils.	Soil stockpiles will be present for the shortest practicable timeframe through materials management planning (**Table 20-17,** C-133). The development of the **Outline Vegetation Retention and Removal Plan** (Document Reference: 8.87 and~~)~~ **[REP5-125]**-) is an embedded measure (C-220) ~~**Vegetation Retention Plans** in **Appendix B** of the **Outline CoCP** (Document Reference 7.2) is an embedded measure (C-220)~~ detailed in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22). This will accompany the **Outline CoCP** (Document Reference 7.2) and will interact with the **Outline SMP** (Document Reference 7.4) e.g., in relation to the seeding of excavated and stockpiled or restored soils, or decision not to seed soils, based on the most appropriate measures, defined by an ecologist, to promote habitat recovery following reinstatement. Soil handling measures, including the separate handling and storage of topsoil and subsoil are detailed in the **Outline SMP** (Document Reference: 7.4). **Table 20-17** includes commitments to reduce the likelihood of soil erosion (including C-11, C-12, C-13, C-19 and C-132).
West Sussex County Council (WSCC)	The response includes comments on reinstatement of land and refers to the experience of Rampion 1, including planting failures following reinstatement. A comprehensive, fully resourced and implemented maintenance plan is described by WSCC as essential, with regular, timely inspections (at an agreed	The **Outline SMP** (Document Reference: 7.4) includes monitoring and aftercare requirements. Details of the soil profile where surveys have been completed are included in **Appendix 20.1: Detailed Agricultural Land Classification Report, Volume 4** of the ES (Document Reference: 6.4.20.1).

Stakeholder	Theme	How this is addressed in this ES
	frequency) to ensure planting succeeds at an early stage in the plan. It is noted that the soil type /profile has not been described in 2.4.5.4 of the PEIR SIR. WSCC comments that *"If the ground has been used for agricultural use and is of a clay soil (unlikely but possible), then decompaction measures may be required to break any clay pans within the soils."* Storage of soil in the floodplain at TC-16 is noted to require careful consideration. In relation to commitment C-13, and soil compaction, the Council states that new temporary ground protection must be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil (as per BS 5837:2012, section 6.2.3).	**Table 20-17** includes commitments in relation to storage of soils in floodplains (C-131 and C-132). In relation to embedded measure C-13 (**Table 20-17**), the selection of measures to lower the risk of ground compaction will be undertaken by a suitably trained / experienced person.
Mid Sussex District Council	Restoration of agricultural land following open trenching is welcomed, also the use of trenchless crossing, and the avoidance of Ancient Woodland.	Noted. The design of the cable installation ensures that Ancient Woodland at Michelgrove Park and Calcot Wood will be crossed using a trenchless technique such as HDD. Embedded environmental measure C-216 ensures that there will be no construction vehicular access or ground works within Ancient Woodlands. All ground works will be restricted to areas in excess of 25m from the edge of Ancient Woodland (C-216).
Sussex Wildlife Trust (SWT)	SWT strongly supports the avoidance of the Site of Special Scientific Interest (SSSI) at Climping Beach by trenchless	Noted. The design of the cable installation ensures that Ancient Woodland at Michelgrove Park and Calcot Wood will be crossed using a

Stakeholder	Theme	How this is addressed in this ES
	crossing, and supports the use of trenchless crossings at the Warningcamp Hill to New Down Local Wildlife Site and ancient woodland. It objects to any loss of Ancient Woodland, and also seeks clarification on whether any ancient woodland soil will be lost. In relation to Ancient Woodland soils, SWT notes commitment made by Rampion 2 that with the use of trenchless crossings there will be no need during future cable maintenance to dig up Ancient Woodland soils.	trenchless technique such as HDD. Embedded environmental measure C-216 ensures that there will be no construction vehicular access or ground works within Ancient Woodlands. All ground works will be restricted to areas in excess of 25m from the edge of Ancient Woodland (C-216). The Warningcamp Hill to New Down Local Wildlife Site is avoided by the proposed DCO Order Limits, no soil disturbance will therefore take place within it.
Environment Agency	No specific comments on soils or agriculture, however, reference to works in flood risk areas and at the coast is noted.	**Table 20-17** includes embedded measures in relation to storage of soils in floodplains (C-131 and C-132).

Third Statutory Consultation exercise – February to March 2023

20.3.22 The third Statutory Consultation exercise was undertaken from 24 February 2023 to 27 March 2023. This was a targeted consultation which focused on a further single onshore cable route alternative being considered following feedback from consultation and further engineering and environmental works. As part of this third Statutory Consultation exercise, RED sought feedback on the potential changes to the onshore cable route proposals to inform the onshore design taken forward to DCO Application.

20.3.23 **Table 20-6** provides a summary of the key themes of the feedback received in the third Statutory Consultation exercise in 2023 in relation to soils and agriculture and outlines how the feedback has been considered in this ES chapter. A full list of all comments received during the third Statutory Consultation exercise in 2023 and the responses to those comments is provided in the **Consultation Report** (Document Reference: 5.1).

Table 20-6 Third Statutory Consultation exercise (February – March 2023) feedback

Stakeholder	Theme	How this is addressed in this ES
Natural England	Natural England states that its detailed advice is provided in relation to Longer Alternative Cable Route (LACR) 01-d only, and in relation to all other route	For soils and agriculture, Natural England's comments in **Table 20-4** are applicable, details of how they are addressed in the ES are provide in **Table 20-4**.

Stakeholder	Theme	How this is addressed in this ES
	options, the previous advice provided in response to the PEIR (September 2021) and PEIR SIR (November 2022) is still relevant.	
Natural England	Natural England noted a "*paucity of survey data presented for many of the environmental assessments of the route options being considered"*, and states "that it is *not possible for Natural England to provide fully informed advice on the options being presented to us*, *due to the significant omission of survey data and detailed environmental assessments across this consultation."*	The selected onshore cable route through the SDNP is within the area of moderate or high UXO risk and has, therefore, not yet had soil and ALC survey. This will be completed during pre-construction and included as part of commitment C-183 in **Table 20-17**. The available survey data which informs the assessment is presented in **Section 20.6**.

Fourth Statutory Consultation exercise – April to May 2023

20.3.24 The fourth Statutory Consultation exercise was undertaken from 28 April 2023 to 30 May 2023. This was a targeted consultation which focused on the proposed extension works to the existing National Grid Bolney substation to facilitate the connection of the Rampion 2 onshore cable route into the national grid electricity infrastructure. As part of this fourth Statutory Consultation exercise, RED sought feedback on the proposed substation extension works to inform the onshore design taken forward to the DCO Application.

20.3.25 **Table 20-7** provides a summary of the key themes of the feedback received in the fourth Statutory Consultation exercise in 2023 in relation to soils and agriculture and outlines how the feedback has been considered in this ES chapter. A full list of all comments received during the fourth Statutory Consultation exercise in 2023 and the responses to those comments is provided in the **Consultation Report** (Document Reference: 5.1).

Table 20-7 Fourth Statutory Consultation exercise (April – May 2023) feedback

Stakeholder	Theme	How this is addressed in this ES
West Sussex County Council	*"The temporary construction compound will be located on an area of existing hardstanding, and the current access to the substation will be utilised."* *"Considering the implementation of embedded environmental mitigation*	Noted. The assessment in **Section 20.9** for soils and agricultural land considers the prior use of some of the land at Bolney substation, and considers effects on soils and agricultural land where these

Stakeholder	Theme	How this is addressed in this ES
	measures, WSCC agrees that the extension of the Bolney Substation, as proposed, would not result in any additional receptors or likely significant environmental effects beyond those already assessed."	are still present within the Proposed Development footprint, as detailed in **Table 20-15**.

20.4 Scope of the assessment

Overview

20.4.1 This section sets out the scope of the ES assessment for soils and agriculture. This scope has been developed as Rampion 2 design has evolved and responds to feedback received to-date as set out in **Section 20.3**.

Spatial scope and Study Area

20.4.2 The Study Area of the soils and agriculture assessment is defined as the onshore area (landward of Mean High Water Springs) within the proposed DCO Order Limits (see **Figure 20.1** and **Figure 20.2, Volume 3** of the ES (Document Reference: 6.3.20)). In **Figure 20.1, Volume 3** of the ES (Document Reference: 6.3.20), the soil mapping extends 250m from the onshore part of the proposed DCO Order Limits. This provides some context for the soil in the Study Area in relation to the immediate surrounding area given the linear nature of the onshore part of the proposed DCO Order Limits. The soil assessment relates to the onshore part of the proposed DCO Order Limits only, as set out in **paragraph 20.4.3**.

20.4.3 No external zone of influence for soils and agriculture beyond the onshore part of the proposed DCO Order Limits has been identified. The rationale for the Study Area is that soils and agricultural land are geographically discrete and will typically not be substantially influenced by changes to the surroundings. Therefore, as soils and agricultural land within the onshore part of the proposed DCO Order Limits will only have the potential to be significantly affected by changes or activities (temporary or permanent) taking place on the resource itself, no additional buffer around the onshore part of the proposed DCO Order Limits is required for Rampion 2. This is on the basis that although activities including dewatering of excavations may take place during the construction phase (or associated with other developments beyond the onshore part of the proposed DCO Order Limits), no groundwater dependent terrestrial ecosystems (GWDTEs) have been identified within or adjacent to (up to a maximum of 250m from) the Study Area, and dewatering requirements for the Proposed Development will be short-term and small-scale. Therefore, no significant effects on soils within or outside the Study Area due to dewatering are likely.

20.4.4 The Study Area has been reviewed and amended in response to the ongoing design refinement of the onshore elements of the Proposed Development and in response, where appropriate, to feedback from consultation.

Temporal scope

20.4.5 The temporal scope of the assessment of soils and agriculture is limited to the construction phase of the Proposed Development following the scoping out of potential effects during the operation and maintenance, and decommissioning phases as outlined in **Table 20-10**.

Potential receptors

20.4.6 The spatial and temporal scope of the assessment enables the identification of receptors which may experience a change as a result of Rampion 2. The receptors identified that may experience likely significant effects for soils and agriculture are outlined in **Table 20-8**.

Table 20-8 Receptors requiring assessment for soils and agriculture

Receptor group*	Receptors included within group
Agricultural land	Agricultural land quality and BMV land, comprising: Grades 1, 2 and Subgrade 3a. Definitions of these ALC grades, and the other ALC grades applied using the MAFF post 1988 system, are provided below (MAFF, 1988): **Grade 1 – excellent quality agricultural land:** *"land with no or very minor limitations. A very wide range of agricultural and horticultural crops can be grown and commonly includes: top fruit…",* for example tree fruit such as apples and pears, soft fruit, such as raspberries and blackberries, *"…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 that 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 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."* **Subgrade 3a** – **good quality agricultural land***: "Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of crops including: cereals, grass, oilseed rape, potatoes, sugar beet, less demanding horticultural crops."*

Receptor group*	Receptors included within group
	Subgrade 3b – **moderate quality agricultural land**: "*Land capable of producing moderate yields of a narrow range of arable crops, principally cereals",* or moderate yields of a wider crop range, including grass, oilseed rape, potatoes, sugar beet and less demanding horticultural crops *"*or *high yields of grass which can be grazed or harvested over most of the year*." **Grade 4** – **poor quality agricultural land**: *"Land with severe limitations which can significantly restrict 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."* Other descriptions applied to land during the national ALC surveys include '**Urban**' and '**Non-agricultural**'. The term 'non-agricultural' was applied to land including 'soft'' uses where land could potentially be turned back to agriculture relatively easily, such as golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields, and potentially also mineral extraction and landfill sites with restoration conditions to a 'soft' use.
Soils	Soil resources – all soils, with soil receptor sensitivity assigned based on a soil function approach, as detailed in **Section 20.8**.
Farming economy and individual farms	Farm businesses affected financially by the Proposed Development during construction, operation and maintenance or decommissioning of Rampion 2.

*No potential has been identified for peat soil >0.3m thickness to be encountered within the maximum excavation depth of the Proposed Development within the onshore part of the proposed DCO Order Limits (see baseline information in **Section 20.6**) therefore peat is not included as a receptor in this table.

Potential effects

20.4.7 Potential effects on soils and agriculture receptors that have been scoped in for assessment are summarised in **Table 20-9**.

Table 20-9 Potential effects on soils and agriculture receptors scoped in for further assessment

Receptor	Activity or impact	Potential effect
Construction phase		
Soil resources and agricultural land quality	Changes to soil structure due to inappropriate storage and/or handling of soils or due to the use of heavy machinery which causes compaction.	Compaction can decrease permeability of the soils and lead to waterlogging of land, and potentially soil erosion and loss of soil organic matter (including carbon). Heavy machinery can also lead to the loss of topsoil resource through mixing with subsoil.
Soil resources and agricultural land quality	Soil erosion due to inappropriate storage and/or construction activities.	Loss of soil resource due to run off from stockpiles and/or runoff from stripped soil. Soil erosion can lead to eutrophication of local waterbodies and loss of soil organic matter (including carbon). The risks to water environment receptors from silty run-off are assessed in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26).
Soil resources and agricultural land quality	Temporary displacement of topsoil due to removal during construction activities, potential for temporary storage to result in degradation or loss of topsoil, due to mixing of topsoil with subsoil or other material, resulting in soil degradation, damage due to inappropriate storage/handling. Potential for permanent loss of the topsoil resource due to damage if rendered unsuitable for reuse.	Topsoil susceptible to structural damage, especially if stripped when wet can lead to degradation or permanent loss of resource. Degradation or loss of agricultural land. The land quality of the area affected can be reduced if topsoil is damaged or if topsoil is not restored at all, due to subsoil being of lower quality than topsoil for planting/crop growth (low nutrient/organic matter content). Reduction or loss of soil functions including food/crop growth capability (other functions also

Receptor	Activity or impact	Potential effect
		likely to be affected e.g., organic matter storage). Reduction or loss of agricultural land quality through damage to/loss of soil resources during the construction phase can affect the variety of crops that can be grown and reduce the average yield.
Soil resources and agricultural land quality	Damage to drainage systems due to construction activities.	Much of the land is likely to be subject to piped drainage (clay or plastic) which is essential to the maintenance of agricultural land quality. The pipes typically underlie land at between 75-120 cm depth and so without mitigation damage from cable trenching can lead to waterlogging/ponding at the surface of land where drains have been broken.
Agricultural land	Temporary loss of, or damage to agricultural land (e.g., downgrading of ALC grade) during the construction phase	The construction phase will result in greater disturbance to agricultural land than typical agricultural activities and the soil resource will be temporarily removed within the working construction corridor. There is potential for damage to occur to the agricultural land resource due to construction activity that could result in ALC quality being downgraded.
Soil resources and agricultural land quality	Permanent loss of soil/agricultural land due to permanent development – construction of onshore infrastructure (substation, substation permanent access and joint bays) due to hard development – soil	Loss of most soil functions and ecosystem services. Loss of BMV or other agricultural land (local and national stock), loss of food/crop growth/grazing capability.

Receptor	Activity or impact	Potential effect
	sealing or permanent removal.	
Farming economy and individual farms	Temporary changes in land use and access required during the construction phase of the Proposed Development.	Farmers and business owners will experience effects from agricultural land which is taken out of production and from impacts on diversified activities.

Activities or impacts scoped out of assessment

20.4.8 A number of potential effects have been scoped out from further assessment, resulting from a conclusion of no likely significant effect. These conclusions have been made based on the knowledge of the baseline environment, the nature of planned works and the wealth of evidence on the potential for impact from such projects more widely. The conclusions follow (in a site-based context) existing best practice. Each scoped out activity or impact is considered in turn in **Table 20-10**.

Table 20-10 Activities or impacts scoped out of assessment

Activity or impact	Rationale for scoping out
Loss of agricultural land due to operational and maintenance activities (Operation and maintenance)	The Planning Inspectorate agreed that there will be no likely significant effect, as any loss of agricultural land will occur during the construction phase. Any disruption due to operation and maintenance activities are likely to be minimal and short lived, with no loss of agricultural land (Planning Inspectorate (2020), comment 5.3.1, **Table 20-3**).
Loss of soil due to operational and maintenance activities (Operation and maintenance)	The Planning Inspectorate agreed that there will be no likely significant effect, as any loss of the soil resource will occur during the construction phase. Any disruption due to operation and maintenance activities are likely to be minimal and short lived, with no loss of soil resource (Planning Inspectorate (2020), comment 5.3.2, **Table 20-3**).
Loss of soil resource and agricultural land due to decommissioning activities (Decommissioning)	The Planning Inspectorate agreed that there will be no likely significant effect, as any loss of the soil resource and agricultural land will occur during the construction phase. Decommissioning is anticipated to be restricted to the removal and reinstatement of the onshore substation site. Electrical cables will be left in-situ onshore to minimise disruption and environmental impacts associated with removal (Planning

Activity or impact	Rationale for scoping out
	Inspectorate (2020), comments 5.3.1 and 5.3.2, **Table 20-3**).
Soil heating during operation of the cables (Operation and maintenance)	The design of the cables selected for Rampion 2 is such that the cables will only warm slightly, by no more than 1˚C, during operation. This means there will be no likely significant effects on soil caused by heat from the cables during the operation and maintenance phase.

20.5 Methodology for baseline data gathering

Overview

20.5.1 Baseline data collection has been undertaken to obtain information over the study areas described in **Section 20.4: Scope of the assessment**. The current baseline conditions presented in **Section 20.6: Baseline conditions** sets out data currently available information from the Study Area/s.

Desk study

20.5.2 The data sources that have been collected and used to inform this soils and agriculture assessment are summarised in **Table 20-11**.

Table 20-11 Data sources used to inform the soils and agriculture ES assessment

Source	Date	Summary	Coverage of Study Area
National Soils Research Institute data	2022	1:250,000 National Soil Map (Sheet 6).	Full coverage of the proposed DCO Order Limits.
Gov.uk open data / Multi-Agency Geographic Information for the Countryside (MAGIC) website (Defra, n.d.)	2022	1:250,000 Ministry of Agriculture Fisheries and Food (MAFF) provisional Agricultural Land Classification Map of England and Wales and post-1988 ALC data, Soilscape 1:250,000 scale map, statutory and non-statutory designated sites.	Full coverage of Study Area.
Natural England	2017	Predictive BMV Land Assessment, 1:250,000 map. London and Southeast Region: Likelihood of 'Best	Full coverage of Study Area.

Source	Date	Summary	Coverage of Study Area
		and Most Versatile' (BMV) Land.	
Ordnance Survey	2022	1:50,000 and 1:25,000 mapping.	Full coverage of Study Area.
British Geological Survey (BGS)	2022	On-line Geoindex 1:50,000 geology.	Full coverage of Study Area.
Open-access Google Earth aerial imagery	2022	Land use considerations.	Full coverage of Study Area.
Zetica Limited	July 2020 October 2021 and November 2022	UXO mapping. UXO desk study.	Full coverage of Study Area.

Site surveys

Table 20-12 Site surveys undertaken

Survey type	Scope of survey	Coverage of Study Area
Land Research Associates (2023) ALC Survey, Appendix 20.1: Soil and Agricultural Land Classification Report of the ES (Document Reference: 6.4.20.1)	A soils and ALC survey at a density of one observation per hectare or one observation per 100m on linear parts of the proposed DCO Order Limits, supplemented by occasional hand-dug soil pits to be representative of the various soil types found, in order to collect supplementary information which cannot be ascertained from an auger boring, such as on subsoil structure and stone content. The survey uses the Revised Guidelines and Criteria for Grading the Quality of Agricultural Land,	Partial coverage of the proposed DCO Order Limits. The survey coverage in the proposed DCO Order Limits is 231 hectares, equivalent to approximately 40 percent of the proposed DCO Order Limits (570.70ha). The total area surveyed was 409.30ha, however, much of this is now outside the proposed DCO Order Limits due to design changes. The reasons for the partial survey coverage are explained below.

Survey type	Scope of survey	Coverage of Study Area
	published by MAFF in 1988, each observation point is assigned a land grade and the classification of land at each location is translated into maps of land grades and soil resources.	Survey has not yet been completed in areas where there is an elevated (moderate or higher) risk of encountering UXO, as assessed in Zetica (2021) and in some areas survey land access has not been possible. The UXO risk areas are mainly within the former SDTA on land between Toddington (TQ035047) and Washington (TQ108128). The embedded environmental measures in **Table 20-17** include a commitment (C-183) for all soils and agricultural land within the proposed DCO Order Limits and where soil disturbance will take place to be surveyed during pre-construction to confirm ALC grade and soil type using the same methodology applied in the surveys completed to date and inform updates to the SMP.

Data limitations

20.5.3 The assessment undertaken at ES stage utilises the results of the field survey detailed in **Table 20-12**. The soil and ALC survey has covered 231 hectares. This is equivalent to approximately 40 percent of the proposed DCO Order Limits. Where field surveys have not been possible, 1:250,000 scale provisional soils and agricultural land classification mapping, Predictive BMV Land Assessment mapping (Natural England, 2010) and post 1988 ALC mapping survey reports from between 1989 and 1999 at a larger scale of 1:5,000 to 1:50,000 (and typically 1:10,000) have been reviewed.

20.5.4 The main area of the proposed DCO Order Limits where soil and ALC survey has not been completed is in the South Downs, on land within moderate or high unexploded ordnance (UXO) hazard zones (as shown in the Zetica report in **Appendix 24.1: Phase 1 geo-environmental desk study, Volume 4** of the ES (Document Reference: 6.4.24.1)). The embedded environmental measures in

Table 20-17 include a commitment (C-183) for all soils and agricultural land within the proposed DCO Order Limits and where soil disturbance will take place to be surveyed during pre-construction to accurately assess the agricultural land quality and characterise the soil and inform the soil and ALC measures in the final SMP. The same approach to survey as outlined in **Table 20-12** will be taken to provide sufficient information to inform the final SMP.

20.6 Baseline conditions

Current baseline

Geology

20.6.1 Near the coast, superficial deposits within the onshore part of the proposed DCO Order Limits are recorded on the BGS GeoIndex (2020) as blown sand, raised beach deposits and raised marine deposits, partially overlain by alluvium and head deposits (brickearth, silt and blown sands) with clay with flints and river terrace deposits in some areas. Localised head deposits are present at Warningcamp and on slopes within the South Downs. Alluvium is present where the River Adur and other watercourses such as Cowfold Stream cross the onshore part of the proposed DCO Order Limits. The onshore part of the proposed DCO Order Limits crosses chalkland of the South Downs between Arundel and Steyning. Greensand is recorded to outcrop on the upper escarpment north of Steyning. In the Low Weald west of Burgess Hill the Wealden Group (interbedded mudstone, siltstone and sandstone) is recorded. Further information on geology is provided in **Chapter 24: Ground conditions, Volume 2** of the ES (Document Reference: 6.2.24) and **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26).

Soils

20.6.2 The land near the coast, from Littlehampton to Arundel, is recorded (by the National Soil Map, **Figure 20.1, Volume 3** of the ES (Document Reference: 6.3.20) as a mixture of silty soils formed from Brickearth (Hamble 2 Association) and fine loamy soils over gravel (Efford 1 Association). These soils give mainly high-quality agricultural land (grade 1 or 2).

20.6.3 On the South Downs, northeast of Arundel, the soils are mainly shallow over chalk, with deeper soils in dry valleys (Andover 1 and 2 Associations). Deeper clayey soils are found in plateau drift (Carstens Association) on parts of the higher ground. This land often has drought limitations to agriculture resulting from shallow soil depth, but most land is typically of good quality (Subgrade 3a and above). Sandy and loamy soils of the Fyfield 1 Association are associated with the Greensand outcrop, giving a mixture of land quality depending on the sandiness.

20.6.4 On the Weald, east of Storrington and extending to the northern extent of the onshore part of the proposed DCO Order Limits, heavier soils over clays are recorded (Wickham 1 Association), which are typically wet and of moderate agricultural quality (i.e., typically ALC Subgrade 3b). The soil types within the onshore part of the proposed DCO Order Limits are shown on **Figure 20.1,**

Volume 3 of the ES (Document Reference: 6.3.20) and information on aspects including soil fertility and drainage are detailed in the addendum to this figure.

20.6.5 Based on the National Soil Map showing no peat soils within the onshore part of the proposed DCO Order Limits, and available BGS logs, reviewed in the (**Appendix 24.1: Phase 1 geo-environmental desk study, Volume 4** of the ES (Document Reference: 6.4.24.1)) completed to support **Chapter 24: Ground conditions** of the ES (Document Reference: 6.2.24), no peat is expected to be present within the onshore part of the proposed DCO Order Limits within the maximum excavation depths of the onshore elements of the Proposed Development.

20.6.6 Summary information on the soils shown in **Figure 20.1, Volume 3** of the ES (Document Reference: 6.3.20) and the source of full descriptions of each soil type are presented in **Table 20-13**.

Table 20-13 Soil type information

Map ID	Name	Soil description	URL (full soil description)
342a	UPTON 1	shallow silty over chalk	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=34201
343h	ANDOVER 1	shallow silty over chalk	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=34308
343i	ANDOVER 2	shallow silty over chalk	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=34309
361	Sandwich	dune sand	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=36100
511f	COOMBE 1	silty over chalk	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=51106
511g	COOMBE 2	silty over chalk	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=51107
571d	FYFIELD 1	loam over sandstone	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=57104
571g	FYFIELD 4	loam over sandstone	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=57107
571s	EFFORD 1	deep loam over gravel	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=57119
571z	HAMBLE 2	deep silty	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=57126

Map ID	Name	Soil description	URL (full soil description)
581d	CARSTENS	deep silty to clay	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=58104
631d	SHIRRELL HEATH 2	sandy over sandstone	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=63104
711e	WICKHAM 1	seasonally wet loam to clayey over shale	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=71105
711f	WICKHAM 2	seasonally wet silty to clayey over shale	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=71106
711h	WICKHAM 4	seasonally wet loam to clayey over shale	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=71108
711i	WICKHAM 5	seasonally wet loam to clayey over shale	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=71109
813d	FLADBURY 3	seasonally wet deep clay	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=81304
814b	Newchurch 1	seasonally wet deep clay	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=81402
841e	PARK GATE	seasonally wet deep loam	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=84105
U571s	EFFORD 1	deep loam over gravel	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=57119
U571z	HAMBLE 2	deep silty	http://www.landis.org.uk/services/soilsguide/mapunit.cfm?mu=57126

Land use

20.6.7 The land of the coastal plain, from Littlehampton to Arundel, is dominated by arable farming. The South Downs, northeast of Arundel, has a mixture of arable and livestock farms with woodland plantation. The Weald, east of Storrington and extending to the northern extent of the onshore part of the proposed DCO Order Limits, is under grassland with variable proportions of cereal rotation. The onshore cable corridor will also cross several roads and watercourses between landfall and the onshore substation.

20.6.8 Agriculture is the main land use, however, the proposed DCO Order Limits for the onshore cable corridor construction works also includes some recreational land,

Public Open Space (POS), and Open Access Land (OAL). These areas comprise: Sullington Hill (OAL) (approximately 6.95ha is within the proposed DCO Order Limits), and Jockey's Meadow and Washington Recreation Ground (together covering an area of approximately 3.95ha within the proposed DCO Order Limits) at Washington. Historical mapping does not indicate previous development of these areas, and the surrounding land use is typically agriculture rather than urban development, Bines Green Common (OAL) also overlaps the proposed DCO Order Limits, however, this is limited to a small section of a proposed access (A-48) at an existing road. Consideration of the effects on soils and agricultural land as a result of all temporary construction access improvement requirements is included in the maximum design scenario used in the assessment (see **Table 20-15**).

20.6.9 Atherington Beach in the south of the proposed DCO Order Limits is a Local Wildlife Site, and Climping Beach is a Site of Special Scientific Interest (see **paragraphs 20.6.17** to **20.6.18**). Impact on the Climping Beach SSSI will be mitigated by HDD. Measures are also included to minimise impacts on Atherington Beach, as detailed in **paragraph 20.6.18**.

20.6.10 Urban areas within the proposed DCO Order Limits for the onshore cable corridor construction works are generally limited to roads and railways, and small areas of previously developed land (e.g., at the existing National Grid Bolney Substation). The route will also cross public rights of way (PRoW), rivers and other watercourses. Main rivers, watercourses, railways and roads that form a part of the Strategic Highways Network will be crossed by Horizontal Directional Drill (HDD) or other trenchless technology where this represents the best environment solution and is financially and technically feasible, avoiding disturbance to these features.

Hydrology and flood risk

20.6.11 Soil on undeveloped land such as agricultural fields plays a key role in the hydrological cycle, including filtering and storing water, drainage, and regulating runoff. Further details of the water environment, including the aquatic environment, water resources and flood risk receptors are presented in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.24), which has also been used to inform this chapter in relation to soils, notably with regard to the potential for soils to be damaged by flooding and soil's role in flood attenuation. Summary information is also provided below.

20.6.12 The onshore part of the proposed DCO Order Limits extends approximately 38.8km, from the landfall at Climping in the River Arun catchment to the onshore substation site at Oakendene within the River Adur catchment.

20.6.13 The Environment Agency's Flood Zone mapping provides an indication of the likelihood of flooding from fluvial and or tidal sources, with Flood Zones 1, 2, and 3 indicating a low, medium and high annual probability of flooding, respectively.

20.6.14 The most significant areas of Flood Zones 2 and 3 are located in the lower tidal reaches of the River Arun at Littlehampton in the southern section of the onshore cable corridor, and on the River Adur and the Cowfold Stream in the north eastern

section of the onshore cable corridor. The central section of the onshore cable corridor between Warningcamp and Ashurst sits within Flood Zone 1.

20.6.15 The risk of groundwater flooding is assessed by the Environment Agency to be high across most of the southern and central sections of the onshore part of the proposed DCO Order Limits underlain by Chalk between landfall and near Sullington Hill, the risk is lower in the north eastern section where the bedrock geology differs (for example Gault Formation and Wealdon Group), from Sullington Hill towards Bolney.

Sites designated for nature conservation

20.6.16 The NPPF (MHCLG, 2021) requires planning policies and decisions to protect and enhance sites of biodiversity value. Soils supporting sites designated for nature conservation are effectively a finite resource and the presence of statutory and other nature conservation designations should, therefore, have a bearing on the sensitivity of the soils to development. Information on nature conservation sites is provided in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22). A summary of features within the onshore part of the proposed DCO Order Limits is provided in **paragraphs 20.6.17** and **20.6.18**.

20.6.17 Within the onshore part of the proposed DCO Order Limits there is one site with a statutory designation, the Climping Beach Site of Special Scientific Interest (SSSI), comprising supralittoral and littoral sediment on the coast at Littlehampton (at the landfall location). Impact on the Climping Beach SSSI will be mitigated by HDD.

20.6.18 Littlehampton Golf Course and Atherington Beach, and Sullington Hill, have non-statutory designations as a Local Wildlife Sites (LWSs) and are within the onshore part of the proposed DCO Order Limits. Embedded environmental measures to protect the LWSs are detailed in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22), including Commitments C-112 and C-114, which state that no ground-breaking activity or use of wheeled or tracked vehicles will take place Littlehampton Golf Course and Atherington Beach LWS or Sullington Hill LWS unless remedial action is required. However, it should be noted that Commitment C-114 states that existing farm tracks through Sullington Hill LWS may be used by light vehicles (e.g., 4 x 4, light van) for access purposes during the operational and maintenance phase. A very small part of Bines Green LWS lies within the onshore part of the proposed DCO Order Limits but is not crossed by the onshore cable corridor and therefore no ground disturbance will take place there.

20.6.19 A variety of woodland types are present within the proposed DCO Order Limits including broadleaved semi-natural woodland and plantation woodland, and some Ancient Woodland, as detailed in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22). Impacts on Ancient Woodland soils will be mitigated by trenchless crossings and a minimum of a 25m stand-off (C-216).

Agricultural land quality

20.6.20 The ALC grading system (MAFF, 1988) allows the classification of agricultural land quality across England and Wales. The MAFF grading system ranges from Grade 1, excellent agricultural land, to Grade 5, very poor quality agricultural land. Grade 3 is split into two subgrades, Subgrade 3a and Subgrade 3b. Grades 1 and 2 and Subgrade 3a are classed as 'best and most versatile' (BMV) land. The grades are defined in **Table 20-8**. 'BMV' agricultural land is the land, which is most flexible, productive and efficient in response to inputs (seeds, fertilizers etc.).

20.6.21 ALC survey has been completed on 409.50ha, of which, 231ha is in the onshore part of the proposed DCO Order Limits. The surveyed area is equivalent to approximately 40 percent of the proposed DCO Order Limits. This is based on the onshore DCO Order Limits covering an area of approximately 570.70ha. Of the total ALC survey area, 178.5ha of this is no longer included in the proposed DCO Order Limits due to refinement of the onshore cable route options and other design changes.

20.6.22 The ALC data obtained in the Soil and ALC Survey (**Appendix 20.1: Detailed Agricultural Land Classification Report, Volume 4** of the ES (Document Reference: 6.4.20.1), which covers approximately 40 percent of the proposed DCO Order Limits, confirms that 9 percent of land within the proposed DCO Order Limits is Grade 2, 4 percent is Subgrade 3a, 27 percent is Subgrade 3b, and <1 percent is Grade 4. No Grade 1 land has been identified, and no agricultural land classed lower than Grade 4.

20.6.23 The areas surveyed and associated ALC classifications are shown on **Figure 20.2, Volume 3** of the ES (Document Reference: 6.3.20). This figure includes some survey findings for land previously within the proposed DCO Order Limits but no longer included. Further ALC survey will be completed during pre-construction to fill data gaps within the proposed DCO Order Limits. However, where gaps exist, the areas surveyed close by provide an indication of the likely range of ALC grades that will be found, given the similar soils, topography and agricultural land uses.

20.6.24 Where survey data is not available, the publicly available agricultural land quality data in **Table 20-11** has also been reviewed to inform the baseline conditions.

20.6.25 There is an area of post-1988 ALC mapping within the proposed DCO Order Limits in the northwest of Littlehampton (at 501169, 103914) (Natural England, 2016a). The report and accompanying plan detail the findings of a 1998 ALC survey of 76.4ha of land, of which approximately 16.0ha is within the proposed DCO Order Limits. Approximately 13.0ha of this is covered in the ALC survey report for Rampion 2 in ~~(~~**Appendix 20.1: Detailed Agricultural Land Classification Report, Volume 4** of the ES (Document Reference: 6.4.20.1). The ALC grades found in the 1988 survey (reference 4202\056\98) where it is coincident within the proposed DCO Order Limits are Grade 2 and Subgrade 3b. The 1998 survey was undertaken by the Farming and Rural Conservation Agency on behalf of MAFF and is recorded by the authors to have been completed in accordance with the MAFF ALC guidelines (MAFF, 1988). The ALC survey for Rampion 2 found the same ALC grades but with different extents to the 1998 survey, as described below.

- The Rampion 2 ALC survey found 4.0ha of land in the north of the area surveyed for the 1998 report to be Grade 2, whereas the 1998 report (reference 4202\056\98, Natural England, 2016a) records it as Subgrade 3b.
- In the northwest of the land covered in 1998 survey (reference 4202\056\98, Natural England, 2016a) there is an area of approximately 3.0ha which is within the proposed DCO Order Limits but was not covered in the ALC survey completed to date for Rampion 2, this is shown in the 1998 survey findings as Subgrade 3b.
- In the south of the 1998 survey area, an area of approximately 2.0ha Grade 2 land is recorded which was identified as Subgrade 3b in the ALC survey for Rampion 2. Review of the observation points confirms that no observation points in the Rampion 2 ALC survey coincided with this portion of land. The variation in findings therefore appears to due to the observation points being in different locations during the two surveys. It is reasonable to expect a degree of variability in physical characteristics within a discrete area and ALC grades are assigned in part based on the soil observations on an approximately one point per hectare grid.
- For the purposes of the assessment in this ES chapter, the maximum possible Grade 2 extent has been applied. This is summarised in **Table 20-14**.

~~20.6.25 There is no post-1988 ALC mapping within the proposed DCO Order Limits.~~

20.6.26 ~~T~~Land within the proposed DCO Order Limits east of Washington crosses two areas (at 512951, 113272, and 513663, 113391) where post 1988 ALC survey data is available, the surveys, which are almost adjacent to one another, overlap 1.3ha and 4.2ha of land within the proposed DCO Order Limits, respectively. The surveys date from 1993 (Natural England, 2016b, and Natural England, 2016c) and for areas within the proposed DCO Order Limits they record Grade 2, Subgrade 3b, Subgrade 3a and Grade 4 land. With the exception of 0.7ha of land which was found in the survey to be Subgrade 3b (Natural England, 2016b), the ALC surveys completed for Rampion 2 include all of the land covered by the 1993 surveys~~,~~ and found the same ALC grades with similar extents. Where the recent survey data is available, this has been used for the calculations in **Table 20-14**. However, the 0.7ha of land identified as Subgrade 3b in the post 1988 survey has been included in **Table 20-14**, as this supersedes its provisional classification of Grade 3.

~~20.6.26~~20.6.27 The provisional ALC mapping shows most land within the proposed DCO Order Limits as provisional ALC Grade 3. This category includes (and does not distinguish between) Subgrades 3a (BMV land) and Subgrade 3b (not BMV land). The provisional ALC grades for areas where survey data has not yet been obtained are recorded in **Table 20-14**.

~~20.6.27~~20.6.28 For the approximately 60% of the proposed DCO Order Limits where ALC survey has not yet been undertaken, the provisional ALC mapping was reviewed. This indicates that an area equivalent to 13% of the land within the proposed DCO Order Limits may be Grade 2, an area equivalent to 32% may be Grade 3 (an

older classification system which includes Subgrades 3a and 3b), and an area equivalent to 13% may be Grade 4. No areas of Grade 1 land or provisional Grade 5 land are shown. Some non-agricultural land is shown approximately at the woodland south of Sullington Hill, equivalent to 2% of the proposed DCO Order Limits.

20.6.28~~20.6.29~~ The recreational land, POS and OAL within the proposed DCO Order Limits for the onshore cable construction corridor (approximately 14.5ha or 3% of the proposed DCO Order Limits), as described in **paragraph 20.6.8**, is assigned a provisional ALC grade on the MAFF) provisional Agricultural Land Classification Map. The Soil and ALC Survey (**Appendix 20.1: Detailed Agricultural Land Classification Report, Volume 4** of the ES (Document Reference: 6.4.20.1)) confirms that land at Jockey's Meadow meets the criteria of ALC Subgrade 3b. Review of Groundsure environmental and historical mapping information does not indicate previous development on the recreational and commons land, and therefore the naturally occurring soils are likely to be present. As the assessment of effects on agricultural land and soil considers the effects of Rampion 2 on agricultural land quality/capability and soil functions, the recreational land, POS and OAL have been included in the areas assessed as agricultural land, since this land could potentially perform the same functions (e.g., crop or biomass production) as agricultural land of the same ALC grade and is in a largely agricultural (rather than urban) setting. Effects of Rampion 2 on recreational land users are considered in **Chapter 28: Population and human health, Volume 2** (Document Reference: 6.2.28) of the ES.

20.6.29~~20.6.30~~ The provisional ALC grades for areas not surveyed are shown on **Figure 20.2, Volume 3** of the ES (Document Reference: 6.3.20).

Table 20-14 ALC Summary Information within the proposed DCO Order Limits

Data source	ALC Grade	Area within proposed DCO Order Limits (with % of total area*)	Commentary
ALC Survey results using MAFF, 1988, ALC grading system', Appendix 20.1: Soil and Agricultural Land Classification Report, Volume 4 of the ES (Document	Grade 2	53.5ha (9%)	Occurs predominantly in the south of the proposed DCO Order Limits between landfall and Lyminster. There is approximately 0.93ha of Grade 2 land of at Oakendene, of which a third (0.31ha) is in the permanent development footprint of the onshore substation at Oakendene.
	Grade 3a	22.1ha (4%)	Subgrade 3a occurs locally within most sections of the onshore cable route surveyed

Data source	ALC Grade	Area within proposed DCO Order Limits (with % of total area*)	Commentary
Reference: 6.4.20.1)			to date and was generally found amongst more extensive areas of Subgrade 3b.
	Grade 3b	151.53.5ha (27%)	Subgrade 3b was the most common ALC grade found in the surveyed areas. This corresponds reasonably well, in conjunction with the Subgrade 3a land, to the provisional ALC mapping, which shows most land in the proposed DCO Order Limits as Grade 3.
	Grade 4	1.9ha (<1%)	Only a small amount of Grade 4 land was recorded during the survey. In many instances, land shown as provisional Grade 4, was confirmed by the survey to be Subgrade 3b.
Post-1988 ALC grade (in areas not included in survey)	Grade 2-	-2.0ha (<1%)	Area is in the northwest of Littlehampton (Natural England, 2016a, see **paragraph 20.6.25**).~~Defra post-1988 ALC data provides no coverage of areas not surveyed to date.~~
	Subgrade 3b	4.7ha (<1%)	4.0ha in the northwest of Littlehampton (Natural England, 2016a, see **paragraph 20.6.25**), and 0.7ha east of Washington (Natural England, 2016b, see **paragraph 20.6.26**).
Provisional ALC grade (in areas not	Grade 1	0ha	No provisional grade 1 is present within the proposed

Data source	ALC Grade	Area within proposed DCO Order Limits (with % of total area*)	Commentary
included in survey)			DCO Order Limits in areas not surveyed to date.
	Grade 2	72.6ha (13 %~~percent~~)	The largest area of provisional Grade 2 land occurs immediately south of the SDNP, between Lyminster and Hammerpot (approximately 44.15ha). The remaining provisional Grade 2 land occurs mainly at a point on the onshore cable corridor where the proposed DCO Order Limits includes several trenchless crossing compound options at Sullington Hill (covering an area of ~30.8ha, and up to ~650m wide). Once the final design is confirmed, the temporary construction working corridor and trenchless compounds will only require a much smaller proportion of this area, in accordance with the parameters in **Table 20-15**. In the absence of survey data, the Predictive BMV Land Assessment map (Natural England, 2010) was reviewed for the area in the South Downs which is affected by moderate or high risk UXO hazards. This shows areas of provisional Grade 2 land as having a high likelihood of BMV (>60 percent area BMV).
	Grade 3	176.9~~81.6~~ha (31%~~2 percent~~)	The provisional Grade 3 classification applies to most

Data source	ALC Grade	Area within proposed DCO Order Limits (with % of total area*)	Commentary
			of the land not surveyed to date. In the absence of survey data, the Predictive BMV Land Assessment map (Natural England, 2010) was reviewed for the area in the South Downs which is affected by moderate or high risk UXO hazards. This shows areas of provisional Grade 3 as having a moderate likelihood of BMV land (20 – 60 percent area BMV i.e. Grade 1, Grade 2 or Subgrade 3a).
	Grade 4	73ha (13 ~~%percent~~)	As noted in **paragraphs 20.6.20** to **20.6.28**, ALC survey has confirmed only limited Grade 4 land, with most of this found to be Subgrade 3B.
	Non agricultural	12.5ha (2 ~~%percent~~)	The non-agricultural land corresponds to woodland at Angmering Park Estate within the SNDP.
	Urban**	0.03ha (<1 ~~%percent~~)	The onshore cable corridor is generally routed through agricultural land and this small area of urban land occurs at the western extent of the Littlehampton urban area. The provisional ALC mapping does not map linear urban features such as roads and railways as urban features, therefore the percentage of urban land within the proposed DCO Order Limits will be slightly

Data source	ALC Grade	Area within proposed DCO Order Limits (with % of total area*)	Commentary
			higher. However, these features are generally avoided by Rampion 2 through the use of trenchless crossings.

*Based on an approximate total onshore area of 570.70ha within the proposed DCO Order Limits.
**Includes built-up areas or 'hard' uses with little potential to return to agriculture, such as housing, industry, commerce, transport or cemeteries, and derelict land, including some mineral workings.

~~20.6.30~~20.6.31 The information in **Table 20-14** provides the confirmed and approximate ALC grades of land within the proposed DCO Order Limits, and identifies small proportions of the DCO Order Limits as non agricultural or urban (as noted in **Table 20-14**, the percentage of urban land is likely to be slightly under-estimated, resulting in a more conservative assessment). Measures to avoid or limit the effects of Rampion 2 on sensitive land uses including LWS and the SSSI at Climping Beach mean that soil disturbance is avoided or minimised in these areas (see **paragraphs 20.6.17** to **20.6.18**). Areas of recreational land within the proposed DCO Order Limits for the onshore cable corridor are included in the totals for agricultural land (see **paragraphs 20.6.8** and **20.6.29**). In summary, the available information shows that:

- the total area of Grade 2 land within the proposed DCO Order Limits is likely to be in the region of ~~126~~128.~~1ha~~ 5ha (~~22~~ 23 percent);
- the total area of Subgrade 3a land within the proposed DCO Order Limits, based on all provisional Grade 3 being counted as possible Subgrade 3a, is likely to be in the region of ~~203.7~~200.0ha (~~36~~ 35 percent). This potentially over-states Subgrade 3a based on survey data so far which has found provisional Grade 3 land to be predominantly Subgrade 3b rather than 3a, but also considers the potential for some Grade 2 to be present;
- the confirmed area of Subgrade 3b is ~~153~~154.~~5ha~~ 2ha (27 percent);
- the total area of Grade 4 land within the proposed DCO Order Limits is likely to be in the region of ~~74.9ha~~75.3ha (13 percent); and
- approximately 2 percent of the proposed DCO Order Limits is urban or non-agricultural land.

~~20.6.31~~20.6.32 Based on available survey data, supplemented with the provisional ALC grades, the combined total for Grade 2 and Subgrade 3a is ~~329~~328.~~8ha~~5ha, 58 percent of the Proposed DCO Order Limits (as detailed in the commentary in **Table 20-14**). This may over-state the total area of BMV land, as it applies Subgrade 3a to all provisional Grade 3 land).

20.6.3220.6.33 The onshore cable trenching will largely take place on agricultural land and the estimated percentage breakdown of areas of ALC grades for the onshore cable corridor based on the ALC survey information and other sources is: approximately 22 23 percent Grade 2, approximately 356 percent Subgrade 3a, approximately 27 percent Subgrade 3b35b, and approximately 13 percent Grade 4 (plus approximately 2 percent non agricultural or urban). Based on this, an ALC grade of Subgrade 3a is applied for the combined onshore cable corridor.

Areas of permanent (above ground) development

20.6.3320.6.34 Land within the 'hard' development footprint of the proposed onshore substation site (maximum 6.0ha) at Oakendene (i.e., the land identified for the fenced operational onshore substation which will be surfaced with hardstanding, gravel, or buildings) has had ALC survey and was found to be predominantly Subgrade 3b, with some localised Grade 2 in the southwest and some Subgrade 3a located centrally. The proposed onshore substation access (maximum 0.22ha) will also be 'hard' development (hard-surfaced road), and is likely to encounter predominantly Subgrade 3b land, and potentially a small area of Subgrade 3a land. The breakdown of areas and percentages of each grade within the onshore substation footprint is approximately: Subgrade 3b (76.73 percent), Subgrade 3a (18.82 percent), and Grade 2 (4.45 percent) (i.e., 76.73 percent of the land is not BMV, and 23.27 percent meets the criteria of BMV land). Based on the ALC survey findings, an ALC grade of Subgrade 3a is applied for the assessment of effects on soils and agricultural land within the combined area of the permanent substation development.

20.6.3420.6.35 Land surrounding the onshore substation is to be developed for drainage and landscaping (up to 5.8ha) and is currently in agricultural use. Based on ALC survey, this is predominantly Subgrade 3b, with potential for some Grade 2 (approximately 0.81ha / 14.0 percent), depending on the final layout of the fenced onshore substation, and the final layout of the drainage and landscaping design. Based on the ALC survey findings, an ALC grade of Subgrade 3a is applied for the assessment of effects on soils and agricultural land within the area to be developed for drainage and landscaping.

20.6.3520.6.36 Land at the existing National Grid Bolney substation has not had ALC survey to date. East of the existing National Grid Bolney substation, where permanent development associated with the extension works associated with the Proposed Development, and at the associated temporary construction accesses and temporary construction compound, the land is shown as Grade 3 on the Provisional ALC mapping. The Grade 3 classification includes the existing National Grid Bolney substation and associated existing developments including accesses and compounds. The Predictive BMV Land Assessment map (Natural England, 2010), which is more up to date than the provisional mapping, shows the land as having a low likelihood of BMV land (≤20 percent area BMV). The majority of the proposed National Grid Bolney substation extension works are located on land that has been previously developed for similar use. Most of the proposed temporary construction and operational accesses have been previously used as accesses (other than approximately 0.09ha of land through fields adjacent to the existing National Grid Bolney substation), and the temporary construction compound is located on existing hardstanding. The proposed new permanent

infrastructure is limited to an area covering up to 0.63ha east of the existing National Grid Bolney substation, which is currently vegetated non-operational land around the substation compound and includes part of a field. Aerial photography from 2018 (Google Earth Pro) shows the area partly in use as a contractors' compound, with around 0.16ha having soil removed or covered by hardstanding / gravel. By 2020 aerial photography shows that the soil appears to have been restored and some grass is present in the former compound areas.

~~20.6.36~~20.6.37 The locations of joint bays and link boxes are not yet confirmed, and as such it is not possible to confirm the ALC grade at each location. It is likely they will encounter both BMV and non-BMV land, as they are a requirement at regular intervals on the onshore cable route. The average ALC grade is, therefore, taken to be the same as for the onshore cable corridor, Subgrade 3a. Joint bay locations will occur at a minimum frequency of one every 600m, with each joint bay location (approximately 56m^2) including four joint bays, four link boxes and four fibre-optic cable joint bays. Most excavated soil can be replaced on top of joint bays as the infrastructure is buried, however, there will be some structures (access chambers) which extend up to ground level and which will have a ground level access cover.

~~20.6.37~~20.6.38 Accesses for construction purposes are mainly routed along existing roads or regularly used access tracks, however, in some instances there may be a requirement for aggregate, and at bell mouths possibly for 'black top', surfacing to create a new access or to improve an existing access to make it suitable for vehicles during the construction phase. There are two types of construction access needed: "construction accesses" and "light construction accesses". Construction accesses provide access to trenchless crossing sites, onshore cable sites, temporary construction compounds. Light construction accesses will provide access to work sites where only a small number of light construction vehicles (usually vans, light goods vehicles or smaller vehicles) need access during construction. Post-construction, temporary construction accesses / aggregates will be removed and the land reinstated to the pre-existing condition.

~~20.6.38~~20.6.39 The temporary construction access strategy is intended to balance the need to access each construction location, against over-provision of new accesses onto the highway network, and/or providing numerous accesses onto the same section of road. To address this, a haul road is proposed along large sections of the cable corridor, linking numerous construction sites. The haul road is included within the onshore cable corridor area in **Table 20-15**. As described in **Section 4.5, Chapter 4: The Proposed Development** of the ES (Document Reference: 6.2.4), the temporary construction haul road will comprise crushed aggregates and a geotextile membrane where the existing ground is not considered stable enough. It will be used during installation works and construction activities and be removed prior to final reinstatement.

~~20.6.39~~20.6.40 Accesses for operational purposes are routed along existing roads or regularly used access tracks or field edges. To limit the requirement for new hard surfacing, 4x4 vehicles suitable for accessing farmed areas will be used for access during the operation and maintenance phase.

~~20.6.40~~20.6.41 The areas stated in **Table 20-15** for accesses are based on the maximum access length, based on the proposed DCO Order Limits, OS mapping and aerial photography on the Rampion 2 GIS viewer, and information in the ~~(stated in~~

~~**Table 4-1** in the~~ **Outline Construction Traffic Management Plan** (**CTMP**) (Document Reference: 7.6~~)~~). The maximum access lengths potentially requiring improvement with aggregate for the construction phase have been~~,~~ multiplied by the maximum access width of 6m. To provide a worst-case assessment, it is assumed that where accesses are identified as requiring improvement with aggregate, the land is currently unsurfaced (i.e., topsoil is present, which will need to be stripped and stockpiled for access construction, and then reinstated post construction).

Future baseline

~~20.6.41~~20.6.42 In the absence of Rampion 2, the land is likely to remain in its current use with no significant effects on soil resources and agricultural land anticipated.

~~20.6.42~~20.6.43 Soil and agricultural land resources are geographically discrete, and without development, these resources will still be subject to land management effects (e.g., farming activities) which could improve or degrade the resource, however, it is not possible to predict these effects sufficiently to quantify them.

~~20.6.43~~20.6.44 Soil and agricultural land will also be subject to the effects of climate change. The MAGIC interactive map (Defra, n.d) shows that the priority habitats within the onshore part of the proposed DCO Order Limits are in an area assessed to be at medium vulnerability to climate change, based on established climate change adaptation principles. Whilst this assessment does not refer specifically to soils, soils and the plants and other biodiversity integral to soil health, will be affected by climate change, notably by changes to rainfall patterns, such as increased intensity of flooding which can contribute to soil compaction, waterlogging and erosion, higher temperatures and periods of drought, which will affect soil biodiversity and potentially increase soil erosion.

~~20.6.44~~20.6.45 To some extent agriculture can be adapted to mitigate the effects of climate change, for example by changes to tillage, extensions to fallow periods, diversifying crops, changing inputs such as fertilizers, and changes to planting density or planting times. Climate change effects such as increased intensity of flooding could contribute to soil compaction, waterlogging and erosion of topsoil, which could potentially result in the ALC status of some agricultural land being downgraded, however, a reduction in rainfall could also result in higher grades for wetter areas (Keay et al., 2012).

~~20.6.45~~20.6.46 There is too much uncertainty over the location, scale and timing of climate change effects on soils and agricultural land to predict them accurately. As agricultural land is already managed, there is scope for alternative management approaches to both mitigate negative effects and promote positive effects, however the effects on soils (soil health and soil functions) are overall likely to be negative rather than positive.

20.7 Basis for ES assessment

Maximum design scenario

20.7.1 Assessing using a parameter-based design envelope approach means that the assessment considers a maximum design scenario whilst allowing the flexibility to make improvements in the future in ways that cannot be predicted at the time of submission of the application for development consent. The assessment of the maximum design scenario for each receptor establishes the maximum potential adverse impact and as a result impacts of greater adverse significance would not arise should any other development scenario (as described in **Chapter 4: The Proposed Development** of the ES (Document Reference 6.2.4)) to that assessed within this Chapter be taken forward in the final design of the Proposed Development.

20.7.2 A change request **[AS-046]** to the DCO Application was accepted by the Examining Authority on 24 July 2024 **[PD-018]**. These changes included minor reductions to the proposed DCO Order Limits (onshore only) where adjacent to areas of Ancient Woodland to provide a 25m buffer from these features. Further localised reductions to the extent of Works 9 and 19 were also made, assigning these areas to a class of work with lower impacts from those previously assessed as cable installation. The changes made result in no new or different effects from those reported in this chapter of the ES. The figures supporting this chapter of the ES have not been updated due to the minor nature of these changes, the final proposed DCO Order Limits and Works areas should be viewed on the **Onshore Works Plans** (Document Reference: 2.2.2 and **[AS-026]**.

~~20.7.1~~20.7.3 The maximum assessment assumptions that have been identified to be relevant to soils and agriculture are outlined in **Table 20-15** which breaks down the areas of land / soil potentially affected by Rampion 2 and **Table 20-16** which identifies the potential effects on soils / agricultural land associated with Rampion 2, these are in line with the Project Design Envelope (**Chapter 4: The Proposed Development** of the ES (Document Reference 6.2.4)).

~~20.7.2~~20.7.4 **Table 20-16** provides the justification for the maximum assessment assumptions associated with each potential effect associated with each project element of the Proposed Development. The Proposed Development elements and identifiers are defined in **Table 20-15**. In all instances, the affected area is the maximum area of land, in hectares, where permanent or temporary effects on receptors are possible.

~~20.7.3~~20.7.5 For the purposes of the assessment, an average ALC grade of Subgrade 3a has been used to define the sensitivity of the soil and agricultural land receptors. This is based on ALC survey data and other baseline information as described in **paragraphs 20.6.20** to **20.6.38**, and is applied to all elements of the Proposed Development including areas of temporary (construction phase) land take where soils will be disturbed and permanent land take or change of land use where soils will be disturbed and potentially removed or sealed.

~~20.7.4~~20.7.6 In addition to the permanent development items detailed in **Table 20-15**, it has been identified through design since the PEIR (RED, 2021) was completed that cable clamping is needed where the cable circuits need to travel along steep

slopes. This will require installing concrete blocks of around 2m^3 in volume below the planned burial depth of the cable in the affected areas. As the burial depth of the cable is likely to be at least 1m, no potential for significant effects on soil has been identified for these structures, since there will be little or no change to the planned topsoil and subsoil reinstatement and construction effects associated with these features are included in the assessment for the onshore cable corridor.

Table 20-15 Maximum assessment assumptions for effects on soils and agriculture: breakdown of project elements and affected areas

Project element and identifier	Maximum area of land affected and current land use	Construction duration
Permanent development (topsoil removal / soil sealing/ land use change from agricultural):		
Onshore substation (Oakendene) (P1)	Up to 6.0ha. Land is currently agricultural. After development it would be a fenced operational onshore substation area.	36 months
Onshore substation permanent access to the onshore substation including visibility splay (P2)	Up to 0.~~22ha~~24ha. Land is currently agricultural. After development it would be hard surfaced access road.	36 months
Onshore substation drainage and landscaping (P3)	Up to 5.8ha. Land is currently agricultural. Soil likely to be retained within this area, however, agricultural land function will be lost.	36 months
National Grid Bolney substation extension works (P4)	Up to 0.63ha. Part of the land has been used previously as a construction compound. Aerial photography between 2015 and 2018 shows vegetation clearance took place over approximately 0.16ha and hardstanding / aggregate was placed over approximately 0.04ha of this area. However, later aerial photography (2022 onwards) indicates that some or all of the soil has been reinstated. Some of the land (approximately 0.21ha) is currently an agricultural field, the remainder is landscaping around the existing National Grid Bolney substation, including trees and the	12 months

Project element and identifier	Maximum area of land affected and current land use	Construction duration
	former construction compound described above.	
Joint bay (JB) locations, including JBs, link boxes (LBs) and fibre optic cable joint boxes (FOCJBs) (P5)	Total: up to 0.37ha. There will be a maximum of 66 joint bay (JB) locations (assuming a minimum spacing of 600m along the onshore cable route), each containing a maximum of 4 JBs, 4 link boxes (LBs), and 4 fibre optic cable joint boxes (FOCJBs) (i.e., a maximum of 264 JBs, 264 LBs and 264 FOCJBs for the entire onshore cable corridor). Each JB location will require an area of 56m^2. Within this area, the JBs (including JBs, LBs and FOCJBs) will be buried, meaning that soil can be reinstated over them, except where access covers are needed. The access covers are likely to be 1m^2 each, and eight covers are likely to be needed at each JB location within the 56m^2 area. These covers will be the only features at ground surface associated with the JBs, however, a greater thickness of imported fill material (and less excavated soil) will cover the JBs than will be placed over the cables. The JB area of 56m^2 is therefore used to enable a worst-case assessment to be made of their effects on soils and agricultural land. Land is currently agricultural.	36 months
Cable easement (P6)	Up to 97.0ha. Up to 25m[1] in width along the cable route. No requirement for permanent topsoil removal / soil sealing. No visible infrastructure other than access covers at joint bays (considered separately above) and no fencing during operation. Farming activities can resume other than tree planting or hard development (building / other infrastructure construction). Other land use restrictions may apply within	36 months

[1] A typical corridor easement is likely to be 20m, but this may vary according to local conditions. A maximum value of 25m (excluding HDD crossing locations) has been assessed as a reasonable worst-case scenario.

Project element and identifier	Maximum area of land affected and current land use	Construction duration
	the easement (e.g., that could restrict farm business diversification). Land is currently in agricultural use.	
Permanent (operational) accesses (P7)	No development of agricultural land, soil sealing or soil removal required (except at the onshore substation – included in P2 above). Permanent access will be required during the operation and maintenance phase to allow routine maintenance and inspection of the onshore elements of the Proposed Development. Operational accesses are located at existing roads or tracks. If access is required during the operation and maintenance phase this will generally be by a single 4x4 vehicle suitable for use on tracks and farm vehicle routes.	N/A
Temporary works (soil excavation and reinstatement) (construction only):		
Onshore substation temporary works area (T1)	Up to 2.50ha. Land is currently agricultural.	36 months
Landfall temporary construction compound area (T2)	Up to 1.20ha. Land is currently agricultural.	24 months
Onshore cable corridor (T3)	Up to 155.20ha based on 38.8km (36.5km from landfall to Oakendene, and 2.25km from Oakendene to the existing National Grid Bolney substation) and 40m wide onshore cable corridor. Includes haul road. Land is currently agricultural. Note: the cable length of 36.5km from landfall to Oakendene includes cable sections that will be completed using trenchless crossing techniques such as HDD where disturbance to agricultural soils will be avoided. The total area of temporary soil disturbance for the onshore cable corridor will therefore be less than 155.20ha which is the assumed maximum design scenario.	36 months

Project element and identifier	Maximum area of land affected and current land use	Construction duration
Trenchless crossing compounds (onshore cable corridor) and landfall HDD exit pits (T4)	Up to 10.17ha based on 27 trenchless crossing compounds up to 50 x 75m, and 4 HDD exit pits at landfall up to 30 x 4m. Includes landfall HDD exit compound(s). Some of this area is included in the onshore cable corridor, however as the exact orientation of the trenchless crossing compounds / HDD exit pits is not confirmed the area of overlap is not known and the total area of the compounds is therefore used to provide a worst case assessment of the affected area. Land is currently agricultural.	3 – 4 months (per compound)
Temporary construction compounds (onshore cable corridor) (T5)	Up to 17.54ha based on four temporary construction compounds along the onshore cable corridor. Maximum footprints as follows (landfall is considered separately): Climping, 6.13ha. Washington, 3.91ha. Oakendene East, 2.50ha. Oakendene West, 5.00ha. Land is currently agricultural.	3 to 5 years
National Grid Bolney substation extension works temporary construction compound (T6)	Up to 0.35ha, however all land previously developed (i.e., 0ha agricultural land). Land is currently hardstanding.	12 months
National Grid Bolney substation extension works temporary construction access (T7)	Up to 0.17ha (approximately 0.09ha where soil is present). Most of the temporary construction access from Wineham Lane has been previously developed as an access track, however, the track needs extended east of the existing National Grid substation in fields where natural soils are likely to be present (approximately 0.09ha).	12 months
Temporary construction	Estimated up to 4.16ha.	36 months

Project element and identifier	Maximum area of land affected and current land use	Construction duration
accesses (cable corridor) (T8)	Temporary construction accesses / light construction accesses where topsoil removal and temporary hard surfacing may be needed is estimated at 4.16ha, based on 6.79km of 6m wide temporary aggregate surfaced track plus eight passing places (required at access A-26), each a maximum of 0.01ha in area. The above is a worst-case estimate based on the maximum permitted access width and likely maximum length of construction accesses that are not already established roads or tracks. Temporary construction accesses are typically located at existing roads or tracks. The maximum access width is 6m. They will require to connect to the 40m wide construction corridor. Land use is currently agricultural.	

Table 20-16 Maximum assessment assumptions for impacts on soils and agriculture: potential effects (construction phase) by project element

Project element ref. / Potential effect	P1, P2, P4, P7	T3, T8 P5, P6	T2, T4	T5	T1	T6, T7	P3	Total area of land / soil
Changes to soil structure due to inappropriate storage and/or handling of soils during construction or due to the use of heavy machinery which causes compaction	Soils on agricultural land or landscaped area removed, potential for damage to soil resource. **Total area 6.0 + 0.242 + 0.63 = 6.875ha**	Soils on agricultural land removed, potential for damage to soil resource. **Total area** (joint bays and cable easement included in cable corridor) **155.20 + 4.16 = 159.36ha**	Soils on agricultural land removed, potential for damage to soil resource. **Total area 1.20 + 10.17 = 11.37ha**	Soils on agricultural land removed, potential for damage to soil resource. **Total area = 17.54ha**	Soils on agricultural land removed, potential for damage to soil resource. **Total area = 2.50ha**	Access through former agricultural land, some soil removal may be needed. **Total area = 0.09ha**	Potential for topsoil and subsoil to be temporarily removed, potential for damage to soil resource. **Total area = 5.8ha**	**203.513ha**

Project element ref. / Potential effect	P1, P2, P4, P7	T3, T8 P5, P6	T2, T4	T5	T1	T6, T7	P3	Total area of land / soil
Soil erosion (wind or water) due to inappropriate storage and/or construction activities – soil erosion potential where soils are excavated, stockpiled, and soils where vegetation is stripped	Soils on agricultural land to be stripped / stored, potential for soil erosion. **Total area 6.0 + 0.224 + 0.63 = 6.875ha**	Soils on agricultural land to be stripped / stored, potential for soil erosion. **Total area** (joint bays and cable easement included in cable corridor) **155.20 + 4.16 = 159.36ha**	Soils on agricultural land to be stripped / stored, potential for soil erosion. **Total area 1.20 + 10.17 = 11.37ha**	Soils on agricultural land to be stripped / stored, potential for soil erosion. **Total area = 17.54ha**	Soils on agricultural land to be stripped / stored, potential for soil erosion. **Total area = 2.50ha**	Soils on agricultural land may be stripped / stored, potential for soil erosion. **Total area = 0.09ha**	Soils on agricultural land may be stripped / stored, potential for soil erosion. **Total area = 5.8ha**	**203.513ha**

Project element ref. / Potential effect	P1, P2, P4, P7	T3, T8 P5, P6	T2, T4	T5	T1	T6, T7	P3	Total area of land / soil
Temporary removal of topsoil during construction, potential for topsoil degradation, e.g., mixing of topsoil with subsoil or other material. Potential for permanent loss of / damage to soil functions, topsoil resource could be rendered unsuitable for reuse.	Soils on agricultural land or landscaped area removed, potential for damage to soil resource. **Total area 6.0 + 0.242 + 0.63 = 6.875ha**	Soils on agricultural land removed, potential for damage to soil resource. **Total area** (joint bays and cable easement included in cable corridor) **155.20 + 4.16 = 159.36ha**	Soils on agricultural land removed, potential for damage to soil resource. **Total area 1.20 + 10.17 = 11.37ha**	Soils on agricultural land removed, potential for damage to soil resource. **Total area = 17.54ha**	Soils on agricultural land removed, potential for damage to soil resource. **Total area = 2.50ha**	Access through former agricultural land, some soil removal may be needed. **Total area = 0.09ha**	Potential for topsoil and subsoil to be temporarily removed, potential for damage to soil resource. **Total area = 5.8ha**	**203.531ha**

Project element ref. / Potential effect	P1, P2, P4, P7	T3, T8 P5, P6	T2, T4	T5	T1	T6, T7	P3	Total area of land / soil
Damage to (agricultural) land drainage systems due to construction activities, including physical damage to clay / other drains and changes to soil structure affecting land drainage.	Construction on agricultural land, potential for damage to land drains. **Total area 6.0 + 0.224 + 0.63 = 6.875ha**	Construction on agricultural land, potential for damage to land drains. **Total area** (joint bays and cable easement included in cable corridor) **155.20 + 4.16 = 159.36ha**	Construction on agricultural land, potential for damage to land drains. **Total area 1.20 + 10.17 = 11.37ha**	Construction on agricultural land, potential for damage to land drains. **Total area = 17.54ha**	Construction on agricultural land, potential for damage to land drains. **Total area = 2.50ha**	Construction on agricultural land, potential for damage to land drains. **Total area = 0.09ha**	Construction on agricultural land, potential for damage to land drains. **Total area = 5.8ha**	**203.531ha**
Temporary loss of, or damage to, agricultural land – potential for	N/A – permanent change of land use from agricultural	Soils on agricultural land temporarily removed, potential for	Soils on agricultural land temporarily removed, potential for	Soils on agricultural land temporarily removed, potential for	Soils on agricultural land temporarily removed, potential for	Soils on agricultural land temporarily removed, potential for	N/A – permanent change of land use from agricultural	**190.86ha**

Project element ref. / Potential effect	P1, P2, P4, P7	T3, T8 P5, P6	T2, T4	T5	T1	T6, T7	P3	Total area of land / soil
ALC grade to be affected	to substation, substation access and Bolney substation extension	drop in ALC grade. NB/ Includes some permanent change of land use at joint bays and cable easement. **Total area 155.20 + 4.16) = 159.36ha**	drop in ALC grade. **Total area 1.20 + 10.17 = 11.37ha**	drop in ALC grade. **Total area = 17.54ha**	drop in ALC grade. **Total area = 2.50ha**	drop in ALC grade. **Total area = 0.09ha**	to landscaping area	
Permanent loss or sealing of soil / agricultural land due to permanent development	Maximum area where soils may be removed / sealed and land use permanently changed.	Maximum area where soils cannot be reinstated at JBs / LBs / FOJBs. **Total area = 0.37ha**	**N/A All soils can be reinstated.**	**N/A All soils can be reinstated.**	**N/A All soils can be reinstated.**	**N/A All soils can be reinstated.**	All soils likely to be reinstated within the landscaping area, however permanent loss of	**13.024ha**

Project element ref. / Potential effect	P1, P2, P4, P7	T3, T8 P5, P6	T2, T4	T5	T1	T6, T7	P3	Total area of land / soil
	Total area 6.0 + 0.224 + 0.63 = 6.875ha						agricultural land. **Total area = 5.8ha**	

Embedded environmental measures

20.7.5~~20.7.7~~ As part of the Rampion 2 design process, a number of embedded environmental measures have been adopted to reduce the potential for impacts on soils and agriculture. These embedded environmental measures have evolved over the development process as the EIA has progressed and in response to consultation.

20.7.6~~20.7.8~~ These embedded environmental measures also include those that have been identified as good or standard practice and include actions that would be undertaken to meet existing legislation requirements. As there is a commitment to implementing these embedded environmental measures, and also to various standard sectoral practices and procedures, they are considered inherently part of the design of Rampion 2 and are set out in this ES.

20.7.7~~20.7.9~~ **Table 20-17** sets out the relevant embedded environmental measures within the design and how these affect the soils and agriculture assessment.

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Table 20-17 Relevant soils and agriculture embedded environmental measures

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
C-1	The onshore cable route will be completely buried underground for its entire length.~~The onshore cable route will be completely buried underground for its entire length where practicable.~~	Scoping	**Draft DCO** Schedule 1, Part 1, The Authorised Development, Work No. 6, 7, 8, 9, 19~~DCO works plans, description of development and requirements~~	This measure allows the original soils to be replaced on top of the buried cables, the topsoil can be returned to its original state and agricultural land returned to its original grade.
C-5	Trenchless crossings will be provided for features where identified in Appendix A - Crossing Schedule of the Outline Code of Construction Practice.~~Main rivers, watercourses, railways and roads that form part of the Strategic Highways Network will be crossed by Horizontal Directional Drill (HDD) or other trenchless technology where this represents the best environment solution and is financially and technically feasible (see C-17).~~	Scoping	**Draft DCO**, Schedule 1, Part 3, Requirement 6 (4), Cable Parameters **Draft DCO**, Schedule 1, Part 3, Requirement 22, CoCP (4) (p)~~DCO works plans and order limits~~	This measure avoids the disturbance of trenching in sensitive areas close to watercourses and any associated risks to soil. Details of the road and railway crossings are provided in **Chapter 23: Transport, Volume 2** of the ES (Document Reference: 6.2.23) and **Chapter 32**: **ES Addendum, Volume 2** (Document Reference 6.2.32) **[REP5-038]**. The schedule of watercourse crossings is provided in **Appendix 4.1: Crossing schedule, Volume 4** of the ES (Document Reference: 6.2.4.4.2).
C-6	Where practical, sensitive sites will be avoided by the temporary and permanent onshore project footprint including SSSIs, Local Nature	Scoping	Draft DCO, Schedule 1, Part 1 The Authorised Development ~~DCO work plans and order limits~~	Soil within areas designated for nature conservation are classed as having higher sensitivity due to their scarcity. Other soil functions, such as preservation

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	Reserves, Local Wildlife Sites, ancient woodland, areas of consented development, areas of historic and authorised landfills and other known areas of potential contamination, National Trust Land, Listed Buildings, Scheduled monuments, and mineral resources (including existing mineral sites, minerals sites allocated in development plans and mineral safeguarding areas).			of archaeology are covered in **Chapter 25: Historic environment, Volume 2** of the ES (Document Reference: 6.2.25).
C-7	Post construction, reinstatement of agricultural land, or other areas of 'soft' land use where the natural soil profile is present, will be to pre-existing conditions and if remaining in agricultural use, to the original ALC grade, except where a permanent at or above ground structure including the transition joint bay, joint bays and the onshore substation and related access, landscape and drainage works are required (including over the onshore cable ducts). This will be completed in accordance with the Materials Management Plan (MMP)	Scoping – updated at PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e) **Draft DCO**, Schedule 1, Part 3, Requirement 23 Onshore Construction Method Statement (2) (h)~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	This measure ensures, where possible, that the original soil will be reinstated and the baseline soil functions restored, and agricultural land returned to its original grade. An Outline MMP is included as part of the application, and stage-specific MMPs will be developed during pre construction. The stage specific SMP(s) will be used in conjunction with the MMP (and Soil Resource Plan – which will be integrated with and may form a sub-section of the MMP).

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	(C-69) and Defra 2009 Code of Construction Practice for the Sustainable Use of Soils on Construction Sites PB13298. The stage specific Soil Management Plan(s) (SMP(s)) are to be used in conjunction with the MMP (and Soil Resource Plan – which will be integrated with and may form a sub-section of the MMP) to maximise the restoration of excavated soils to their pre-existing condition and location, and if this is not possible, to maximise the reuse of soils within the Proposed Development, minimising soils being relocated outside the Proposed Development or becoming waste. ~~Post construction, the work area will be reinstated to pre-existing conditions as far as reasonably practical in line with the Outline Materials Management Plan (MMP) (C-69) and Defra 2009 Code of Construction for the Sustainable Use of Soils on Construction Sites PB13298.~~			

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
C-11	During construction, topsoil and subsoil will be stored within the temporary working corridor of the onshore cable. The topsoil and subsoil will be segregated and stored in line with Defra 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298, including guidance on utilising separate stockpiles and giving due consideration to adverse weather conditions. Any suspected or confirmed contaminated soils will be separated, contained and tested before removed.~~During construction topsoil and subsoil will be stored within the temporary working corridor of the onshore cable. The topsoil and subsoil will be segregated and stored in line with Defra 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298, including guidance on utilising separate stockpiles and giving due consideration to adverse weather conditions. Any suspected or confirmed contaminated soils will be~~	Scoping – update at PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e~~Secured by the **Outline Soil Management Plan** (Document Reference 7.4) and DCO requirement~~	This measure ensures compliance with the Defra guidance (Defra, 2009) which is recognised as best practice for the protection of soils during development.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	~~separated, contained and tested before removed.~~			
C-12	During topsoil stripping, machinery with low ground pressure will be used to minimise soil compaction where the soil conditions indicate that compaction is possible. Storage time will be kept to the practicable minimum to prevent the soil deteriorating in quality. Topsoil stripped from different fields will be stored separately, as will soil from hedgerow banks or woodland strips.	Scoping	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e)~~Secured by the **Outline Soil Management Plan** (Document Reference 7.4) and DCO requirement~~	This measure is in accordance with the Defra guidance (Defra, 2009) and will minimise soil compaction.
C-13	In areas (or during periods of adverse weather) there may be the requirement to import aggregates to create a stable surface for construction traffic movements. Options such as bogmatting and geotextiles will be considered by the principal contractor for sensitive sections of the route to reduce impact. Selection of an appropriate measure to lower the risk of ground compaction will be made by a suitably trained / experienced person.~~In areas~~	Scoping	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e)~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	This measure ensures the appropriate use of bogmatting and geotextiles which will lower the risk of soils compaction.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	~~(or during periods of adverse weather) there may be the requirement to import aggregates to create a stable surface for construction traffic movements. Options such as bogmatting and geotextiles will be considered by the principal contractor for sensitive sections of the route to reduce impact. Selection of an appropriate measure to lower the risk of ground compaction will be made by a suitably trained / experienced person.~~			
C-19	The onshore cable will be constructed in discrete sections. The trenches will be excavated, the cable ducts will be laid, the trenches backfilled and the reinstatement process commenced in as short a timeframe as practicable. At regular intervals (typically 600m – 1,000m) along the route joint bays/pits will be installed to enable the cable installation and connection process. The stage specific CMS will set out a protocol for the reinstatement of land used	Scoping	**Draft DCO**, Schedule 1, Part 3, Requirement 10 Programme of works (1), Requirement 22 (4) CoCP, Requirement 23 Onshore Construction Method Statement (2) (h~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	This measure, in conjunction with implementation of the **Outline SMP** (Document Reference 7.4), will minimise the storage time for excavated soil, helping to maintain the physical condition of the soil and minimise the effects of storage on soil chemistry/biology so that reinstated soil can return to normal function as quickly as possible.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	temporarily for construction including the timing in accordance with C-103.			
C-28	Particular care will be taken to ensure that the existing land drainage regime is not compromised as a result of construction. A specialist drainage contractor / consultant will be engaged prior to construction to develop the pre- and post-construction drainage plan on agricultural land. Land drainage systems will be maintained during construction and reinstated on completion. Temporary cut-off drains will be installed parallel to the trench-line, before the start of construction, to intercept soil and groundwater before it reaches the trench. These field drains will discharge to local drainage ditches through silt traps, as appropriate, to minimise sediment release.	Scoping	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (b)~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	This measure ensures that consideration of drainage is in accordance with the Defra guidance (Defra, 2009).
C-29	A depth of cover of 1.2m is assumed. Deeper trenches may be required at specific crossing locations (such as watercourses).	Scoping – updated at PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 23 Construction Method Statement (2) (e)	This measure ensures that soil excavation depth is in accordance with the Defra guidance (Defra, 2009). This

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
				also allows excavated topsoil and subsoil to be restored.
C-31	Any disposal off-site of excavated material will be undertaken in consultation with the landowner/occupier and in accordance with the Waste Management Regulations.	Scoping	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (d)~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	This measure minimises risks of inappropriate reuse of materials during construction. Implementation of the Outline MMP, in conjunction with the **Outline SMP** (Document Reference 7.4), will ensure that excavated materials identified for reuse are stored appropriately to protect them from damage or cross contamination and that these materials (including soils) have a defined end use to avoid them becoming waste.
C-33	~~An Outline COCP will be adopted to minimise temporary disturbance to residential properties, recreational users, existing land users. It will provide details of measures to protect environmental receptors.~~ Stage specific CoCPs will include measures to minimise temporary disturbance to residential properties, recreational users and existing land users. It will include details of measures to protect these receptors including the use of	Scoping	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP and 22 (4) (g) ~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	This measure ensures that all soil handling and storage will be in accordance with the **Outline CoCP** (Document Reference 7.2), and the **Outline SMP** (Document Reference 7.2) (C-183).

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	screen fencing at the temporary construction compounds to contribute to minimising visual and noise impacts.			
C-69	~~Construction strategies will be implemented that will seek to maximise the reuse of excavated clean materials from the onshore cable construction corridor where practicable and feasible. Prior to construction, an outline Materials Management Plan (MMP) will be prepared that outlines where excavated non-waste materials will be reused in line with the CL:AIRE (2011) Definition of Waste Code of Practice (DoWCoP). A declaration will be made to CL:AIRE by a Qualified Person that the MMP has been completed in accordance with the DoWCoP and that best practice is being followed.~~ Construction strategies will be implemented that will seek to maximise • ~~•~~the reuse of excavated clean materials from the onshore	Scoping – updated at PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (c), (d)~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	The re-use of clean soil will be covered in the Outline MMP, in conjunction with the **Outline SMP** (Document Reference 7.4), which will set out specific requirements for soil storage to ensure the resource is conserved for appropriate re-use (C-183). The **Outline SMP** (Document Reference 7.4) is the mechanism used to conserve soil structure and soil health to maintain the soil in a condition where it can be reused onsite, and it will inform the specification (e.g., thickness of soil replaced) for the soil restoration. Use of an MMP during construction enables compliance with the Environment Agency regulations for excavated ground materials, and the MMP can be used to show that excavated ground materials (including topsoil and subsoil) are not a waste under the *Waste Management Regulations 1996* and can therefore be reused onsite in line with the Duty of Waste Code of Practice (DoWCoP). Any

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	cable construction corridor where practicable and feasible. Prior to a stage of construction, a Materials Management Plan (MMP) will be developed that outlines where excavated non-waste materials will be reused in line with the CL:AIRE (2011) Definition of Waste Code of Practice (DoWCoP). A declaration will be made to CL:AIRE by a Qualified Person that the MMP has been completed in accordance with the DoWCoP and that best practice is being followed; and • the reuse of excavated minerals from the onshore cable construction corridor as a resource, where they remain available following backfill and where their use is practicable and feasible. Prior to the stage of construction, a MMP will developed which includes a specific minerals section which			material which is not suitable for use or which is surplus will be disposed offsite in line with the Waste Management Regulations (C-31).

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	outlines how minerals will be identified, extracted and stored, and re-used.			
C- 107	Tried and tested invasive species control and biosecurity measures will be used to avoid the spread of infested materials or pathogens.	Scoping – updated at PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (f)~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	This measure enables the risk of cross contamination of soils to be minimised.
C-112	No ground-breaking activity or use of wheeled or tracked vehicles will take place within Climping Beach Site of Special Scientific Interest (SSSI).Within Littlehampton Golf Course and Atherington Beach Local Wildlife Site (LWS) vehicular access will be restricted to a low pressure rig for ground investigation purposes only during the site preparation works. Should remedial action be required in the unlikely event of a drilling fluid breakout access would be taken immediately to ensure drilling fluid can be contained and removed.	PEIR	**Draft DCO** Schedule 1, Part 3, Requirement 22 CoCP (4) (f) and (j), Requirement 23 Onshore Construction Method Statement (2) (b)~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	This measure assists in minimising the disturbance of soils within sensitive sites.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	Reinstatement and compensation measures would then be discussed and agreed with Natural England. This approach will be detailed in the Pollution Incident Response Plan secured through Requirement 22(4)(j) that will be agreed with the relevant planning authority in consultation with the Environment Agency and the statutory nature conservation body.~~No ground-breaking activity or use of wheeled or tracked vehicles will take place south of the seawall (above mean high water springs) within Climping Beach Site of Special Scientific Interest (SSSI) or Littlehampton Golf Course and Atherington Beach Local Wildlife Site (LWS) unless remedial action is required. Any predicted activity will be restricted to foot access for the purpose of surveying and monitoring of the progress of the horizontal directional drill (HDD).~~			
C-114	No ground-breaking activity or use of wheeled or tracked vehicles will take place during the construction phase	PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (f),	This measure assists in minimising the disturbance of soils within sensitive sites.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	within Sullington Hill LWS unless remedial action is required. Any predicted activity will be restricted to foot access for the purpose of surveying and monitoring of the progress of the horizontal directional drill (HDD). The existing farm tracks through Sullington Hill LWS may be used by light vehicles (e.g. 4x4, light van) for access purposes during the operation and maintenance phase.		Requirement 23 Onshore Construction Method Statement (2) (b)~~**Outline CoCP** (Document Reference 7.2) and DCO requirement~~	
C-120	Stone access routes/ haul road and working areas will be constructed of semi-permeable aggregate material (similar to compounds as per C-129) where practical.	PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4)~~**Outline CoCP** (Document Reference 7.2) and DCO~~	The measure assists in minimising changes to local drainage during construction.
C-129	Temporary construction compounds will be surfaced with semi-permeable aggregate material (similar to access roads as per C-120) where practical, with the exception of fuel storage areas and similar where pollution containment in the event of a spillage is the priority. Areas of temporary construction compounds that are used for fuel storage, plant	PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (j) ~~**Outline CoCP** (Document Reference 7.2) and DCO~~	The measure assists in minimising changes to local drainage during construction.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	maintenance and refuelling will be surfaced with fully impermeable materials to prevent any infiltration of contaminated runoff and contain bunding in line with commitment C-8 and C-167.			
C-131	Where potential flood risk receptors could be impacted by a loss of floodplain storage and /or impacts on floodplain conveyance, the loss will be addressed through soil stockpiles (associated with both the cable construction and the temporary haul road) being located outside of the fluvial floodplain.	PEIR	**Draft DCO**, Schedule 1, Part 1 The Authorised Development, Works No. 11 **Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e)~~**Outline CoCP** (Document Reference 7.2) and DCO~~	The measure assists in minimising changes to local drainage during construction.
C-132	Soil stockpiles in the tidal floodplain will have regular gaps to prevent floodplain compartmentalisation. Soil stockpiles would have a maximum bund to gap ratio of 4:1. The worst case scenario continuous length of embankment would be up to 80m, i.e. with 20m gaps at 80m intervals.	PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (b) and (e)~~**Outline CoCP** (Document Reference 7.2) and DCO~~	This measure ensures that soil stockpiles will be managed to minimise the risk of soil erosion occurring.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
C-133	Stockpiles will be present for the shortest practicable timeframe, with stockpiles being reinstated as the construction work progresses in order to minimise areas of exposed soil and any associated silt laden run-off. Stockpiles which are anticipated to remain for more than six months will be seeded to encourage stabilisation except where the existing seed bank is to be used in reinstatement..~~Stockpiles will be present for the shortest practicable timeframe, with stockpiles being reinstated as the construction work progresses in order to minimise areas of exposed soil and any associated silt laden run-off. Stockpiles which remain present for six months or longer will be seeded to encourage stabilisation.~~	PEIR – updated at ES	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e)~~Secured by the **Outline SMP** (Document Reference 7.4) and DCO~~	This measure, in conjunction with implementation of the **Outline SMP** (Document Reference 7.4), will minimise the storage time for excavated soil, helping to maintain the physical condition of the soil and minimise the effects of storage on soil chemistry/biology so that reinstated soil can return to normal function as quickly as possible and also minimise the potential for soil being washed away due to flooding on areas of stripped soils.
C-154	Within the fluvial floodplain and at surface water flow pathways, the permanent cables will be completely buried, with the land above reinstated to pre-construction ground levels	PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (b)~~DCO works plans, description of development and requirements~~	The **Outline SMP** (Document Reference 7.4) will detail how soil is to be reinstated to ensure that the soil's hydrological functions are restored following construction.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	(some mounding may be appropriate to allow for settlement).			
C-183	An Outline Soils Management Plan (SMP) has been developed (included in the Outline CoCP) to enable construction works to be completed in accordance with the Defra Code of Construction Practice for the Sustainable Use of Soils on Construction Sites 2009 to protect soil resources from damage during the construction phase. Where safety (unexploded ordnance -UXO) or access constraints have limited the extent of soil and ALC survey to date, survey will be completed at the required density post consent and prior to construction, as part of detailed design. Stage specific SMPs based in the Outline SMP will be produced prior to construction, and once the soil and ALC surveys are complete, to include protective measures for all relevant soil types and agricultural land grades within the working corridor.~~nagement Plan (SMP) has been developed (included~~	PEIR	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e)~~Secured by the **Outline SMP** (Document Reference 7.4) and DCO~~	Development and implementation of an **Outline SMP** (Document Reference 7.4), based on the findings of a soil survey, reflects the best practice approach outlined in the Defra guidance (Defra, 2009) to minimising the effects of development on soil and agricultural land quality.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	~~in the Outline CoCP) to enable construction works to be completed in accordance with the Defra Code of Construction Practice for the Sustainable Use of Soils on Construction Sites 2009 to protect soil resources from damage during the construction phase. Where safety (unexploded ordnance - UXO) or access constraints have limited the extent of soil and ALC survey to date, survey will be completed at the required density post consent and prior to construction, as part of detailed design. The SMP will be updated to a stage specific SMP prior to construction, and once the soil and ALC surveys are complete, to include protective measures for all relevant soil types and agricultural land grades within the working corridor.~~			
C-216	All ancient woodland will be retained. A stand-off of a minimum of 25m from any surface construction works will be maintained in all locations from cable installation works. Construction traffic may operate within 25m of an ancient	ES	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (f) **~~Outline Construction Method Statement~~**	This measure ensures that there will be no construction vehicular access or ground works within Ancient Woodlands. All ground works will be restricted to areas in excess of 25m from the edge of Ancient Woodland.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	woodland on existing tracks, with any track maintenance works being restricted to the current width. Works to provide safe access from the highway are required in three locations within 25m of ancient woodland, being accesses A-42, A-56 and A-57. At these locations specific measures including dust control shall be detailed in the stage specific Code of Construction Practice that will manage any potential indirect effects on ancient woodland. Where ancient woodland is crossed via trenchless crossing a depth of at least 6m below ground will be maintained to avoid root damage and drill launch and retrieval pits will be at least 25m from the woodland edge.~~Where ancient woodland is crossed via trenchless crossing a depth of at least 6m below ground will be maintained to avoid root damage and drill launch and retrieval pits will be at least 25m from the woodland edge. All ancient woodland will be retained with a stand-off of a minimum of 25m from any surface~~		~~(Document Reference: 7.2.23)~~	

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	~~construction works. Construction traffic may operate within 25m of an ancient woodland on existing tracks should any track maintenance works be restricted to the current width.~~			
C-256	To support the successful reinstatement of soils over shallow chalk bedrock, and to help return the soil drainage conditions to baseline following soil reinstatement, handling and storage of excavated chalk within the cable corridor (including within the South Downs National Park [SDNP]) will be designed with reference to CIRIA (2002), Engineering in chalk (C574D). As a minimum this will include the measures set out in the Department for Transport (2020) Specification for the Reinstatement of Openings in Highways Fourth edition, for excavated chalk, including segregated stockpiling of chalk for re-use, avoidance of multiple handling and, during wet weather, protection of excavated chalk from water ingress.	ES	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e)~~Secured by the **Outline SMP** (Document Reference: 7.4) and DCO requirement~~	Included in the **Outline SMP** (Document Reference 7.4) to minimise the effects of the development on soil and agricultural land quality.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
C-257	Where it is identified through soil resource and materials management planning that topsoil or subsoil cannot be reinstated at its original location, sampling and testing of excavated topsoil and subsoil will be completed in accordance with BS3882:2015 and BS8601:2013, respectively, at the earliest opportunity. This will inform the reuse of these soils elsewhere within the proposed DCO Order Limits or at a suitable offsite receptor site in compliance with the Definition of Waste Code of Practice and the Materials Management Plan (C-69).	ES	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (c)~~Secured by the **Outline SMP** (Document Reference: 7.4) and DCO~~	Supports the reuse of soils to limit soils becoming waste.
C-258	A tracked hydraulic excavator will be used to load topsoil and subsoil. Soils will be loaded into a dump truck and loose-tipped in heaps from the dump truck starting at the furthest point in the storage area and working back toward the access point. A tracked excavator will be used to level soil heaps, and to compact and re-grade the stockpile as needed, in accordance with the Defra guidance. Soils will be reinstated, or placed, by	ES	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e)~~Secured by the **Outline SMP** (Document Reference: 7.4) and DCO~~	Protection of soil structure during soil handling activities in the construction phase.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to soils and agriculture assessment
	tracked hydraulic excavator using the loose tipping method in the Defra Code of Construction (Defra, 2009), with only gentle firming by tracked vehicles.			
C-259	Where there is flexibility for a final joint bay location to be positioned in areas of agricultural land with different ALC grades, consideration will be given in the final design to locating the joint bay in the land with the lowest ALC grade.	ES	**Draft DCO**, Schedule 1, Part 3, Requirement 22 CoCP (4) (e)~~**Outline CoCP** (Document Reference 7.2) and DCO~~	Supports protection of the best quality agricultural land.

20.7.820.7.10 Further detail on the environmental measures in **Table 20-17** is provided in the **Commitments Register** (Document Reference 7.22) which sets out how and where particular environmental measures will be implemented and secured.

20.8 Methodology for ES assessment

Introduction

20.8.1 The project-wide generic approach to assessment is set out in **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5). The assessment methodology for soils and agriculture in the ES is generally consistent with that provided in the Scoping Report (RED, 2020). No changes have been made since the original PEIR (RED, 2021) provided alongside the first statutory consultation exercise in 2021, in which the methodology was slightly modified in response to the Scoping Opinion (Planning Inspectorate, 2020) in relation to effects on soil ecosystem services, and the sustainable use of land and soil as a natural resource.

Assessment Methodology

20.8.2 The soils and agriculture assessment focuses on likely significant effects on:

- soil resources and functions;
- agricultural land resources; and
- financial impact on farming businesses

20.8.3 The assessment of likely significant effects for soils and agriculture is based on the extent of soils and agricultural land that may be affected and whether the effects will be temporary or permanent. The assessment is informed by:

- information about the construction, operation and maintenance, and decommissioning activities associated with Rampion 2 as set out in **Table 20-15** and **Table 20-16**;
- relevant national policy, strategy, legislation and guidance documents as set out in **Table 20-1** and **Table 20-2**; and
- stakeholder engagement feedback.

20.8.4 The assessment takes into consideration the sensitivity of the affected receptor or resource and the magnitude of change from the baseline conditions resulting from the Proposed Development. This results in an evaluation of significance and an indication of likely significant effects.

20.8.5 As outlined in **Section 20.5**, the ALC grades within the proposed DCO Order Limits include Grade 2, Subgrade 3a, Subgrade 3b and Grade 4, with Grades 2 and 3a being classed as best and most versatile land. The Soil and ALC survey completed has found most of the land surveyed to be Subgrade 3b, which is not best and most versatile land. However, as the land not surveyed to date includes a significant area of the South Downs which has a higher potential than other areas in the proposed DCO Order Limits to be best and most versatile land, it has been

assumed, in order to provide a conservative assessment of the effects of temporary construction activities on soils and agricultural land, that all of the land within the proposed DCO Order Limits is Subgrade 3a, which is best and most versatile.

Receptor sensitivity

20.8.6 Definitions of receptor sensitivity used in the assessment are provided in **Table 20-18**. The receptor sensitivity assessment approach has been updated in response to the Scoping Opinion (Planning Inspectorate, 2020) and is designed to take account of key soil functions and ecosystem services, including as a growing medium for crops, as a store of organic matter including carbon, providing habitat and supporting biodiversity, and soil's role in the hydrological cycle. There are interactions between soil and receptors covered in other ES chapters, including those provided in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22), **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26), and **Chapter 24: Ground conditions, Volume 2** of the ES (Document Reference: 6.2.24).

20.8.7 Definitions of receptor sensitivity used in the assessment are provided in **Table 20-18**.

Table 20-18 Sensitivity of receptor / resource

Sensitivity	Criteria / description
Very High	Grade 1 and 2 ALC agricultural land[2] Soils directly supporting an European Union (EU) designated site (e.g. Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar). Peatlands – blanket bog, raised bog, fen peat soils[3] (mapped peatland and peatland with any statutory designation including SSSI).
High	Subgrade 3a ALC agricultural land[4] Soils (other than peat) directly supporting a UK designated site (e.g., SSSI, Local Nature Reserve (LNR)).

[2] Grade 1: Excellent quality agricultural land with no or very minor limitations to agricultural use. Grade 2: Very good quality agricultural land with minor limitations which affect crop yield, cultivation or harvesting.
[3] Mapped on National Soils Resources Institute Soilscapes map
[4] Subgrade 3a: Good quality agricultural land capable of producing moderate to high yields of a narrow range of arable crops or moderate yields of a wider range of crops.

Sensitivity	Criteria / description
	Peatland not previously mapped and with no designation[5].
Moderate	Subgrade 3b ALC agricultural land[6] Soils (other than peat) supporting non-statutory designated sites (e.g., Local Wildlife Sites, Ancient Woodland, Open Mosaic Habitat).
Low	Grade 4 and 5 ALC agricultural land[7] Soils (other than peat) supporting non-designated notable or priority habitats, soils on greenfield sites not in agricultural use (e.g., amenity land in urban areas, parks and gardens).
Very low	Other soils, not in agricultural use (e.g., badly damaged or contaminated soils, soils on previously developed land, including soils formerly sealed by development).

20.8.8 Planning guidance and the NPPF (MHCLG, 2021) refer to the need to protect BMV agricultural land (ALC Grades 1 and 2, and Subgrade 3a). Hence other agricultural land is regarded as of lower sensitivity. In the south of England Subgrade 3a land is a relatively common resource and, therefore, is regarded as of lower sensitivity than Grade 1 and 2 land, which is the best available both locally and nationally.

20.8.9 In accordance with the NPPF (MHCLG, 2021) which states that undeveloped land can perform many functions, including for wildlife, flood risk mitigation, carbon storage or food production, **Table 20-18** assigns the highest sensitivity to soils performing key agricultural functions, organic matter (including carbon) storage/cycling functions, flood risk mitigation and biodiversity/wildlife supporting functions at a national level.

20.8.10 Disturbance of soil cannot be avoided by the Proposed Development and it is acknowledged that soil is vulnerable to damage during handling and storage, even if the effect is only temporary, and that some soil types are less resilient to handling than others. For the purposes of the assessment, soil sensitivity is

[5] Site with potential for peat deposits >0.3m thickness, may be identified through survey e.g., Phase 1 Extended Habitat Survey
[6] Subgrade 3b: Moderate quality agricultural land, Subgrade 3b is not defined as BMV.
[7] Grade 4: Poor quality agricultural land, meaning land with severe limitations on the range of viable crops and level of yields, which is mainly suited to grass with occasional arable crops such as cereals and forage crops. Grade 4 can also include arable land that is very dry because of drought.
Grade 5: Land with severe limitations which restricts use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

assessed on a soil function basis. However, it is also acknowledged that during the construction phase of onshore elements of the Proposed Development, the soil type (e.g., topsoil or subsoil, and specific types of each) and its structural qualities can influence its sensitivity to handling, storage and placement.

20.8.11 Different soil types have different resilience to structural damage during soil handling (including soil stripping, storage in stockpiles and restoration), and the interaction between soil texture and soil moisture is key. The sensitivity of the soil to handling is likely to vary along the onshore cable corridor as several different soil types will be encountered from permeable silts over gravel to fine loamy slowly permeable soils. Soil types confirmed to be present within the proposed DCO Order Limits and comment on their sensitivity to handling is included in the **Outline SMP** (Document Reference 7.4).

20.8.12 The potential effects of the Proposed Development on soils within the onshore part of the proposed DCO Order Limits have been assessed using the sensitivity classification relative to the available ALC survey results and, where survey has not yet been completed, on the provisional ALC grade of the remaining land and the Natural England (2017) Likelihood of BMV Agricultural Land – Strategic scale map London and the South East. The confirmed and provisional ALC grades are detailed in **Table 20-14**. Based on this information, the agricultural land is considered as Subgrade 3a, which is the most appropriate grade to provide a conservative assessment of the effects on soils and agricultural land. This has been applied to areas where ALC survey has been completed and elsewhere, which means the agricultural land is a high sensitivity receptor. The soil is also assigned high sensitivity based on its biomass function. This classification relates to the soil's important function as a medium for growing food and other biomass, however, soils on agricultural land also perform other inter-related soil functions, notably carbon and nitrogen cycle functions, providing habitat and supporting biodiversity, and hydrological cycle functions. Assessment of effects on soil resources using the agricultural classification is considered to be appropriate for Rampion 2 due to most of the land being in agricultural use, the embedded environmental measures to avoid ground disturbance in designated ecological conservation sites and Ancient Woodland, and because, with limited exceptions (the onshore substation landscaping and drainage, and other areas of permanent development as detailed in **Table 20-17**) the Proposed Development, seeks to restore the land back to agricultural use, and to its current ALC grade.

Magnitude of change

20.8.13 The assessment of the magnitude of change from baseline conditions includes a consideration of the duration and reversibility of the change in the context of relevant legislation, policy standards and guidance. As the soils within the onshore part of the proposed DCO Order Limits are located on agricultural land and are likely to constitute BMV land, the approach to the assessment of magnitude of change has been guided by current planning guidance and Natural England guidance (Natural England, 2012) for developments on agricultural land.

20.8.14 It is recognised that there may be changes to other soil functions in addition to crop/biomass production as a result of the onshore elements of the Proposed Development, however, in general, adverse effects on soil's biomass function will

correspond to adverse effects on other key soil functions, and vice versa. For example, a healthy soil capable of performing its biomass function to a high standard should also be capable of other key functions, such as storing flood water and supporting biodiversity, however, compaction of this soil would lead to a reduction in all of these functions. **Table 20-19** provides examples of how the magnitude of change is determined with respect to soils and agriculture features.

20.8.15 Magnitude of change may be either beneficial or adverse. The criteria and examples in **Table 20-19** focus on adverse changes, however, beneficial changes may also occur and will be considered on a case-by-case basis as required.

Table 20-19 Magnitude of change for agricultural land and soils

Magnitude of change	Description example
Very high	Permanent or long term temporary (>5 years) loss or significant degradation* of over 80ha of agricultural land or soil.
High	Permanent or long term temporary (>5 years) loss or significant degradation of between 50ha to 80ha of agricultural land or soil.
Medium	Permanent or long term temporary (>5 years) loss or significant degradation of between 20ha to 50ha of agricultural land or soil.
Low	Permanent or long term temporary (>5 years) loss or degradation of up to 20ha of agricultural land or soil or temporary damage over 20ha which will rectify without mitigation.
Very Low	Temporary damage to areas up to 20ha which will rectify without mitigation.

*Significant degradation in this context means that a key soil function is significantly reduced, an example could be that agricultural land classification is reduced due to changes in the soil's structure (e.g., due to compaction)

20.8.16 The magnitude of change on BMV land will depend on the amount to be affected by the onshore elements of the Proposed Development. The *Town and Country Planning (Development Management Procedure) (England) Order 2015* only requires Natural England to be consulted on development that involves the loss of greater than 20ha of grades 1, 2 or 3a agricultural land. Consequently, losses smaller than this threshold are considered to have a small magnitude of change on the national stock of BMV land. Losses of over 80ha of BMV land are equivalent to the size of a medium to large farm and consequently the magnitude of change is considered to be very high. At a national policy level, total farm holdings below 20 hectares in size are generally considered collectively as small farms.

20.8.17 The construction phase associated with the onshore cable route element of the Proposed Development, where the majority of temporary disturbance to soils and agricultural land will occur, is expected to last for approximately three years (**Section 4.6** of **Chapter 4: The Proposed Development, Volume 2** of the ES

(Document Reference: 6.2.4)). When handled and stored appropriately, soil in temporary storage can be maintained for a period of years and should be reusable shortly after reinstatement. In practice, soil will be reinstated as early as possible, and within one year where possible, such as at cable trenches and trenchless crossing construction compounds, and the working area reduced accordingly to protect the reinstated soils. This is addressed in the **Outline SMP** (Document Reference 7.4) and further details of measures to avoid or minimise effects on soils will be confirmed during pre construction in stage specific SMP(s), soil resources plan and the MMP, in compliance with the measures in the Outline SMP and any additional measures identified to be needed once further soil surveys are completed.

Evaluation of significance

20.8.18 During the assessment of effects for each identified receptor the sensitivity value in **Table 20-18** is combined with the magnitude of change from **Table 20-19** to produce an overall significance rating based on the evaluation matrix shown in **Table 20-20**. A 'significant' effect is assessed as a Moderate or Major. A 'significant' effect is assessed as a Major rating whereas a Moderate rating is considered to be 'potentially significant'. This approach is based on professional judgement and carried out on a precautionary basis. Significance of effect can be beneficial, neutral or adverse, depending on the type of effect and its magnitude.

20.8.19 The evaluation of significance for soils has been undertaken using professional judgement, drawing upon information about the nature and extent of the soil resources present, their environmental setting and the type of construction activity proposed.

20.8.20 The evaluation of significance for agricultural land quality has been undertaken using professional judgement, drawing upon information about the area of BMV agricultural land (defined as Grade 1, 2 and 3a of the ALC) which might be lost or damaged together with contextual data about BMV land within the Study Area.

Table 20-20 Significance evaluation matrix

Sensitivity/importance/value	Magnitude of change: Very high	High	Medium	Low	Very low
Very high	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Potentially significant)
High	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)
Medium	Major (Significant)	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)
Low	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)
Very Low	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

20.8.21 Where effects are assessed to be Potentially Significant in EIA terms, professional judgement is applied to determine whether they are Significant or Not Significant.

20.9 Assessment of effects: Construction phase

Changes to soil structure due to inappropriate storage and/or handling of soils or due to the use of heavy machinery which causes compaction

Sensitivity or value of receptor

20.9.1 The sensitivity of the agricultural land is considered to be **high** (**Table 20-18**) based on the average ALC Subgrade of 3a (BMV), and all affected land being in agricultural use. The soil is also assigned **high** sensitivity (**Table 20-18**) based on its biomass function and taking into account its environmental setting.

Magnitude of change

20.9.2 The areas potentially affected by compaction damage include all areas where soils will be disturbed due to the Proposed Development. This includes:

- the onshore substation, onshore substation permanent access and onshore substation temporary compound;

- the existing National Grid Bolney substation extension works and temporary construction access;
- the onshore cable corridor (including joint bay locations), temporary construction accesses (where not already an established road or track);
- the landfall temporary construction compound, trenchless crossing compounds, other temporary construction compounds; and
- the onshore substation landscaping and drainage area at Oakendene.

20.9.3 Collectively this corresponds to an area of 203.531~~1~~ha (see maximum design parameters in **Table 20-15** and **Table 20-16**), which potentially results in a very high magnitude of change. However, relevant embedded environmental measures (**Table 20-17**) that will influence the magnitude of change include:

- the avoidance of sensitive sites (C-6), as detailed in **Section 20.6** these include soils within a SSSI and two LWS within the onshore part of the proposed DCO Order Limits;
- topsoil and subsoil storage, formation of stockpiles and other soil handling including reinstatement within the temporary working corridor will be in line with Defra guidance (Defra, 2009) (C-11);
- using machinery with low ground pressure to reduce compaction (C-12);
- appropriate use of bogmatting or geotextiles in areas of construction traffic to protect underlying soil resource (C-13);
- the onshore cable will be constructed in discrete sections which will minimise the storage time for excavated soil, helping to maintain the physical condition of the soil and minimise the effects of storage on soil chemistry / biology so that reinstated soil can return to normal function as quickly as possible (C-19);
- an **Outline SMP** (Document Reference 7.4) (C-183) has been developed, informed by the desk-based review and soil baseline information gathered during the Soil and ALC survey. this will be further developed into a final SMP using additional Soil and ALC survey data to be collected during pre-construction. The appointed construction contractor will ensure that the final SMP is completed by soil scientists or experienced soil specialists during pre-construction, setting out measures to protect the soil resources during construction, including lowering the risk of compaction occurring; and
- A tracked hydraulic excavator will be used to load topsoil and subsoil, in accordance with the Defra guidance (Defra, 2009). Soils will be reinstated, or placed, by tracked hydraulic excavator using the loose tipping method identified in the Defra Code of Construction (Defra, 2009), with only gentle firming by tracked vehicles (C-257).

20.9.4 The magnitude of change will be significantly reduced to **low** (**Table 20-19**), based on the implementation of the above embedded environmental measures, in particular all working areas being covered by the protective measures to be outlined in the **Outline SMP** (Document Reference 7.4) and compliant with the Defra guidance (Defra, 2009).

Significance of residual effect

20.9.5 The sensitivity of the receptor is **high** (**Table 20-18**), and the magnitude of change, with the implementation of embedded environmental measures (**Table 20-17**), is **low** (**Table 20-19**), giving a residual effect of **Moderate adverse** significance (**Table 20-20**), with moderate being **Potentially Significant** in EIA terms. The moderate adverse scenario is considered to be worst case; it reflects the large area where soil will be disturbed during construction and the fact that when soil is permanently or temporarily displaced, or during construction activity, there is potential for it to become damaged. Based on the commitment to complete the final SMP pre-construction with sufficient Soil and ALC Survey data, implementation of the final SMP during the construction phase, and compliance with Defra guidance (Defra, 2009), the overall effect is likely to be **Not Significant** in EIA terms.

Soil erosion (wind or water) due to inappropriate storage and/or construction activities – soil erosion potential where soils are excavated, stockpiled, and soils where vegetation is stripped

Sensitivity or value of receptor

20.9.6 The sensitivity of the agricultural land is considered to be **high** (**Table 20-18**) based on the average ALC Subgrade of 3a (BMV), and all affected land being in agricultural use. The soil is also assigned **high** sensitivity (**Table 20-18**) on the basis of its biomass function and taking into account its environmental setting.

Magnitude of change

20.9.7 There is the potential for soil erosion to occur across all soils that are excavated and stockpiled, and soils where vegetation is stripped. The total area potentially affected is 203.531~~1~~ha (see maximum design parameters in **Table 20-15** and **Table 20-16**) and includes:

- the onshore substation, onshore substation permanent access and onshore substation temporary construction compound;
- the existing National Grid Bolney substation extension works and temporary construction access;
- the onshore cable corridor (including joint bay locations), temporary construction accesses (where not already an established road or track);
- the landfall temporary construction compound, trenchless crossing compounds, other temporary construction compounds; and
- the onshore substation landscaping and drainage area at Oakendene.

20.9.8 Relevant embedded environmental measures (**Table 20-17**) that will influence the magnitude of the change include:

- topsoil and subsoil storage within the temporary onshore cable corridor in line with Defra guidance (Defra, 2009) (C-11);

- machinery with low ground pressure will be used to minimise soil compaction which can make soil more vulnerable to erosion (C-12)
- bogmatting or geotextiles used in areas of construction traffic to protect underlying soil resource (C-13);
- the onshore cable will be constructed in discrete sections which will minimise the storage time for excavated soil, helping to maintain the physical condition of the soil and minimise the effects of storage on soil chemistry/biology so that reinstated soil can return to normal function, with vegetation restored, as quickly as possible (C-19);
- stockpiles located within the tidal floodplain will have a bund to gap ratio of between 3:1 and 4:1 (C-132);
- stockpiles will be stored for the shortest amount of time possible and seeded where present for longer than six months (and where identified through materials management planning that stockpiles will be present for longer than six months seeding will take place at the earliest opportunity) (C-133); and
- an **Outline SMP** (Document Reference 7.4) (C-183) has been developed, informed by the desk based review and soil baseline information gathered during the Soil and ALC survey. This will be further developed into a final SMP by the appointed construction contractor, setting out measures to protect soil resources including lowering the risk of soil erosion occurring from exposed / stripped soils and stockpiled soils.

20.9.9 The magnitude of change taking into account the above embedded environmental measures, including implementation of the **Outline SMP** (Document Reference 7.12), completion of the Final SMP pre-construction and implementation of the final SMP during construction, means that the impact that temporary construction activities relating to Rampion 2 will have on soil erosion is significantly reduced to **low** (**Table 20-19**).

Significance of residual effect

20.9.10 The sensitivity of the receptor is **high** (**Table 20-18**), and the magnitude of change, with the implementation of embedded environmental measures **(Table 20-17**), is **low** (**Table 20-19**), giving a residual effect of **Moderate adverse** significance (**Table 20-20**), with moderate being **Potentially Significant** in EIA terms. The moderate adverse scenario is considered to be worst case and reflects the large area where soil stripping will be needed, and large volume of soil that will require temporary stockpiling then reinstatement. Based on the commitment to complete the Final SMP pre-construction with sufficient Soil and ALC Survey data, implementation of the final SMP during the construction phase, and compliance with Defra guidance (Defra, 2009), soil erosion will be minimised and the overall effect is likely to be **Not Significant** in EIA terms.

Temporary removal of topsoil during construction, potential for topsoil degradation e.g., due to mixing of topsoil with subsoil or other material (non soil), impacts from pollutants / invasive plants. Potential for permanent loss of soil functions / damage to soil health, topsoil resource could be rendered unsuitable for reuse.

20.9.11 Temporary displacement of topsoil will occur during construction activities. Temporary soil storage could result in degradation or loss of topsoil due to mixing of topsoil with subsoil or other material due to inappropriate storage/handling, resulting in soil degradation. There is potential for permanent loss of the topsoil resource due to damage and it could be rendered unsuitable for reuse.

Sensitivity or value of receptor

20.9.12 The sensitivity of the agricultural land is considered to be **high** (**Table 20-18**) based on the average ALC Subgrade of 3a (BMV), all affected land being in agricultural use. The soil is also assigned **high** sensitivity (**Table 20-18**) based on its biomass function and taking into account its environmental setting.

Magnitude of change

20.9.13 There will be a temporary loss of topsoil as it is removed and stockpiled for the construction phase at the onshore substation, onshore substation permanent access and onshore substation temporary construction compound, the existing National Grid Bolney substation extension works and temporary construction access, the onshore cable corridor (including joint bay locations), temporary construction accesses (where not already an established road or track), the landfall temporary construction compound, trenchless crossing compounds, other temporary construction compounds and the onshore substation landscaping and drainage area at Oakendene.

20.9.14 The total area potentially affected is 203.53~~1~~ha (see maximum design parameters in **Table 20-15** and **Table 20-16**), which is considered of very high magnitude of change. However, given the phased construction, smaller areas will be exposed at any one time. Where soil is excavated from areas where it will not be restored (for example permanent development at the onshore substation) it will be treated in the same manner as soil that can be reinstated at its original location, and generation of surplus soil will be minimised through reuse of soil within the onshore part of the proposed DCO Order Limits wherever possible in accordance with a Materials Management Plan. Relevant embedded environmental measures (see **Table 20-17**) that will protect the topsoil from degradation/damage influence the magnitude of the change include:

- post construction work areas will be reinstated to pre-existing conditions in line with Defra guidance (Defra, 2009a) and in accordance with the Materials Management Plan (MMP) for Rampion 2 (C-7);
- topsoil and subsoil storage within the temporary working corridor in line with Defra guidance (Defra, 2009a) (C-11);
- stockpiles in the tidal floodplain with bund to gap ratio of between 3:1 and 4:1 (C-132);

- stockpiles will be stored for the shortest amount of time possible and seeded where present for longer than six months (C-19 and C-133);
- an **Outline SMP** (Document Reference: 7.4) (C-183) has been developed, informed by the desk based review and soil baseline information gathered during the Soil and ALC survey, this will be further developed into a Final SMP by the appointed construction contractor. The appointed construction contractor will ensure that the Final SMP is completed by soil scientists or experienced soil specialists during pre-construction, setting out measures to protect the soil resources during construction. This will include measures to protect topsoil and subsoil resources, and the stage specific SMP(s) will be used in conjunction with the MMP (and Soil Resource Plan – which will be integrated with and may form a sub-section of the MMP); and
- Where it is identified through soil resource and materials management planning that topsoil or subsoil cannot be reinstated at its original location, sampling and testing of excavated topsoil and subsoil will be completed in accordance with BS3882:2015 and BS8601:2013, respectively, at the earliest opportunity. This will inform the reuse of these soils elsewhere within the proposed DCO Order Limits or at a suitable offsite receptor site (C-256) in compliance with the Definition of Waste: Code of Practice and the Outline Materials Management Plan (C-69).

20.9.15 The magnitude of the change is **low** (**Table 20-19**).

Significance of residual effect

20.9.16 The Proposed Development will involve temporary loss of topsoil during construction within the cable corridor, however due to the implementation of embedded environmental measures outlined in **Table 20-17** (C-12, C-19 and C-133) this will be across a much smaller area than the total working area at any given time. This is considered a low magnitude of change, on a high sensitivity receptor, equating to a temporary residual effect of **Moderate adverse** significance (**Table 20-20**), with moderate being **Potentially Significant** in EIA terms. The moderate adverse scenario is considered to be worst case and reflects the large area where topsoil will be temporarily removed. Based on the commitment to implement the final SMP during the construction phase, and its interaction with the MMP, the potential for loss of / damage to topsoil will be minimised and the overall effect is likely to be **Not Significant** in EIA terms.

Damage to (agricultural) land drainage systems due to construction activities, including physical damage to clay / other drains and changes to soil structure affecting land drainage.

20.9.17 Land drains are likely to be present on all agricultural land affected by the Proposed Development and may include buried clay drains, typically at 0.75m to 1.20m below ground level, and which can be damaged during excavation work. If this is not addressed, it can result in ponding or waterlogging of previously well-drained land.

Sensitivity or value of receptor

20.9.18 The sensitivity of the agricultural land is considered to be **high** (**Table 20-18**) based on the average ALC Subgrade of 3a (BMV), all affected land being in agricultural use. The soil is also assigned **high** sensitivity (**Table 20-18**) based on its biomass function and taking into account its environmental setting.

Magnitude of change

20.9.19 There is the potential for drains to be damaged within the onshore cable corridor which will impact the surrounding agricultural land and soil, causing waterlogging, erosion and compaction. As drainage layouts are not yet known, the potential area affected cannot currently be quantified, however, the worst-case of the total extent of land affected, includes all agricultural areas where soils will be disturbed due to the Proposed Development. This includes:

- the onshore substation, onshore substation permanent access and onshore substation temporary compound;
- the existing National Grid Bolney substation extension works and temporary construction access;
- the onshore cable corridor (including joint bay locations), temporary construction accesses (where not already an established road or track);
- the landfall temporary construction compound, trenchless crossing compounds, other temporary construction compounds; and
- the onshore substation landscaping and drainage area at Oakendene. At this area a new drainage system will be constructed, the land is currently agricultural and existing drains within it may connect to drains serving fields on adjacent land.

20.9.20 Collectively this corresponds to an area of 203.531~~1~~ha (see maximum design parameters in **Table 20-15** and **Table 20-16**), which potentially results in a very high magnitude of change. However, relevant embedded environmental measures (**Table 20-17**) that will influence the magnitude of change include:

- Commitment to obtain appropriate specialist drainage contractor / consultant input to developing the drainage plan for pre- and post-construction phases prior to construction. Temporary cut-off drains will be installed parallel to the trench-line, before the start of construction, to intercept soil and groundwater before it reaches the trench. These field drains will discharge to local drainage ditches through silt traps, as appropriate, to minimise sediment release (C-28).

20.9.21 The magnitude of the change is **very low** to **low** (**Table 20-19**).

Significance of residual effect

20.9.22 The sensitivity of the receptor is **high** (**Table 20-18**), and the magnitude of change, with the implementation of embedded environmental measures (**Table 20-17**), is **very low** to **low** (**Table 20-19**), giving a residual effect of **Minor** to **Moderate adverse** significance (**Table 20-20**), with minor being not significant, and moderate being **Potentially Significant** in EIA terms. The embedded

measures to protect drainage (C-28) include the engagement of a specialist drainage contractor / consultant prior to construction to develop the pre- and post-construction drainage plans on agricultural land, and the commitment that land drainage systems will be maintained during construction and reinstated on completion. With these embedded environmental measures (**Table 20-17**), the effect is assessed to be a temporary residual effect of **Minor Adverse** significance (**Table 20-20**), which is **Not Significant** in EIA terms.

Temporary loss of, or damage to, agricultural land – potential for ALC grade to be lowered

Sensitivity or value of receptor

20.9.23 There will be temporary loss of agricultural land and potentially damage to soil and agricultural land quality during construction of Rampion 2. The sensitivity of the agricultural land is considered to be **high** (**Table 20-18**), based on the average ALC Subgrade of 3a (BMV), all affected land being in agricultural use.

Magnitude of change

20.9.24 Temporary loss of topsoil and some subsoil from agricultural fields will be needed at the landfall, at temporary construction compounds, within the onshore cable corridor (typically 40m wide) e.g., haul roads, at temporary construction accesses, at the onshore substation site and at the existing National Grid Bolney substation extension works. An area of 190.86ha (see maximum design parameters in **Table 20-15** and **Table 20-16**) is potentially affected (this total does not include the agricultural land which will be permanently lost to development as this is assessed separately), which is considered of very high magnitude of change. In practice, given the phased construction, smaller areas will be exposed at any one time and reinstatement of agricultural land can progress once lengths of cables are installed. Relevant embedded environmental measures (see **Table 20-17**) that will protect the agricultural land from degradation/damage that influence the magnitude of the change include:

- post construction work areas will be reinstated to pre-existing conditions in line with Defra guidance (Defra, 2009) and in accordance with the Materials Management Plan (MMP) for Rampion 2 (C-7);
- topsoil and subsoil storage, formation of stockpiles and other soil handling including reinstatement within the temporary working corridor will be in line with Defra guidance (Defra, 2009) (C-11);
- stockpiles will be stored for the shortest amount of time possible and seeded where present for longer than six months (C-19 and C-133);
- topsoil and subsoil handling and storage to be detailed in the **Outline SMP** (Document Reference: 7.4) (C-183), informed by a soil survey to confirm the soil type.
- an **Outline SMP** (Document Reference: 7.4) (C-183) has been developed, informed by the desk based review and soil baseline information gathered during the Soil and ALC survey. This will be further developed into a final SMP using additional Soil and ALC survey data to be collected during pre-

construction. The appointed construction contractor will ensure that the Final SMP is completed by soil scientists or experienced soil specialists during pre-construction, setting out measures to protect the agricultural land quality.

20.9.25 The magnitude of the change is **low** (**Table 20-19**).

Significance of residual effect

20.9.26 The sensitivity of the receptor is **high** (**Table 20-18**), and the magnitude of change, with the implementation of embedded environmental measures (**Table 20-17**), is **low** (**Table 20-19**), giving a residual effect of **Moderate adverse** significance (**Table 20-20**), with moderate being **Potentially Significant** in EIA terms. The moderate adverse scenario reflects the large area of agricultural land, including but not limited to BMV land, where soil disturbance will take place during construction. Based on the commitment to implement the final SMP and a MMP during the construction phase, and the intention that through adherence to these, the land will be restored to its original ALC grade, as defined by the soil resource surveys, the potential for loss of / damage to agricultural land as a result of temporary disturbance during construction will be minimised and the overall effect is likely to be **Not Significant** in EIA terms.

Permanent loss or sealing of soil / agricultural land due to permanent development

Sensitivity or value of receptor

Onshore substation, onshore substation permanent access and onshore substation drainage and landscaping

20.9.27 The areas of permanent development comprise the onshore substation (6.0ha) and onshore substation permanent access (0.242ha), the existing National Grid Bolney substation extension works (0.63ha), the joint bay locations (small above ground features at access covers, but otherwise buried infrastructure) (0.37ha), and the onshore substation drainage and landscaping (5.8ha). This equates to a maximum area of 13.042ha where permanent development will take place. Although soils can be reinstated above the joint bays, these are included in the total area of permanent loss to provide a worst case assessment. This is due to the requirement for access covers, some uncertainty over the final location and layout of the joint bays, and the requirement for a greater thickness of imported fill material placed above joint bays than is required for the cables, meaning that less of the natural soil can be reinstated, and soil functions may be negatively affected.

20.9.28 The land for all permanent development elements is assessed on the basis of it being Subgrade 3a (BMV) land. This based on ALC survey data and where this is not available on available desk based information and the conservative use of provisional ALC mapping, whereby all Grade 3 land is assumed to be Subgrade 3a (BMV) rather than Subgrade 3b (not BMV), as detailed in the baseline section, **paragraphs 20.6.34** to **20.6.38**.

20.9.29 At the areas of permanent development described in **paragraph 20.9.27**, the agricultural land and soil biomass function will be lost due to permanent development, including at the landscaping / drainage areas. However, within the

landscaping area, although the biomass function will be lost, soil will be retained and there may be a longer term improvement to soil health and other soil functions, such as carbon storage, over time, due to less disturbance of soils occurring than in an agricultural land use.

Magnitude of change

20.9.30 The onshore elements of the Proposed Development will involve the permanent loss of up to ~~16.21~~13.04ha of agricultural land. In regard to soil resources and soil functions there will be a loss of 7.24ha associated with the permanent development, however, ~~Based on the likelihood~~it is likely that all or most soils within the onshore substation landscaping and drainage area (5.8ha) will either stay in situ or be ~~reinstated~~ reused within the area. This is in accordance with~~, this equates to an area of up to 10.41ha where there is likely to be a permanent loss of soil.~~ commitment (C-7) to retain soils within the proposed DCO Order Limits. These losses are considered to be of **low** (**Table 20-19**) magnitude of change.

Significance of residual effect

20.9.31 Where possible, excavated soils will be reused within the proposed DCO Order Limits, in accordance with the Final SMP and the MMP. The potential for soils to retained and reused within the substation (e.g., for landscaping purposes) will be explored to minimise the quantity of waste soil generated. With the embedded measures and given that the assessment uses the maximum design scenario, the onshore elements of the Proposed Development will therefore involve a predicted **low** magnitude of change to a **high** sensitivity receptor. This will be a permanent residual effect of **Moderate adverse** significance, which is potentially significant **Table 20-20**). However, based on professional judgement and the embedded environmental measures in **Table 20-17** which will optimise the potential for soil health to be maintained and for soil to be reused within the Proposed Development or to be reused at a suitable receptor site, this is **Not Significant** in EIA terms.

The financial effects on productive farmland

Identification of receptors

20.9.32 In broad terms, the group of receptors covers those with exposure to effects related to the Proposed Development with financial consequences for farming and farming-based businesses, whether with land within the proposed DCO Order Limits or resulting from Proposed Development activities, such as reduced cropping or constraints on land uses.

20.9.33 The main effects arise from the temporary changes in land use and access required during the construction phase of the Proposed Development. Farmers and business owners will experience effects from agricultural land which is taken out of production. Receptors may experience effects over the short or long term, or permanently.

20.9.34 Receptors are grouped as:

- The Farming Economy; and
- Individual Farms.

20.9.35 In general, effects from disturbance of soils and on agriculture begin at the start of the construction phase and progressively reduce over the operation and maintenance phase as soils rehabilitate. The assessment considers overall effects, noting relevant sensitivities and any effects specific only to construction or operation and maintenance phases. Wider impacts on the local economy, for example on indirect jobs and economic value in supply chains, are considered out of the scope of the range of financial effects assessed here but are likely to be small in the context of the overall farming sector.

Sensitivity of receptors

20.9.36 The following reference levels have been used for assessing levels of sensitivity:

- Farming Economy – Aggregate production levels compared to existing market volumes; and
- Individual Farms – Farm Based Income (FBI) levels.

20.9.37 National agricultural production shows annual variation which provides a reference for other levels of change. With the quoted cause being a difficult winter and a spring drought, UK Government statistics indicates an annual change between 2019 and 2020 of a 4% reduction in area of arable crops (cereals and oilseeds), and of around 2-3% for cattle, pigs, with sheep categories including more variation (1.2-3.5%) (Defra, 2020).

20.9.38 Farm incomes (see **Table 20-21**) compare very approximately to a range for single salaries in professional & managerial jobs. Incomes are generated from a cost base with significant capital employed and appreciable cash flows for farming inputs such as labour, seeds and fertiliser. Additional activities on farms and smallholdings generate additional income in other markets, spreading risks but increasing investment requirements. The impacts of the Proposed Development may affect profiles for both income and investment.

Table 20-21 Farm Business Income (per farm)

Land Use	South East	England
All types	£51,200	£51,900
Cereals	£86,200	£71,700
Horticulture	£74,700	£52,900
Grazing Livestock	£23,400	£23,600

Source: Defra (2023), Farm Business Survey

Magnitude of change

20.9.39 The magnitude of change is assessed over a range from negligible to high qualitatively and where possible quantitatively using professional judgement based on comparison of impacts from the design of the Proposed Development with financial effects in the farming sector.

Mitigation

20.9.40 The following types of mitigation of financial impacts are identified:

- *Financial compensation to farmers for agricultural losses*, such as from reduced available acreage;
- *Financial compensation for business losses*;
- *Availability of substitute facilities and services in the locality* which can make up for those lost;
- *Mitigation of cash flow impacts* – Sensitivity to financial impacts is reduced by defraying costs for farmers and farm businesses through interim claims to reduce cash flow impacts; and
- *Other mitigation or compensation for interruption, disruption and disturbance* such as from reduced availability or access or resources (e.g., hay provided in the voluntary sector).

20.9.41 Mitigations identified above for the financial effects of the impacts of the Proposed Development are taken as available within the context of the assessments of the individual effects below. Compensation will be payable in line with the "Compensation Code" and the rules set out in Section 5 of the Land Compensation Act 1961 together with supporting legislation.

Significance of residual effect

20.9.42 Significance is assessed taking into account the sensitivity of the receptor, the magnitude of change and the availability of mitigation. Significance is assessed including expert opinion and comparison with the local context.

Farming Economy

20.9.43 Land taken out of agricultural production leads to financial losses from reduced cropping. The estimated effects of the Proposed Development on land in agricultural production are shown in **Table 20-22**. The total area removed on average from production is estimated to be 1,318.52 acres annually in each year of the construction phase based on the calculated area of title within the proposed DCO Order Limits and assuming a 'worst case' where all land within the Order Limits is utilised. Just under half the total agricultural land within the proposed DCO Order Limits is pasture (47%). Arable land makes up 45% (see **Table 20-22**). Including equestrian paddocks (6%) makes pasture the main overall land use (53%).

Table 20-22 Effects on agricultural production from the Proposed Development

Land Use	Area within proposed DCO Order Limits (Acres)
Arable	599.22 (45%)
Pasture	620.64 (47%)
Equestrian paddocks	76.19 (6%)
Woodland	22.47 (2%)
Total	*1,318.52 (100%)*

Source: Rampion Project GIS mapping

20.9.44 In the UK, agricultural commodity markets are effectively national, and so at national and even regional level, this loss of output is insignificant. The area of permanent pasture affected is equivalent to 0.05% of the England total or 0.48% of the total for the South East, The area affected in the arable sector is also low as a proportion, 0.03% nationally and 0.24% in the South East.

20.9.45 Furthermore, compensatory payments to individual farmers and farm businesses (see below) will offset reductions from production losses as well as contributing to sustaining the local economy.

20.9.46 Sensitivity of the farming economy is low due to large national and regional markets and the magnitude of change, following the implementation of mitigation (see **paragraphs 20.9.47** to **20.9.83**) is low. Therefore, there a **Negligible** residual effect which is **Not Significant** in EIA terms.

Individual Farms

20.9.47 The total area taken out of production is equivalent to the area of six average farms of 85ha each in the South East[8].

20.9.48 Although arable farming makes up less than half the total affected area (45%) it will account for a greater proportion of the overall financial losses as these types of farm are larger on average and have higher earnings. The loss in arable area would be equivalent to taking approximately 1.5 large arable farms in England out of production.

20.9.49 The similar loss in pasture area (47%) would nevertheless be equivalent to six of the smaller sized livestock farms (of 42 ha each). Although making up just 6% of the total affected area, equestrian paddocks would typically generate higher incomes than general grazing. A small amount of woodland makes up the remaining area (2%) with a variety of levels and types of use.

[8] Farm sizes are provided by Defra's Farm Business Survey (June 2022).

20.9.50 The Proposed Development will affect a number of farms with the greatest effects during construction particularly where open cut techniques are used. Farming activities related to cropland and pasture within the construction corridor will be interrupted although the Applicant will implement mitigation measures where practicable and residual impacts will be compensatable. Land/soil will be reinstated post construction and it is expected normal farming activities can resume after construction and during the operational phase.

20.9.51 The effects on individual farms will be varied. There are 160 titles that are affected by the proposed DCO Order Limits which vary in size from ten times the average farm size to a small fraction and may also be combined under common ownership.

20.9.52 For land uses within the proposed DCO Order Limits (see **Table 20-14**) the greatest effect on a single title is of 66 ha (75% of the average farm size in England), this area making up 20% of the title. This represents a significant loss even for a larger than usual farm.

20.9.53 At least 30 titles are expected to experience a change of 25% or more in affected area. In addition, the variety in titles and construction land uses, may lead to combined effects which diverge appreciably from this average. For example, incomes for a typically smaller livestock farm are only approximately one quarter that of an arable farm and so the same financial impacts may be experienced as proportionately greater.

20.9.54 Overall, the financial impacts on farming arising from temporary disruption to land use, the majority being for cropland and pasture, are over the short-term rather than the long-term and any residual impacts will be compensated in accordance with the Compensation Code.

20.9.55 Sensitivity of individual farms is **high** and the magnitude of change following the implementation of embedded environmental measures (see paragraphs 20.9.47 to 20.9.83) is **low.** Therefore, there is a **Negligible** residual effect which is **Not Significant** in EIA terms.

Summary

20.9.56 The overall financial effects of the Proposed Development on farms and farm businesses are summarised in **Table 20-23** below. The Proposed Development has no significant effects on the farming economy but likely significant effects arise at the level of individual farms and diversified farm-based businesses. These show a wide variety of circumstances and exposure to the impacts of the Proposed Development. There are a range of mitigations available in the local area due to the large markets and potential for substitutability. In addition, financial compensation provides a mechanism which mitigates individual effects so the residual significance overall is ‘Not significant’.

Table 20-23 Summary of financial effects on farming and farm-based businesses

Receptor (business / activity)	Overall magnitude of change	Overall sensitivity	Overall Rationale, including individual effects	Duration of effects (Temporary / permanent)	Notes on mitigation	Residual significance
Faming Economy	Low	Low	The farming economy is large compared to the effects of the Proposed Development	Temporary	Compensation for residual financial impacts.	Not Significant
Individual Farms	Low	High	An appreciable number of individual farms experience a high level of effects on land areas	Temporary	Compensation for residual financial impacts.	Not Significant

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20.10 Assessment of cumulative effects

Approach

20.10.1 A cumulative effects assessment (CEA) examines the combined impacts of Rampion 2 in combination with other developments on the same single receptor or resource and the contribution of Rampion 2 to those impacts. The overall method followed in identifying and assessing potential cumulative effects in relation to the onshore environment is set out in **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5) and **Appendix 5.3: Cumulative effects assessment detailed onshore search and screening criteria, Volume 4** of the ES (Document Reference: 6.4.5.3).

20.10.2 The onshore screening approach follows the Planning Inspectorate's Advice Note Nine (Planning Inspectorate, 2018) and Advice Note Seventeen (Planning Inspectorate, 2019) which is an accepted process for Nationally Significant Infrastructure Projects (NSIPs) and follows the four-stage approach set out in the guidance.

Cumulative effects assessment

20.10.3 Soils and agricultural land are effectively finite non-renewable resources, and in addition to Rampion 2, other planned developments, both regionally and nationally, will require temporary disturbance to soils, and permanent above ground development. This could result in removal of soil and / or soil sealing on land currently in 'soft' uses (meaning land uses such as agriculture, nature conservation areas or woodland, where soil resources are present and performing numerous soil functions including ecosystem services), or damage to soils caused by construction work, resulting in long term or permanent adverse effects on soil functions (such as contamination, compaction, and erosion).

20.10.4 Data published by Defra (Defra, 2022) for England, states that the Utilised Agricultural Area (UAA) in England decreased by 0.2 percent between 2020 and 2021 to 17.2 million hectares, covering 71 percent of land in the UK. Review of all available data shows the decreasing availability of agricultural land at a national level (including grassland, crop land, set-aside and bare / fallow land and uncropped land) over the period since 1984, with a decrease of 1.03 million hectares by 2020 (a decrease of 6.0 percent). According to the data from 1984 to 2021, the average annual loss of UAA is 0.2 percent. Details of change in land use are not recorded with this data however it is likely that a significant proportion of permanent loss of agricultural land / soil relates to 'hard development' (as opposed to 'soft' development such as conversion to forestry). This is supported by evidence of decreasing greenbelt coverage in England (Government Office for Science, 2021). The proportion of BMV land in the figures for UAA is not provided.

20.10.5 Defra provides regional statistics for agriculture in the southeast (Defra, 2023), which show that the total farmed area in the southeast was 1,134 thousand hectares in 2021 (which is 6.6 percent of the total UAA for England), however historical farmed areas in the southeast which would allow a comparison of farmed areas over time in the southeast are not provided. It is therefore assumed that on

average 0.2 percent of UAA is likely to be lost per year in the southeast, of which an unknown proportion is BMV. A report by the CPRE (formerly The Campaign to Protect Rural England) (CPRE, 2022) uses available data on BMV land (provisional ALC mapping for ALC Grades 1 and 2, and post 1988 mapping for Subgrade 3a) to estimate the total area of BMV land in the southeast as 233,851ha (or 233.9 thousand hectares). However, this excludes land mapped as provisional ALC Grade 3, which does not distinguish between Subgrade 3a (BMV) and Subgrade 3b (not BMV). Although this figure will include some Grade 1 and 2 land developed since the provisional mapping was produced, it is acknowledged by the CPRE that the true area of BMV land in the southeast is likely to be higher due to some Subgrade 3a land being unaccounted for. In the absence of data for the southeast showing the annual change in UAA, it is assumed that the annual loss of agricultural land is likely to be close to the average national rate of 0.2 percent.

20.10.6 Overall, the Proposed Development will result in the permanent loss of up to 13.024ha of agricultural land, all of which is assessed to be BMV ~~(5.8ha of this will have soil reinstated for non-agricultural use, meaning the area of natural in situ soil loss is 7.22ha)~~. The permanent agricultural land loss is equivalent to 0.001 percent of the 1,134 thousand hectares of total farmed area in the southeast in 2021 (Defra, 2023). However, as the construction phase of Rampion 2 lasts five years, on an annual basis the agricultural land loss due to the Proposed Development will be approximately 0.0002 percent of the total farmed area in the southeast in each of the five years. This is based on a worst-case assessment using the maximum assessment assumptions described in **Table 20-15**.

20.10.7 As noted above (**paragraph 20.10.6**), Rampion 2 has a five year construction period over which the temporary effects will occur, over a maximum area of 203.531ha, then there will be a period of aftercare (to be defined in the stage specific SMP(s)). The Proposed Development is linear in nature and will be constructed in phases, the temporary effects within the proposed DCO Order Limits will therefore not all occur simultaneously, and as detailed in **Table 20-17**, soil stockpiles will be present for the shortest practicable timeframe (commitment C-133) during construction, before soils are reinstated as work progresses along the cable corridor. With the implementation of embedded environmental measures (**Table 20-17**), there will be limited temporary effects on soils (and soil functions) and agricultural land quality (meaning the capacity of the land for growing biomass, crops etc.). Agricultural land temporarily affected can be restored to its original ALC grade with implementation of the embedded environmental measures. The effects were therefore assessed in **Section 20.9** to be **Moderate adverse** or **Minor adverse**, and in all instances **Not Significant** in EIA terms. As temporary effects on soil functions and agricultural land quality will be limited to land within the proposed DCO Order Limits and have been assessed to be **Not Significant** in EIA terms, no potential for significant cumulative effects or requirement for additional measures has been identified in regard to effects on soils (and soil functions) or agricultural land quality. Temporary and permanent financial effects on individual farm businesses are assessed in **Section 20.9** and consideration of cumulative effects on farm businesses is provided in **paragraphs 20.9.32** to **20.9.56**. Further consideration of the potential for cumulative effects due to the permanent effects on (or loss of) soil functions as a result of Rampion 2 and other developments (as identified in **Appendix 5.3: Cumulative effects**

assessment detailed onshore search and screening criteria, Volume 4 of the ES (Document Reference 6.4.5.3)) is given below.

20.10.8 Local plans are subject to the Environmental Assessment of Plans and Programmes Regulations 2004 (known as the Strategic Environmental Assessment Regulations) and, as stated in Schedule 2, 6., are required to give consideration to their "*likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects*", on issues including soil. This means that cumulative effects on soil resources are given some consideration at a regional level within the planning system. However, there is no legislation or policy framework for soil or (BMV/other) agricultural land which defines an unacceptable loss (due to soil sealing or disposal of soil resources as waste) of these resources either on a spatial (local, regional, or national scale) or temporal scale. Notably, there is no systematic data collection on a UK-wide basis to record the extent and quality of land sealed by development, or soil resources lost, against which the effects of proposed developments can be compared. Available regional agricultural statistics are focused on the land in agricultural use rather than the available resource and its condition.

20.10.9 Permanent loss of agricultural land (particularly BMV land) and soil will always have some cumulative effect, given that agricultural land and soils are effectively finite resources, however the area of land / soil permanently lost due to Rampion 2 is relatively small; (as described above in **paragraph 20.10.6**) up to 13.0~~2~~4ha, compared to 1,134 thousand ha of land recorded in 2021 as farmed in the South East.

20.10.10 At a regional level, potential cumulative effects could be identified with other large or linear developments onshore, such as the A27 Arundel bypass (ID 1), AQUIND Interconnector (ID 5), and Southampton to London Pipeline Project (ID 7), which require temporary disturbance to and permanent loss of soils and BMV agricultural land. Further details on these developments follows in **paragraphs 20.10.12** to **20.10.14** and in **Table 20-24**.

20.10.11 The A27 Arundel Bypass (ID 1) proposed development comprises a new dual carriageway bypass, approximately 8km in length (estimated based on the A27 Preliminary Environmental Information Report (A27 PEIR (Highways England, 2022)) to require at least 20.88ha of permanent development where soil may be removed / sealed), located primarily in agricultural land which is predominantly provisional Grade 3 (the A27 Arundel Bypass PEIR states that the land will be surveyed to confirm the ALC grade(s)), and may therefore include BMV land. The A27 Arundel Bypass PEIR (Highways England, 2022) concludes that the loss of soils due to proposed development will likely result in a permanent significant adverse effect where agricultural land is required for the permanent development, with potential temporary significant adverse effects where agricultural land is used for construction activity.

20.10.12 The AQUIND connector (ID 5) proposed development comprises a High Voltage Direct Current ('HVDC') marine and underground electric power transmission link between the south of England and Normandy in France, with an onshore cable located east of Portsmouth running northwards to west of Horndean. The onshore development includes permanent development areas and a cable route where

excavated soils can be reinstated over the cable and land use (mainly agricultural) restored. Land within the proposed AQUIND DCO Order Limits was subject to ALC Survey. A total of approximately 40ha of agricultural land would be required temporarily for construction and was classified as predominantly Subgrade 3b, with approximately 4.4ha of Subgrade 3a. The agricultural land required permanently extends to approximately 24.9ha on land classified as Subgrades 3a, 3b, and Grade 4. The magnitude of impact on agricultural land within Section 1 were assessed in the AQUIND Environmental Statement (AQUIND Limited, 2019) to be temporarily and permanently medium. With regard to BMV land in Subgrade 3a, the temporary and permanent effect on BMV land was assessed as minor to moderate adverse, and was not considered significant.

20.10.13 The London to Southampton Pipeline Project (ID 7) is a pipeline replacement project. The available documents relating to the application indicate limited permanent above ground development (pigging station and valve chambers) along a 90km pipeline route.

20.10.14 A short list of 'other developments' that may interact with the Rampion 2 ZoIs during their construction, operation or decommissioning is presented in **Appendix 5.4: Cumulative effects assessment shortlisted developments, Volume 4** of the ES (Document Reference: 6.4.5.4) and on **Figure 5.4.2** to **5.4.4, Volume 4** of the ES (Document Reference: 6.4.5.4). This list has been generated applying criteria set out in **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5) and **Appendix 5.3: Cumulative effects assessment detailed onshore search and screening criteria, Volume 4** of the ES (Document Reference: 6.4.5.3) and has been collated up to the finalisation of the ES through desk study, consultation, and engagement.

20.10.15 A tiered approach to the CEA has been set out in **Table 5-6** in **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5) and can be summarised as follows:

- Tier 1: developments under construction, permitted applications, and submitted applications;
- Tier 2: Other developments on the Planning Inspectorate Programme of Projects where a Scoping Report has been submitted; and
- Tier 3: Other developments on the Planning Inspectorate Programme of Projects where a Scoping Report has not been submitted, or where developments are identified in Development Plans or other plans as appropriate.

20.10.16 Information collated in **Appendix 5.4: Cumulative effects assessment shortlisted developments, Volume 4** of the ES (Document Reference: 6.4.5.4) has been used to identify other developments in the south east region with potential to result in cumulative effects in association with Rampion 2 due to regional loss of agricultural land and associated soils due to permanent 'hard' development. These are detailed in **Table 20-24** with proposed development areas (where available). The stated areas are likely to include some land where soils are excavated and can be reinstated, areas of 'soft' development (such as landscaping), and areas where soil / agricultural land will not be disturbed, however for the purposes of the CEA the areas are presented as per the available

documentation. This allows for loss of soil / degradation of agricultural land quality due to temporary works undertaken for the developments, in addition to permanent development where soil is removed / sealed.

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Table 20-24 Developments considered as part of the soils and agriculture CEA

ID[9]	Development type	Development name	Application reference	Status	Confidence in assessment	Tier[10]	Area (ha) of potential permanent agricultural land / soil loss / sealing
1	Highways A new dual carriageway bypass	A27 Arundel Bypass	TR010045	Pre-application: Scoping Opinion published 14/04/2010	Medium	2	20.88
5	Utilities infrastructure (energy) HVDC cable between England and France	AQUIND connector	EN020022	DCO granted (following appeal) 09/03/2023	High	1	64.90
7	Utilities infrastructure (other)	London to Southampton	EN070005	DCO granted 07/10/2020	High	1	0.12 (~97km of buried pipeline is assumed to have

[9] ID reference as stated in Table 2-1 in **Appendix 5.4: Cumulative effects assessment shortlisted developments, Volume 4** of the ES (Document Reference: 6.4.5.4) and on **Figure 5.4.2** to **5.4.4, Volume 4** of the ES (Document Reference: 6.4.5.4).
[10] **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5) sets out the full definitions of the tiers.

ID[9]	Development type	Development name	Application reference	Status	Confidence in assessment	Tier[10]	Area (ha) of potential permanent agricultural land / soil loss / sealing
	Pipeline replacement project	Pipeline Project					soils fully reinstated over it)
13 / 14 / 63	Mixed Use 300 dwellings and ancillary infrastructure	Land at Climping Arun Local Plan (2018) Reference Site SD10 Policy H SP2c	CM/48/21/RES / CM/1/17/OUT / Local Plan site (SD10)	Application pending a decision: submitted 31/08/2021 / Application approved (after appeal) 28/09/2018 / Allocated in Local Plan	High	1	26.71
19	Residential Development of 68 dwellings and associated infrastructure	Land South of The Littlehampton Academy	LU/55/15/OUT	Application approved (after appeal) 28/09/2016	High	1	2.42

ID[9]	Development type	Development name	Application reference	Status	Confidence in assessment	Tier[10]	Area (ha) of potential permanent agricultural land / soil loss / sealing
23	Residential Development of 108 dwellings and associated infrastructure	Land off Burndell Road Yapton	Y/19/16/OUT	Application approved 13/10/2017	High	1	3.85
33	Residential development Construction of 114 dwellings and associated works	Land North of Toddington Lane	LU/347/14/RES	Application approved 01/09/2015	High	1	3.71
37	Residential Development of 90 dwellings and associated infrastructure	Land at Ford Road Arundel	AB/135/20/OUT	Application approved 26/11/2021	High	1	2.74

ID[9]	Development type	Development name	Application reference	Status	Confidence in assessment	Tier[10]	Area (ha) of potential permanent agricultural land / soil loss / sealing
45	Residential Development of 62 dwellings and associated infrastructure	Land North of Downsview Avenue	DC/19/2015	Application approved 15/05/2020	High	1	2.09
47	Residential Construction of 81 dwellings and associated infrastructure	Land North of The Rosary	DC/20/1697	Application refused: decision 19/02/2021 - appeal in progress (awaiting decision)	High	1	4.63
54	Energy generation (solar) Solarvoltaic panels and associated infrastructure	Land at Coombe Farm	DM/15/0644	Application approved 17/02/2017	High	1	43.57

ID[9]	Development type	Development name	Application reference	Status	Confidence in assessment	Tier[10]	Area (ha) of potential permanent agricultural land / soil loss / sealing
64	Mixed use Around 7,000 dwellings, early years/new primary and secondary schools. Healthcare and other community facilities.	Local Plan site	Mayfield Proposal (SA414)	Proposed Local Plan site	Low	3	310.00

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20.10.17 The cumulative Project Design Envelope is described in **Table 20-25**.

Table 20-25 Cumulative Project Design Envelope for soils and agriculture

Project phase and activity/impact	Scenario	Justification
Cumulative loss of agricultural land and soil	Permanent development of above ground structures on land currently in agricultural use and where in situ natural soils are present, resulting in loss of agricultural land and loss of soils and associated soil functions	The Proposed Development has measures in place to ensure that the effects of temporary construction work on soils and agricultural land will be minimised, therefore the main activity with potential to result in cumulative effects on soils and agricultural land is permanent development of agricultural land for 'hard' development or landscaping and drainage.

20.10.18 The combined areas of the developments listed in **Table 20-24** is 485.61 ha. This amounts to 0.043 percent of the total farmed area of 1,134 thousand hectares in the southeast (Defra, 2023), and in combination with Rampion 2, the total annual area of agricultural land lost could be up to 0.044 percent. This assumes that all other developments are completed in one year (i.e., they contribute to the annual loss of agricultural land (of any grade) and soil). This figure is well below the expected 0.2 percent average loss nationally. It is therefore concluded that, as in combination Rampion 2 and the other developments in the region result in a permanent percentage loss of agricultural land and soil well below 0.2 percent, that **no significant** cumulative effects are likely.

20.11 Transboundary effects

20.11.1 Transboundary effects arise when impacts from a development within one European Economic Area (EEA) states affects the environment of another EEA state(s). A screening of transboundary effects has been carried out and is presented in Appendix B of the Scoping Report (RED, 2020).

20.11.2 As described in **Paragraph 20.4.3**, effects on soils and agricultural land will generally be limited to changes or activities taking place on the resource itself, and therefore no transboundary effects are likely, and no further assessment has been undertaken.

20.12 Inter-related effects

20.12.1 The inter-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and maintenance and decommissioning phases of Rampion 2 on the same receptor, or group of receptors.

20.12.2 Inter-related effects could potentially arise in one of two ways. The first type of inter-related effect is a Proposed Development lifetime effect, where multiple phases of the Proposed Development interact to create a potentially more significant effect on a receptor than in one phase alone. The phases for Rampion 2 are construction, operation and maintenance, and decommissioning. All Proposed Development lifetime effects are assessed in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference 6.2.30).

20.12.3 The second type of inter-related effect is receptor-led effects. Receptor-led effects are where effects from different environmental aspects combine spatially and temporally on a receptor. These effects may be short-term, temporary, transient, or longer-term. Full results of the receptor-led effects assessment can be found in **Chapter 30: Inter-related effects**. of the ES (Document Reference 6.2.30).

20.13 Summary of residual effects

20.13.1 **Table 20-26** presents a summary of the assessment of significant impacts, any relevant embedded environmental measures and residual effects on soils and agriculture receptors.

Table 20-26 Summary of preliminary assessment of residual effects

Activity and impact	Magnitude of change	Receptor and sensitivity or value	Embedded environmental measures	Assessment of residual effect (significance)
Construction phase				
Changes to soil structure due to inappropriate storage and/or handling of soils or due to the use of heavy machinery which causes compaction	Low	High	C-6, C-11, C-12, C-13, C-113, C-132, C-183	**Moderate Adverse (Not Significant)**
Soil erosion due to inappropriate storage and/or construction activities	Low	High	C-7, C-11, C-12, C-132, C-133, C-183	**Moderate Adverse (Not Significant)**

Activity and impact	Magnitude of change	Receptor and sensitivity or value	Embedded environmental measures	Assessment of residual effect (significance)
Temporary loss of topsoil due to removal associated with construction activities	Low	High	C-7, C-11, C-12, C-13, C-183	**Moderate Adverse (Not Significant)**
Damage to (agricultural) land drainage systems due to construction activities, including physical damage to clay / other drains and changes to soil structure affecting land drainage	Very low to Low	High	C-28	**Minor Adverse (Not Significant)**
Temporary loss of, or damage to, agricultural land – potential for ALC grade to be lowered	Very low to Low	High	C-7, C-11, C-19, C-133, C-183	**Minor Adverse (Not Significant)**
Permanent loss of soil/agricultural land due to permanent development – construction of onshore infrastructure (substation, substation permanent access, and joint bays) due to hard development – soil sealing or permanent removal	Very low	High	C-183	**Minor Adverse (Not Significant)**
Farming economy	Low	Low	N/A	**Not significant**
Individual farms	Low	High	N/A	**Not significant**

20.14 Glossary of terms and abbreviations

Table 20-27 Glossary of terms and abbreviations – soils and agriculture

Term (acronym)	Definition
Agricultural Land Classification (ALC)	Agricultural Land Classification provides a means of assessing the quality of farmland. Its assessment is based on physical limitations of the land, such as climate, site characteristics (e.g., gradient) and soil. The assessment gives an indication of the versatility and expected yield of the land. The system classifies agricultural land in five grades. The 'best and most versatile' agricultural land is classified as 1, 2 and 3a. The Agricultural Land Classification was developed by the former Ministry of Agriculture, Fisheries and Food in 1988 and revised in 1996.
Baseline	Refers to existing conditions as represented by latest available survey and other data which is used as a benchmark for making comparisons to assess the impact of development.
Baseline conditions	The environment as it appears (or would appear) immediately prior to the implementation of the Proposed Development together with any known or foreseeable future changes that will take place before completion of the Proposed Development.
BGS	British Geological Survey
Best and Most Versatile (BMV)	Land as classified by the Ministry of Agriculture, Fisheries and Food (MAFF) (1988) that is considered to be the highest quality agricultural land classification.
Department for Business, Energy and Industrial Strategy (BEIS)	The Government department responsible for business; industrial strategy; science; research and innovation; energy and clean growth; and climate change.
Code of Construction Practice (CoCP)	The code sets out the standards and procedures to which developers and contractors must adhere to when undertaking construction of major projects. This will assist with managing the environmental impacts and will identify the main responsibilities and requirements of developers and contractors in constructing their projects.
Construction effects	Used to describe both temporary effects that arise during the construction phases as well as permanent existence effects that arise from the physical existence of development (for example new buildings).

Term (acronym)	Definition
Cumulative effects	Additional changes caused by the Proposed Development in conjunction with other similar developments or as a combined effect of a set of developments.
Cumulative Effects Assessment (CEA)	Assessment of impacts as a result of the incremental changes caused by other past, present and reasonably foreseeable human activities and natural processes together with the Proposed Development.
DCO Application	An application for consent under the Planning Act 2008 to undertake a Nationally Significant Infrastructure Project made to the Planning Inspectorate who will consider the application and make a recommendation to the Secretary of State, who will decide on whether development consent should be granted for the Proposed Development.
Decommissioning	The period during which a development and its associated processes are removed from active operation.
Department of Environment, Food and Rural Affairs (Defra)	The lead UK Government Department for overall environmental policy.
Development Consent Order (DCO)	This is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008.
DoWCoP	Definition of Waste Code of Practice
EEA	European Economic Area
Embedded environmental measures	Equate to 'primary environmental measures' as defined by Institute of Environmental Management and Assessment (2016). They are measures to avoid or reduce environmental effects that are directly incorporated into the preferred masterplan for the Proposed Development.
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').
Environmental measures	Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible, remedy identified effects.

Term (acronym)	Definition
Environmental Statement (ES)	The written output presenting the full findings of the Environmental Impact Assessment.
EU	European Union
Statutory Consultation	Statutory consultation refers to Statutory Consultation that is required under Section 42 and Section 47 of the Planning Act 2008 with the relevant consultation bodies and the public on the preliminary environmental information.
Future baseline	Refers to the situation in future years without the Proposed Development.
Horizontal Directional Drill (HDD)	A trenchless crossing engineering technique using a drill steered underground without the requirement for open trenches. This technique is often employed when crossing environmentally sensitive areas, major water courses and highways. This method is able to carry out the underground installation of pipes and cables with minimal surface disruption
Impact	The changes resulting from an action.
Indirect effects	Effects that result indirectly from the Proposed Development as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in time from the source of the effects.
JB	Joint bay
Likely Significant Effects	It is a requirement of Environmental Impact Assessment Regulations to determine the likely significant effects of the Proposed Development on the environment which should relate to the level of an effect and the type of effect.
Link Boxes (LBs)	Underground chambers or above ground cabinets adjacent to the cable trench containing low voltage electrical earthing links.
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MAFF	(former) Ministry of Agriculture, Fisheries and Farming

Term (acronym)	Definition
MAGIC	Multi-Agency Geographic Information for the Countryside
Magnitude (of change)	A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short term or long term in duration'. Also known as the 'degree' or 'nature' of change.
MMP	Materials Management Plan
Nationally Significant Infrastructure Project (NSIP)	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by DCO under the Planning Act 2008. These include proposals for renewable energy projects with an installed capacity greater than 100MW.
Non-statutory consultation	Non-statutory consultation refers to the voluntary consultation that RED undertake in addition to the statutory consultation requirements.
NPS	National Policy Statement
Planning Inspectorate	The Planning Inspectorate is the government agency supervising the planning process for NSIPs under the Planning Act 2008. The purpose of the Planning Inspectorate is to provide expertise on planning appeals, national infrastructure planning applications, examinations of local plans and other planning-related and specialist casework in England and Wales.
Preliminary Environmental Information Report (PEIR)	The written output of the Preliminary Environmental Impact Assessment undertaken for the Proposed Development. It is developed to support formal consultation and presents the preliminary findings of the assessment to allow an informed view to be developed of the Proposed Development, the assessment approach that has been undertaken, and the preliminary conclusions on the likely significant effects of the Proposed Development and environmental measures proposed.
Proposed Development	The development that is subject to the application for development consent, as described in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4).
Proposed DCO Order Limits	The proposed DCO Order Limits combines the search areas for the offshore and onshore infrastructure associated with the Proposed Development. It is defined

Term (acronym)	Definition
	as the area within which the Proposed Development and associated infrastructure will be located, including the temporary and permanent construction and operational work areas.
Receptor	These are as defined in Regulation 5(2) of The Infrastructure Planning 'Environmental Impact Assessment' Regulations 2017 and include population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage and landscape that may be at risk from direct and indirect exposure to pollutants as a result of the Proposed Development.
RED	Rampion Extension Development Limited
SAC	Special Area of Conservation
Scoping Opinion	A Scoping Opinion is adopted by the Secretary of State for a Proposed Development.
Scoping Report	A report that presents the findings of an initial stage in the Environmental Impact Assessment process.
Secretary of State	The SoS of Department for Energy Security and Net Zero oversees the planning system and decision making with regards to development consent for offshore windfarms. This agent works within the relevant government department relating to the application.
Sensitivity	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value associated to that receptor.
Significance	A measure of the importance of the environmental effect, defined by criteria specific to the environmental aspect.
Significant effects	It is a requirement of the Infrastructure Planning 'EIA Regulations' 2017 to determine the likely significant effects of the development on the environment which should relate to the level of an effect and the type of effect. Where possible significant effects should be mitigated.
SWMP	Site Waste Management Plan
SMP	Soil Management Plan
Soil Resource Plan	A plan to be produced during pre construction in accordance with Defra (2009a) mapping the areas and

Term (acronym)	Definition
	type of topsoil and subsoil to be stripped or left in-situ, areas of soil to be protected from construction activities, the locations of haul routes, and stockpile locations, including the type and management of each soil stockpile, schedules of volumes for each material, and the expected after-use of the soil. To avoid duplication, the Soil Resource Plan can cross-reference the MMP or form a sub-section of the MMP, and will cross-reference the Final SMP and Site Waste Management Plan.
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
Temporal scope	The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur and are typically defined as either being temporary or permanent.
Temporary or permanent effects	Effects may be considered as temporary or permanent. In the case of wind energy development the application is for a 30 year period after which the assessment assumes that decommissioning will occur and that the site will be restored. For these reasons the development is referred to as long term and reversible.
Unexploded Ordnance (UXO)	Unexploded ordnance are explosive weapons (bombs, shells, grenades, land mines, naval mines, etc.) that did not explode when they were employed and still pose a risk of detonation, potentially many decades after they were used or discarded.
Zone of Influence (ZOI)	The area surrounding the Proposed Development which could result in likely significant effects.

20.15 References

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