The Great Grid Upgrade

Sea Link

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Volume 6: Environmental Statement

Document : 6.2.3.6
Part 3 Kent
Chapter 6
Agricultural and Soils

Planning Inspectorate Reference: EN020026

Version: B
October 2025

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)

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Version History

Date	Issue	Status	Description / Changes
March 2025	A	Final	For DCO submission
October 2025	B	Final	Update following Rule 6 Errata List

6. Agriculture and Soils

6.1 Introduction

6.1.1 This chapter of the Environmental Statement (ES) presents the assessment of the likely significant agriculture and soils effects that could result from the Proposed Project (as described in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**).

6.1.2 The Order Limits, which illustrate the boundary of the Proposed Project, are illustrated on **Application Document 2.2.1 Overall Location Plan** and the Kent Onshore Scheme Boundary is illustrated on **Application Document 2.2.2 Kent Location Plan**.

6.1.3 This chapter should be read in conjunction with the following ES chapters:

- **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**;
- **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**;
- **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**;
- **Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation**;
- **Application Document 6.2.3.2 Part 3 Kent Chapter 2 Ecology and Biodiversity**;
- **Application Document 6.2.3.4 Part 3 Kent Chapter 4 Water Environment**;
- **Application Document 6.2.3.5 Part 3 Kent Chapter 5 Geology and Hydrogeology**; and
- **Application Document 6.2.3.11 Part 3 Kent Chapter 11 Health and Wellbeing**.

6.1.4 This chapter is supported by the following figures:

- **Application Document 6.4.3.6 Agriculture and Soils**.

6.1.5 This chapter is supported by the following appendices:

- **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification (ALC) Report – Kent**.

6.1.6 This chapter is supported by the following application documents:

Application Document 7.5.3 Outline Onshore Construction Environmental Management Plan (CEMP);

- **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice**;
- **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**; and

- **Application Document 7.5.10.2 Outline Soil Management Plan – Kent**.

6.2 Regulatory and Planning Context

6.2.1 This section sets out the legislation and planning policy that is relevant to the agriculture and soil effects assessment. A full review of compliance with relevant national and local planning policy is provided within the **Application Document 7.1 Planning Statement** submitted as part of the application for Development Consent.

6.2.2 Policy generally seeks to minimise agriculture and soils effects from development and to avoid significant adverse effects. This applies particularly to the protection of best and most versatile (BMV) land, defined as comprising Grades 1, 2 and 3a agricultural land, and soil ecosystem services.

Legislation

6.2.3 Although the Proposed Project will be tested in line with National Policy, as examined below, the assessment has also been undertaken in accordance with, and in reference to, the following national legislation and policy:

- The Agricultural Land (Removal of Surface Soil) Act 1953; and
- Environmental Improvement Plan (Department for Environment, Food and Rural Affairs, 2023).

National Policy

National Policy Statements

6.2.4 National Policy Statements (NPS) set out the primary policy tests against which the application for a Development Consent Order (DCO) for the Proposed Project will be considered. Table 6.1 and Table 6.2 below provides details of the elements of NPS for Energy (EN-1) (Department of Energy and Net Zero, 2023) and NPS for Electricity Networks Infrastructure (EN-5) (Department of Energy and Net Zero, 2023) that are relevant to this chapter. NPS EN-3 Renewable Energy Infrastructure has relevance to the Proposed Project, but only in respect of the offshore elements. As such it has no relevance to the assessment presented in this chapter.

Table 6.1 NPS EN-1 requirements relevant to agriculture and soils

NPS EN-1 section	Where this is covered in the ES
5.11.12 *"Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5)."*	The extent of BMV land (based on predictive mapping) within the Order Limits is reported in Table 6.12. An assessment of the likely impacts on BMV land is presented in Section 6.9, and mitigation measures have been set out to minimise the effects. The overall extent of land required has been minimised through

NPS EN-1 section	Where this is covered in the ES
	the evolution of the design of the Proposed Project. The presence of Provisionally graded BMV formed part of the initial siting assessment as detailed in **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**. Provisional BMV land waa consideration in the converter station siting; and whilst the chosen site option was found to have higher value Provisional ALC graded land, the justification of other environmental and technical constraints are also noted as part of the final siting decision (**Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered)**.
FF5.11.13 *"Applicants should also identify any effects and seek to minimise impacts on soil health and protect and improve soil quality taking into account any mitigation measures proposed."*	The mitigation measures include the requirement for a Soil Management Plan (SMP) in line with published guidance. An Outline SMP (oSMP) (**Application Document 7.5.10.2 Outline SMP - Kent**) has been included in the application for development consent alongside this ES. An assessment of residual impacts and likely effects on soils and their functions, taking account of proposed mitigation measures, is set out in Section 6.9.
5.11.14 *"Applicants are encouraged to develop and implement a Soil Management Plan which could help minimise potential land contamination. The sustainable reuse of soils needs to be carefully considered in line with good practice guidance where large quantities of soils are surplus to requirements or are affected by contamination."*	The mitigation measures include the requirement for a SMP in line with published guidance. An Outline SMP has been included in the application for development consent alongside this ES. The oSMP (**Application Document 7.5.10.2 Outline SMP – Kent**) will be updated pre-construction, in line with all project requirements, such as habitat designs detailed in the (outline) Landscape and Ecological Mitigation Plans ((o)LEMP) (**Application Document 7.5.7.2 Outline Landscape and Ecological management Plan –– Kent**), to ensure adequate volumes of material for restoration, as well as minimising any surplus soil materials. The final SMP will set out details of disposal routes should there be a surplus of soil materials. Land required temporarily is committed to being returned to its pre-construction condition as referenced in Code of Construction Practice item GG07 (**Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice)**.

NPS EN-1 section	Where this is covered in the ES
5.11.34 *"The Secretary of State should ensure that applicants do not site their scheme on the best and most versatile agricultural land without justification. Where schemes are to be sited on best and most versatile agricultural land the Secretary of State should take into account the economic and other benefits of that land. Where development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality."*	The extent of BMV land (based on predictive mapping) within the Order Limits is reported in Table 6.13. An assessment of the likely impacts on BMV land is presented in Section 6.9, and mitigation measures have been set out to minimise the effects. The overall extent of land required has been minimised through the evolution of the design of the Proposed Project. The presence of Provisionally graded BMV land formed part of the initial siting assessment as detailed in **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**. Whilst Provisional BMV was a consideration in the converter station siting, other environmental and technical constraints are also noted as part of the final siting decision (**Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered)**.

Table 6.2 NPS EN-5 requirements relevant to agriculture and soils

NPS EN-5 section	Where this is covered in the ES
2.9.25 *"In such cases the Secretary of State should only grant development consent for underground or subsea sections of a proposed line over an overhead alternative if they are satisfied that the benefits accruing from the former proposal clearly outweigh any extra economic, social, or environmental impacts that it presents, the mitigation hierarchy has been followed, and that any technical obstacles associated with it are surmountable. In this context it should consider:* • *the potentially very disruptive effects of undergrounding on local communities, habitats, archaeological and heritage assets, marine environments, soil (including peat soils), hydrology, geology, and, for a substantial time after construction, landscape and visual amenity. (Undergrounding an overhead line will mean digging a trench along the length of the route, and so such works will often be disruptive – albeit temporarily – to the*	The Proposed Project incorporates undergrounding for the majority of the route. The potential effects of undergrounding the cables, or opportunities for trenchless techniques to be utilised, have been assessed as part of this Environmental Statement, and the considerations of options such as trenchless options and overhead lines are assessed in **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**. A consideration of location in combination with an assessment of the required infrastructure and construction needs were all accounted for in weighing-up alternative options (**Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered)**. An assessment of the likely impacts is presented in Section 6.9 accounting for mitigation measures to minimise the effects. Embedded mitigation measures are detailed in Section 6.8**,** these measures include a

NPS EN-5 section	Where this is covered in the ES
receptors listed above than would an overhead line of equivalent rating);[…]	commitment to returning land used temporarily to its original ALC grade.
• the applicant's commitment, as set out in their ES, to mitigate the potential detrimental effects of undergrounding works on any relevant agricultural land and soils (including peat soils), particularly regarding Best and Most Versatile land, including development and implementation of a Soil Resources and Management Plan. Such a commitment must guarantee appropriate handling of soil, backfilling, and return of the land to the baseline Agricultural Land Classification (ALC), thus ensuring no loss or degradation of agricultural land. Such a commitment should be based on soil and ALC surveys in line with the 1988 ALC criteria and due consideration of the Defra Construction Code of Practice for Sustainable Use of Soils on Construction Sites."	Land required temporarily is committed to being returned to its pre-construction condition as referenced in Code of Construction Practice item GG07 (**Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice)**.
2.9.58 "There is little evidence that exposure of crops, farm animals or natural ecosystems to transmission line EMFs has any agriculturally significant consequences."	An Electromagnetic Field (EMF) compliance report is being submitted with the application (**Application Document 6.5 Electric and Magnetic Field Compliance Report**). However, as set out in the Scoping Report Application Document 6.14 Environmental Scoping Report 2022 and agreed by the Planning Inspectorate, the potential effects of EMFs on land use during operation has been scoped out of the assessment. The Proposed Project includes design considerations such as providing clearance of the conductors if any sensitive land uses (such as horse grazing and riding schools) are present.

National Planning Policy Framework

6.2.5 The National Planning Policy Framework (NPPF) as revised in December 2024 (Ministry of Housing, Communities, and Local Government, 2024)sets out national planning policies that reflect priorities of the Government for operation of the planning system and the economic, social, and environmental aspects of the development and use of land. The NPPF has a strong emphasis on sustainable development, with a presumption in favour of such development. The NPPF has the potential to be considered important and relevant to the Secretary of State's (SoS) consideration of the Proposed Project.

6.2.6 Table 6.3 below provides details of the elements of the NPPF that are relevant to this chapter, and how and where they are covered in the ES.

Table 6.3 NPPF requirements relevant to agriculture and soils

NPPF section	Where this is covered in the ES
Paragraph 187 *"Planning policies and decisions should contribute to and enhance the natural and local environment by: (a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); (b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of best and most versatile agricultural land, and of trees and woodland […]".*	The overall extent of land required by the Proposed Project has been minimised through the evolution of the design. The extent of BMV land within the Order Limits is reported in Table 6.13. An assessment of likely impacts on BMV land is presented in Section 6.9 and has been assessed in line with the proposed mitigation measures (aligned to published guidance and set out to minimise the effects).
Paragraph 188 *"Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework[65]; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries."*	Whilst this policy primarily concerns local plan making it is directly linked to Footnote 65 which specifically deals with agricultural land quality, as such we have retained the reference. The overall extent of land required by the Proposed Project has been minimised through the evolution of the design. The extent of BMV land within the Order Limits is reported in Table 6.13. An assessment of likely impacts on BMV land is presented in Section 6.9 and has been assessed in line with the proposed mitigation measures (aligned to published guidance and set out to minimise the effects).
Paragraph 188 Footnote 65 *"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. The availability of agricultural land used for food production should be considered, alongside the other policies in this Framework, when deciding what sites are most appropriate for development.".*	The overall extent of land required by the Proposed Project has been minimised through the evolution of the design. The presence of Provisionally graded BMV formed part of the initial siting assessment as detailed in **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**. Whilst Provisional BMV land was a consideration in the converter station siting, other environmental and technical constraints are also noted as part of the final siting decision (**Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered)**. The extent of BMV land within the Order Limits is reported in Table 6.13. An assessment of likely impacts on BMV land is presented in Section 6.9 and has been

NPPF section	Where this is covered in the ES
	assessed in line with the proposed mitigation measures (aligned to published guidance and set out to minimise the effects).

National Planning Practice Guidance

6.2.7 National Planning Practice Guidance on the Natural Environment (Ministry of Housing, Communities and Local Government; Department for Leveling Up, Housing and Communities, 2025) provides information on the ALC system and on how planning can safeguard soils with specific reference to protecting soils in construction projects, including where soil resources are being directly affected.

Local Planning Policy

6.2.8 The Kent Onshore Scheme (refer to **Application Document 2.2.3 Kent Onshore Scheme Boundary**) lies within the jurisdiction of Kent County Council at a county level and Thanet District Council (TDC) and Dover District Council (DDC) at a district level.

6.2.9 Local planning policy which is relevant to a study of agriculture and soils and has informed the assessment of preliminary effects in this chapter are as follows:

- Thanet Local Plan (Thanet District Council, 2020); and
- Dover District Local Plan to 2040 (Dover District Council, 2024).

Local Plans

6.2.10 The majority of the Kent Onshore Scheme lies within the jurisdiction of TDC. Local planning policy for Thanet District Council consists of the Thanet Local Plan (adopted July 2020) (Thanet District Council, 2020). Thanet Local Plan policies which are relevant to agriculture and soils assessment matters and have informed the agriculture and soils assessment are detailed in Table 6.4.

Table 6.4 Local planning policies relevant to agriculture and soils – Thanet Local Plan

Thanet Local Plan - Policy	Where this is covered in the ES
SP30: Biodiversity and Geodiversity Assets Development proposals will, where appropriate, be required to make a positive contribution to the conservation, enhancement and management of biodiversity and geodiversity assets resulting in a net gain for biodiversity assets through the following measures: […] 5. protect and enhance valued soils,	The mitigation measures include the submission of an Outline SMP (**Application Document 7.5.10.2 Outline Soil Management Plan – Kent**) in line with published guidance which will support the appropriate reinstatement of soils or their re-use where they are affected by permanent infrastructure.
E16: Best and Most Versatile Agricultural Land	The overall extent of land required by the Proposed Project has been minimised through the evolution of the design. The

Thanet Local Plan - Policy	Where this is covered in the ES
Except on sites allocated for development by virtue of other policies in this Plan, planning permission will not be granted for significant development which would result in the irreversible loss of best and most versatile agricultural land unless it can be clearly demonstrated that: 1) the benefits of the proposed development outweigh the harm resulting from the loss of agricultural land, 2) there are no otherwise suitable sites of poorer agricultural quality that can accommodate the development, and 3) the development will not result in the remainder of the agricultural holding becoming not viable or lead to likely accumulated and significant losses of high quality agricultural land.	presence of Provisionally graded BMV land formed part of the initial siting assessment as detailed in **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**. Whilst Provisional BMV land was a consideration in the converter station siting, other environmental and technical constraints are also noted as part of the final siting decision (**Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered)**. The extent of BMV land within the Order Limits is reported in Table 6.13 of this chapter. An assessment of the likely impacts on BMV land is presented in Section 6.9, accounting for mitigation measures aligned to published guidance (set out to minimise the effects). The mitigation measures include the submission of an outline Soil Management Plan in line with published guidance.

6.2.11 Parts of the Kent Onshore Scheme lie within the jurisdiction of Dover District Council (DCC). Local Plan policies which are relevant to agriculture and soils matters are identified in Table 6.5.

Table 6.5 Local Planning Policies relevant to agriculture and soils – Dover District Local Plan

Dover District Local Plan - Policy	Where this is covered in the ES
DM15: Protection of the countryside *Development which would result in the loss of, or adversely affect the character or appearance, of the countryside will only be permitted if it is:* *i. In accordance with allocations made in Development Plan Documents, or* *ii. justified by the needs of agriculture; or* *iii. justified by a need to sustain the rural economy or a rural community;* *iv. it cannot be accommodated elsewhere; and* *v. it does not result in the loss of ecological habitats.*	The overall extent of land required by the Proposed Project has been minimised through the evolution of the design to minimise potential changes to the character and appearance of the countryside. The presence of Provisionally graded BMV formed part of the initial siting assessment as detailed in **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**. Whilst Provisional BMV land was a consideration in the converter station siting, other environmental and technical constraints are also noted as part of the final siting decision (**Application Document 6.2.1.3 Part 1**

Dover District Local Plan - Policy	Where this is covered in the ES
Provided that measures are incorporated to reduce, as far as practicable, any harmful effects on countryside character.	**Introduction Chapter 3 Main Alternatives Considered).** The extent of BMV land within the Order Limits is reported in Table 6.13 of this chapter. An assessment of the likely impacts on BMV land is presented in Section 6.9, accounting for mitigation measures aligned to published guidance (set out to minimise the effects). The mitigation measures include the submission of an outline Soil Management Plan (**Application Document 7.5.10.2 Outline Soil Management Plan – Kent**) in line with published guidance.

6.3 Scoping Opinion and Consultation

Scoping

6.3.1 A Scoping Report for the Proposed Project was issued to the Planning Inspectorate (PINS) on 24 October 2022 (**Application Document 6.14 Environmental Scoping Report 2022**) and a Scoping Opinion was received from the SoS on 1 December 2022(**Application Document 6.15 Scoping Report 2022**). Table 6.6 sets out the comments raised in the Scoping Opinion and how these have been addressed in this ES. The Scoping Opinion takes account of responses from prescribed consultees as appropriate. **Application Document 6.3.1.6.A Appendix 1.6.A Responses to Scoping Opinion** provides responses to the comments made by the prescribed consultees at the scoping stage and how each comment has been considered.

Table 6.6 Comments raised in the Scoping Opinion

ID	Inspectorate's comments	Response
4.6.1	*Temporary removal of land from agricultural production (construction, maintenance and decommissioning)* The Applicant proposes to scope out the temporary removal of land from agricultural production on the basis that all land required temporarily would be reinstated, the footprint of the permanent infrastructure is limited and impacts on agricultural operations will be dealt with through compensation agreements which lie outside of the ES process. The Inspectorate considers that effects of temporary removal may be scoped out from further assessment, however the ES should	An estimate of the extent of BMV land affected by temporary works is included in this chapter in Table 6.14. Details of the duration of works are set out in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. Changes to land use as a result of easements are not anticipated, as they will not restrict agricultural use. Embedded mitigation measures are detailed in Section 6.8; **t**hese measures include a commitment to returning land used temporarily to its original ALC grade.

ID	Inspectorate's comments	Response
	provide an estimate of the quantity of BMV land to be affected by the temporary works, the duration of such works and any long-term changes in land use introduced by associated easements.	
4.6.2	*Permanent removal of land from agricultural production (operation)* The Applicant proposes to scope out the permanent removal of land from agricultural production on the basis that all land required temporarily would be reinstated, the footprint of the permanent infrastructure is limited and impacts on agricultural operations would be dealt with through compensation agreements which lie outside of the ES process. The Inspectorate agrees this matter can be scoped out on the basis the ES confirms the amount of agricultural land to be permanently lost and explains why this is considered 'limited' and not likely to lead to significant effects. Reinstatement of land, and the proposed soil management and handling measures, should be clearly described in the ES and secured through the dDCO.	It is noted that impacts resulting from the permanent removal of land from agricultural production can be scoped out. The permanent loss of land (12.21 ha) from agricultural businesses equates to a very small percentage of the total utilised agricultural area (8.7 million hectares) in England (0.00014%) or in South East England (1.1 million hectares; <0.0001%) (Department for Environment, Food and Rural Affairs, 2024 (a)) (Department for Environment, Food and Rural Affairs, 2024 (b)). This is considered to be a limited loss of agricultural land. The impact on individual agricultural businesses would be mitigated through compensation agreements, which lie outside the scope of the EIA. Further detail on the extent of permanent agricultural land take is detailed in Section 6.9. Land required temporarily is committed to being returned to its pre-construction condition as referenced in Code of Construction Practice item GG07 (**Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice)** and Schedule 3 Requirement 9 of the draft DCO (**Application Document 3.1**).
4.6.3	*Temporary disruption and disturbance to agricultural operations from noise, fragmentation and disruption to water supplies and land drainage (construction, maintenance and decommissioning)* The Applicant proposes to scope out these matters on the basis that they will be managed through mitigation	It is noted that these matters are scoped out. Embedded mitigation measures are detailed in Section 6.8; these measures include a commitment to returning land used temporarily to its original ALC grade (CoCP item GG07 **Application Document 7.5.3.1 CEMP Appendix**

ID	Inspectorate's comments	Response
	measures set out within the outline Code of Construction Practice (CoCP), all land required temporarily would be reinstated and impacts on agricultural operations would be dealt with through compensation agreements which lie outside of the ES process. The Inspectorate agrees to scope out this matter on this basis.	**A Outline Code of Construction Practice)**.
4.6.4	*EMFs on land use – operation* The Applicant proposes to scope out the effects of EMFs on land use during operation of the Proposed Development on the basis that there is little evidence that exposure of crops, farm animals or natural ecosystems to transmission line EMFs has any agriculturally significant consequences. The Applicant proposes to undertake a walkover survey of the indicative alignment to identify land use and activities that may require additional clearance of the conductors. The Applicant will also provide the relevant information on EMFs in a separate document submitted as part of the application for development consent which will demonstrate compliance in accordance with the ICNIRP guidelines and paragraph 2.10.9 of EN-5. On this basis, the Inspectorate agrees to scope out operational effects from EMFs on land use.	An EMF compliance report is being submitted with the application (**Application Document 6.5 Electric and Magnetic Field Compliance Report**). However, it is noted that EMF impacts on land use during operation are scoped out.
4.6.5	*Economic effects on landowners (construction, operation, maintenance, and decommissioning)* Paragraph 3.7.6.12 of the Scoping Report proposes to scope out economic effects on individual landowners and farmers on the basis that most of the land will be reinstated by the end of the construction phase and any claims regarding compensation will be addressed outside of the EIA process. The Inspectorate agrees that significant effects are unlikely and is therefore content that this matter can be scoped out of further assessment.	It is noted that the economic effects on landowners are scoped out.

ID	Inspectorate's comments	Response
4.6.6	*Temporary loss of BMV land and temporary disturbance to soils and associated ecosystem services (construction, maintenance, and decommissioning)* Paragraph 3.7.6.6 of the Scoping Report states that until soil surveys have been undertaken to understand sensitivity of soils to handling, storage and reinstatement, construction effects on soils and ALC will be scoped into the ES. The ES should include the necessary information to demonstrate impacts can be avoided or reduced to exclude significant effects or provide an assessment where likely significant effects could occur.	An assessment of the soils and their sensitivity to handling, storage and reinstatement is presented in Section 6.9. This assessment has been based on available desk-study information and the results from predictive ALC mapping rather than soil surveys, an approach that has been discussed with Natural England. Whilst Natural England support the inclusion of the predictive mapping they highlight that this provides an indication of the ALC grade and does not provide the information required to inform the development of a SMP. As set out in Serction 6.8 ALC and soil surveys will be completed pre-construction to ensure site-specific survey data is available for the SMP. Further detail on the predictive approach is set out in Section 6.4. Further detail on the Predictive Modelling approach can be found in paragraph 6.4.6 – 6.4.9 of this chapter, and in **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent**.
4.6.7	*Permanent loss of BMV land and permanent disturbance to soils and associated ecosystem services (operation)* Paragraph 3.7.6.7 of the Scoping Report states that the land grades and soil types affected would be confirmed through the assessment process and as such, permanent impacts on soils and ALC will initially be scoped into the assessment. It's further stated that if the site survey confirms that the permanent land affected is not BMV land or that the cumulative loss is below the magnitude threshold for a likely significant effect, then permanent loss of agricultural land during operation would be scoped out of the ES. The Inspectorate agrees with this approach and considers that an assessment of the effects arising	An assessment of the soils and their sensitivity and loss of BMV land is presented in Section 6.9. This assessment has been based on available desk-study information and the results from predictive ALC mapping rather than soil surveys, an approach that has been discussed with Natural England. Whilst Natural England support the inclusion of the predictive mapping they highlight that this provides an indication of the ALC grade and does not provide the information required to inform the development of a SMP. As set out in Section 6.8 ALC and soil surveys will be completed pre-construction to ensure site-specific survey data is available for the SMP.

ID	Inspectorate's comments	Response
	from the loss of BMV land during operation should be included within the ES, where significant effects are likely to occur.	Further detail on the Predictive Modelling approach can be found in Section 6.4.6 – 6.4.9 of this chapter, and in **Application Document 6.3.3.6.A Appendix 3.6.A Predictive Agricultural Land Classification Report – Kent**.
4.6.8	*Temporary loss of BMV land and temporary disturbance to soils and associated ecosystem services (maintenance)* Paragraph 3.7.6.8 of the Scoping Report states that any maintenance or repair works required which would result in disturbance to soils during operation of the project would be undertaken in accordance with good practice soil handling methods. It's further stated that no likely significant effects on soils or ALC during operational maintenance or repair activities are therefore concluded and this aspect is scoped out of the ES. This is in contradiction to the information contained within Table 3.7.1 which proposes to scope in the temporary loss of BMV land and temporary disturbance to soils and associated ecosystem services from maintenance activities (to be reviewed once soil surveys are complete).The ES should clearly define the scope for the aspect and the Inspectorate considers that an assessment of the effects arising from the temporary loss of BMV land and temporary disturbance to soils and associated ecosystem services should be included within the ES, where significant effects are likely to occur.	An assessment of the soils and their sensitivity to disturbance during maintenance and the presence of BMV land is presented in Section 6.9. This aspect has been reviewed further and it is still considered that no significant effects will result from the Proposed Project during operation and maintenance. This assessment has been based on available desk-study information and the results from predictive ALC mapping rather than soil surveys, an approach that has been discussed with Natural England. Whilst Natural England support the inclusion of the predictive mapping they highlight that this provides an indication of the ALC grade and does not provide the information required to inform the development of a SMP. As set out in Section 6.8 ALC and soil surveys will be completed pre-construction to ensure site-specific survey data is available for the SMP. A summary of what is scoped in and out of this assessment is detailed in paragraphs 6.3.12 – 6.3.15.

Statutory Consultation

6.3.2 Statutory Consultation for the Proposed Project took place between 24 October and 18 December 2023. A further Targeted Consultation exercise on the main changes to the Proposed Project introduced after the 2023 statutory consultation, was undertaken between 8 July and 11 August 2024. In addition, a project update and a local engagement exercise took place between 22 November 2024 and 12 January 2025, focusing on design amendments made following Targeted Consultation A summary of

relevant feedback received during consultation relating to agriculture and soils is provided below in Table 6.7. Further details on how consultation responses have informed the assessment are provided in **Application Document 5.1 Consultation Report** and **Application Document 5.1.9 Appendix H Summary 2023 Response**.

Table 6.7 Comments raised during consultation

Stakeholder	Key topics raised by stakeholder	Summary of National Grid's response
Thanet District Council	Impacts on BMV land	This ES chapter has assessed the impacts of the Kent Onshore Scheme for both soil and for BMV, examined the impacts both during construction and operation, as well as the temporary and permanent land take for different aspects of the infrastructure.
	ALC Surveys	Due to an elevated UXO risk across the Order Limits, it has not been possible to undertake detailed ALC site surveys. Instead, a predictive modelling approach has been utilised to assess the extent of agricultural (and BMV) land across the route. This modelling approach has been discussed with Natural England and has been based upon the recognised approach utilised by the Welsh Government Predictive ALC map. **Application Document 6.3.3.6.A Appendix 3.6.A Predictive ALC Report** presents the results of the Agricultural Land Classification (ALC) predictive modelling, which includes plans showing each location where the soils have been assessed and the associated grade at that point.
Natural England	Soil Management Plan	Preconstruction surveys are committed to, will be undertaken in line with published guidance and will be used to update the outline Soil Management Plan with site specific information as set out in the Defra Construction Code of Practice. An oSMP has been produced for the Kent Onshore Scheme and contains measures informed by the site specific desk-based information. Outline Soil Management Plans are committed to be updated in line with pre-construction information. The outline SMP includes the requirements for on-going supervision and monitoring as well as the required competencies to be held by the responsible parties. Where agricultural land is to be returned to productive use the handling methodologies will outline the methods to minimise potential function loss as far as is practicable. For further details please refer to **Application Document 7.5.10.2 Outline Soil Management Plan – Kent**.

Stakeholder	Key topics raised by stakeholder	Summary of National Grid's response
	Impacts on BMV Land	This ES chapter has assessed the impacts of the Kent Onshore Scheme for both soil and for BMV, examined the impacts both during construction and operation, as well as the temporary and permanent take for different aspects of the infrastructure. Any options appraisal work undertaken prior to the assessment, such as that undertaken during the route selection, uses the Department for Environment, Food and Rural Affairs (Defra) Agricultural Land Classification (ALC) mapping layer to identify area potentially comprising Best and Most Versatile (BMV) land. As this layer does not differentiate between 3a and 3b, a precautionary assumption that all Grade 3 is BMV land was made at that stage.
Forestry Commission	Ancient Woodland Root Protection Areas	Details around soil working and management measures are detailed in **Application Document 7.5.10.2 Outline Soil Management Plan – Kent**, here measures on the avoidance of working and laydown within designated and sensitive areas are detailed.

Further Engagement

6.3.3 Further engagement was undertaken with Natural England in relation to the use of predictive ALC mapping in November and December 2024. The approach and data sources were presented to Natural England at meetings along with a commitment to complete the surveys pre-construction to inform the development of the Soil Management Plan.

Summary of Scope of Assessment

6.3.4 This section details what aspects have been scoped in and scoped out of the assessment through the scoping process and consultation with stakeholders.

Potential agriculture and soils receptors

6.3.5 BMV land: BMV land refers to land that falls into Grades 1, 2 and 3a of the ALC system. In this context, BMV land is viewed as a specific function of land and soils, and is the cumulation of various factors such as soil type, climate, gradient etc. Whilst linked to agricultural production, the impact on BMV land does not account for whether the land is in agricultural production or not, regardless of grade.

6.3.6 Soil: The impacts on soils are assessed based upon the array of soil functions that are described in Table 6.8 and the sensitivity of soil types as detailed in Table 6.9.

6.3.7 Land in Agricultural Production: This is a receptor that is primarily focussed on land in agricultural use at the time of assessment.

6.3.8 Agricultural Operations: This receptor primarily deals with the normal running of agricultural businesses (e.g. how land parcels are accessed, farm infrastructure)

6.3.9 Economic effects: This receptor accounts for the social and economic functioning of these businesses.

6.3.10 Electromagnetic frequencies: This assessment would cover where EMFs may be found to impact on sensitive receptors such as horses and/or riding schools.

Aspects scoped into the assessment

6.3.11 The scope of this assessment has considered the temporary and permanent impacts on agriculture and soils receptors during the construction, maintenance and decommissioning of the Proposed Project.

6.3.12 Temporary and permanent impacts on BMV land and soils during construction, operation and decommissioning have been considered in the assessment.

6.3.13 Whilst the aspects listed below have been scoped out it has been agreed that further information on the extent of permanent land take affecting agricultural receptors will be set out (Section 6.9).

Aspects scoped out of the assessment

6.3.14 The following aspects have been scoped out of the assessment (noting that the extent of permanent land take will be set out):

- Temporary removal of land from agricultural production (construction, maintenance and decommissioning);
- Permanent removal of land from agricultural production (operation);
- Temporary disruption and disturbance to agricultural operations from noise, fragmentation and disruption to water supplies and land drainage (construction, maintenance and decommissioning);
- Economic effects on landowners (construction, operation, maintenance, and decommissioning); and
- Effects of EMFs on land use (operation).

6.4 Approach and Methodology

6.4.1 **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** sets out the overarching approach that has been used in undertaking the Environmental Impact Assessment (EIA). This section describes the technical methods used to determine the baseline conditions, the sensitivity of the receptors and the magnitude of effects and sets out the significance criteria that have been used for the agriculture and soils assessment.

Guidance Specific to the Agricultural and Soils Assessment

6.4.2 The agriculture and soils assessment has been carried out in with regard to the following good practice guidance documents:

- Safeguarding our Soils: A Strategy for England (Department for Food and Rural Affairs, 2009);
- Technical Information Note 049. ALC Protecting the Best and Most Versatile Agricultural Land (Natural England, 2012);
- Guide to assessing development proposals on agricultural land (Natural England, 2021);
- Guidance Note: Working with Soil Guidance Note on Benefitting from Soil Management in Development and Construction (British Society of Soil Science, 2022);
- British Standard Specification for Topsoil and Requirements for Use (BS3882:2015) (British Standards Institute, 2015);
- Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Department for Environment, Food and Rural Affairs, 2009);
- Institute of Quarrying (IoQ) Good Practice Guide for Handling Soils in Mineral Workings (Institute of Quarrying, 2021);
- Agricultural Land Classification of England and Wales. Revised Guidelines and Criteria for Grading the Quality of Agricultural Land (Ministry of Agriculture, Fisheries and Food, 1988); and
- A New Perspective on Land and Soil in Environmental Impact Assessment (Institute of Environmental Management & Assessment, 2022).

Baseline Data Gathering and Forecasting Methods

6.4.3 This section describes the methodology used to establish the existing and future baselines together with the methodology/approach used to undertake the assessment of effects on agriculture and soils.

Data Sources

6.4.4 The baseline has been informed by a desk study which has drawn on the following key information sources:

- British Geological Survey (BGS) online mapping for bedrock and superficial geology (British Geological Survey, 2024);
- OS mapping and aerial photography to establish land use and settlement patterns;
- Soilscape mapping showing the distribution of main soil types was assessed on the Land Information System website (Cranfield University, 2024);
- ALC mapping, including provisional and (where available) detailed ALC mapping from the MAGiC website (Department for Environment, Food and Rural Affairs, 2025); and
- Extent of agri-environmental, and woodland and forestry schemes from the MAGiC website (Department for Environment, Food and Rural Affairs, 2025).

Study Area

6.4.5 The study area for Agriculture and Soils comprises the area directly affected by the Project, as defined by the Order Limits (see **Application Document 2.2.1 Overall Location Plan**). This is considered an appropriate study area based on professional judgement, knowledge of similar projects, and the Design Manual for Roads and Bridges (DMRB) LA09: Geology and Soils (Highways England, 2019) and was not raised as a concern in the Scoping Opinion (**Application Document 6.14 Environmental Scoping Report 2022**) received for the Proposed Project.

Site Survey and Predictive Modelling

6.4.6 It was not possible to undertake surveys to determine physical soil characteristics within the Order Limits to the depth required (1.2 m below ground level; as detailed in the MAFF Guidelines) due to constraints relating to the potential high-risk category of Unexploded Ordnance (UXO) identified during desk-based assessments (Zetica, 2024).

6.4.7 As a result, a comprehensive methodology was used to predict the likely ALC grades, as discussed with Natural England. The full methodology is detailed in **Application Document 6.3.3.6.A Predictive Agricultural Land Classification Report – Kent**.

6.4.8 The predictive methodology uses the Welsh Government's (2021) Predictive Agricultural Land Classification Map (Wales) Guidance Note v2.1 (Welsh Government, 2021) and applies desk-based information (where reliable) to the assessment process as defined in the published guidelines (Ministry of Agriculture, Fisheries and Food, 1988). The approach used was developed as part of another major infrastructure project (where survey access was also restricted) where engagement with key stakeholders, including Natural England, Welsh Government and Defra, was a key part of the methodology development. There was subsequently the opportunity to complete the ALC surveys on that project and use the field data to check the predictive grading; this showed a high level of correlation, especially in relation to how well the prediction estimated the extent of BMV land. It is recognised that landscapes, geologies and soil types will give different levels of accuracy in the prediction, but it is considered that use of this approach, in the absence of survey access, provides a better estimate of the extent of BMV land than relying on the available Provisional ALC mapping.

6.4.9 Surveys will be completed preconstruction (ALC and soil) once the UXO risk has been addressed as part of the early construction works. This information will be used to update the mitigation measures where required as detailed in **Application Document 7.5.10.2 Outline Soil Management Plan – Kent**.

6.4.10 For the predictive ALC mapping, the following desk-based information was gathered to assess the likely most limiting factor in relation to land grade:

- Climate;
- Elevation;
- Gradient;
- Flood Zone;
- BGS Bedrock (1:50k);
- BGS Superficial Deposits (1:50k);
- Soil association and associated characteristics (texture, wetness class and droughtiness);

- Ministry of Agriculture Fisheries and Food (MAFF) Provisional (Pre-1988) ALC grade; and
- Defra/Natural England 'Likelihood of Best and Most Versatile (BMV) Agricultural Land' (GIS layer available free online

[redacted]

Assessment Methodology

6.4.11 This section sets out the methodology used for assessing the effects on Agriculture and Soils for those aspects scoped into the assessment, as set out within Section 6.3 and agreed within the Scoping Opinion (**Application Document 6.14 Environmental Scoping Report 2022**).

6.4.12 The following methodology sets out the assessment of sensitivity, the degree of damage to/loss of soil resources, agricultural land and agricultural landholdings, and the subsequent impact of the Proposed Project on Agriculture and Soils, determining if effects are likely to be significant.

6.4.13 The assessment draws on guidance set out by the Institute of Environmental Management and Assessment (IEMA) on how land and soils should be assessed in EIA (Institute of Environmental Management & Assessment, 2022).

6.4.14 The IEMA guidance seeks to move practice away from a narrow focus on quantifying and financially compensating effects on agricultural land and advocates a new and wider approach to assessing the soil functions, ecosystem services, and natural capital provided by land and soils.

Assessment Criteria

Value/sensitivity

6.4.15 Table 6.8 and Table 6.9 set out the criteria that have been used to determine the sensitivity of receptors addressed in the Agriculture and Soils assessment. Table 6.8 sets out the sensitivity of soils in relation to the functions they provide (linked to ecosystem services). It should be noted that this chapter does not assess impacts to receptors assessed in other chapters (for example ecological or archaeological receptors) but does assess the importance of soils in the delivery of the associated soil functions.

6.4.16 Table 6.9 sets out three categories in relation to how sensitive different soil types are to handling and the resilience of soil structural units.

6.4.17 The IEMA guidelines separate receptor sensitivity into the following categories: Very High, High, Medium, Low, and Negligible (Institute of Environmental Management & Assessment, 2022).

Table 6.8 Guidance on sensitivity of soil resources in relation to soil functions

Receptor Sensitivity	Soil Resource and Soil Functions
Very High	Biomass production: ALC Grades 1 & 2. Ecological habitat, soil biodiversity and platform for landscape: Soils supporting protected features within a European site (e.g., Special Area of Conservation (SAC), SPA, Ramsar); Peat soils; Soils supporting a National Park, or Ancient Woodland. Soil carbon: Peat soils. Soils with potential for ecological / landscape restoration. Soil hydrology: Very important catchment pathway for water flows and flood risk management. Archaeology, Cultural Heritage, Community Benefits and Geodiversity: Scheduled Ancient Monuments (SAMs) and adjacent areas; World Heritage and European designated sites; Soils with known archaeological interest; Soils supporting community / recreational / educational access to land covered by National Park designation. Source of materials: Important surface mineral reserves that would be sterilised (i.e., it would no longer be possible to access the resources).
High	Biomass production: ALC Grade 3a. Ecological habitat, soil biodiversity and platform for landscape: Soils supporting protected features within a UK designated site (e.g., United Nations Educational, Scientific and Cultural Organisation (UNESCO) Geoparks, Site of Special Scientific Interest (SSSI) or Area of Outstanding Natural Beauty (AONB), Special Landscape Areas (SLAs) and Geological Conservation Review sites); Native Forest and woodland soils; Unaltered soils supporting seminatural vegetation (including the UK Biodiversity Action Plan (UKBAP) Priority habitats or Section 6 habitats in Wales). Soil carbon: Organo-mineral soils (e.g., peaty soils). Soil hydrology: Important catchment pathway for water flows and flood risk management. Archaeology, Cultural Heritage, Community Benefits and Geodiversity: Soils with probable but as yet unproven (prior to being revealed by construction) archaeological interest; historic parks and gardens; Regionally Important Geological Site (RIGS); Soils supporting community / recreational / educational access to RIGS and AONBs.

Receptor Sensitivity	Soil Resource and Soil Functions
	Source of materials: Surface mineral reserves that would be sterilised (i.e., it would no longer be possible to access the resources).
Medium	Biomass production: ALC Grade 3b. Ecological habitat, soil biodiversity and platform for landscape: Soils supporting protected or valued features within non-statutory designated sites (e.g.,Local Nature Reserves (LNRs), Local Geological Sites (LGSs), Sites of Nature Conservation Importance (SNCIs), SLAs; Non-Native Forest and woodland soils. Soil carbon: Mineral soils. Soil hydrology: Important minor catchment pathway for water flows and flood risk management. Archaeology, Cultural Heritage, Community Benefits and Geodiversity: Soils with possible but as yet unproven (prior to being revealed by construction) archaeological interest; Soils supporting community/ recreational / educational access to land. Source of materials: Surface mineral reserves that would remain accessible for extraction.
Low	Biomass production: ALC Grade 4 and 5 or Urban soils. Ecological habitat, soil biodiversity and platform for landscape: Soils supporting valued features within non designated notable or priority habitats / landscapes. Agricultural soils. Soil carbon: Mineral soils. Soil hydrology: Pathway for local water flows and flood risk management. Archaeology, Cultural Heritage, Community Benefits and Geodiversity: Soils supporting no notable cultural heritage, geodiversity nor community benefits; Soils supporting limited community / recreational / educational access to land. Source of materials: Surface mineral reserves that would remain accessible for extraction.
Negligible	As for low sensitivity, but with only indirect, tenuous, and unproven links between sources of impact and soil functions.

Table 6.9 Determination of sensitivity criteria in relation to soil handling and soil structural resilience

Sensitivity of Topsoil and Subsoil	Soil Texture, Field Capacity Days and Wetness Class
High Sensitivity (low resilience to structural damage)	Soils with high clay and silt fractions (clays, silty clays, sandy clays, heavy silty clay loams and heavy clay loams) and organo-mineral and peaty soils where the Field Capacity Days (FCD)[1] are 150 or greater. Medium-textured soils (silt loams, medium silty clay loams, medium clay loams and sandy clay loams) where the FCDs are 225 or greater. All soils in wetness classes[2] Wetness Class Value (WVC) or WCVI.
Medium Sensitivity (medium resilience to structural damage)	Clays, silty clays, sandy clays, heavy silty clay loams, heavy clay loams, silty loams and organo-mineral and peaty soils where the FCDs are fewer than 150. Medium-textured soils (silt loams, medium silty clay loams, medium clay loams and sandy clay loams) where FCDs are fewer than 225. Sands, loamy sands, sandy loams and sandy silt loams where the FCDs are 225 or greater or are in wetness classes WCIII and WCIV.
Low Sensitivity (high resilience to structural damage)	Soils with a high sand fraction (sands, loamy sands, sandy loams and sandy silt loams) where the FCDs are fewer than 225 and are in wetness classes WCI to WCII.

Magnitude of Impact

6.4.18 Table 6.10 sets out the criteria (Institute of Environmental Management & Assessment, 2022) which has been used to assess the magnitude of impact on receptors addressed in the Agriculture and Soils assessment.

[1] Field Capacity Days is a meteorological parameter which estimates the period when the soil moisture deficit is zero. This will be a period usually between autumn/early winter and the spring when evapotranspiration exceeds rainfall and a water deficit begins to accumulate.

[2] Wetness Classes are determined based on the depth and persistence of waterlogging within a soil profile. For example, if there are no limitations to drainage and no evidence of waterlogging within 70 cm of the soil surface, the profile would have a Wetness Class of I. Conversely, if the FCDs is high and there is evidence of waterlogging close to the surface, the profile may have a Wetness Class of V or VI (the lowest classes).

Table 6.10 Determination of magnitude criteria for impact on agricultural land and soils

Magnitude of Impact (Change)	Description of Impacts Restricting Proposed Land Use
Large	Permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading), over an area of more than 20ha or loss of soil-related features set out inTable 6.8 (including effects from 'Temporary Developments' *); or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of more than 20 ha or gain in soil-related features set out in Table 6.8 (including effects from 'Temporary Developments'*).
Medium	Permanent, irreversible loss of one or more soil functions or soil volumes, over an area of between 5 and 20 ha or loss of soil-related features set out in Table 6.8 (including effects from 'Temporary Developments'*); or Potential for improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of between 5 and 20 ha or gain in soil-related features set out in Table 6.8.
Small	Permanent, irreversible loss over less than 5 ha or a temporary, reversible loss of one or more soil functions or soil volumes), or temporary, reversible loss of soil related features set out in Table 6.8 above; or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of less than 5 ha or a temporary improvement in one or more soil functions due to remediation or restoration or off-site improvement, or temporary gain in soil-related features set out in Table 6.8.
Negligible	No discernible loss or reduction or improvement of soil functions or soil volumes that restrict current or proposed land use.

* Temporary developments can result in a permanent impact if resulting disturbance or land use changes cause permanent damage to soils

Significance of effects

6.4.19 The significance of effects has been assessed considering the sensitivity of the agriculture and soil receptors within the Order Limits, and the magnitude of change (impact) likely to be caused by the activities of the Proposed Project. These factors are combined to give an overall significance of effect.

6.4.20 Significance has been derived using the matrix set out in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**. This has been supplemented by professional judgement which, where applicable, has been explained to give the rationale behind the values assigned. Likely significant effect, in the context of the EIA Regulations, are effects of moderate or greater significance.

Assumptions and Limitations

6.4.21 ALC surveys were not undertaken because the high risk of potential UXO presence meant that intrusive surveys, to the depth and frequency required, posed a risk to surveyors.

6.4.22 As ALC surveys were not able to be safely undertaken, an assessment was conducted of the likely soil types present and the factors affecting soils at any given location to assess the potential ALC grade using the MAFF revised guidelines (Ministry of Agriculture, Fisheries and Food, 1988) and criteria for grading the quality of agricultural land. The baseline information for this assessment is set out in Section 6.7. The predictive approach was discussed with Natural England and is further detailed in **Application Document 6.3.3.6.A Predictive Agricultural Land Classification Report – Kent**.

6.4.23 It is noted (see paragraph 6.4.8) that this approach has limitations when compared to physical ALC surveys, with the outcome for each location point assessed being a modelled prediction and not therefore definitive, albeit based on the best available data. The method adopted has, however, been used to supplement the available provisional ALC mapping at a scale of 1:250,000 (which is not considered suitable for use at a project level) to provide a greater level of refinement than using the provisional ALC 1:250,000 mapping alone. This predictive data has been used to support the data available and the assessment of effects.

6.5 Basis of Assessment

6.5.1 This section sets out the assumptions that have been made in respect of design flexibility maintained within the Proposed Project and the consideration that has been given to alternative scenarios and the sensitivity of the assessment to changes in the construction commencement year.

6.5.2 Details of the available flexibility and assessment scenarios are presented in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project** and **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**.

Flexibility Assumptions

6.5.3 The environmental impact assessments have been undertaken based on the description of the Proposed Project provided in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. To take account of the

flexibility allowed in the Proposed Project, consideration has been given to the potential for effects to be of greater or different significance should any of the permanent or temporary infrastructure elements be moved within the Limits of Deviation (LoD) or Order Limits.

6.5.4 The assumptions made regarding the use of flexibility for the main assessment are set out in Table 6.11 below.

Table 6.11 Flexibility assumptions

Element of flexibility	How it has been considered within the assessment
Lateral LoD High Voltage Direct Current (HVDC) cables	Changes to the cable route within the LoD are not expected to result in new impacts on agriculture and soils. An assumption of an open cut installation technique has been made. It is also assumed that all land required temporarily will be reinstated following cable installation. A minimum depth of 0.9 m installation depth is assumed as detailed in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**.
Lateral LoD Minster Converter Station and Minster Substation	Changes to the footprint of the Converter Station and Substation within the LoD would not be expected to result in new impacts on agriculture and soils. The soil and ALC grades across the full Order Limits have been assessed, allowing the maximum flexibility within the assessment. Any change in the location of the converter station or substation within the LoD (comprising 10.89 ha) would not result in a change to the extent of BMV land affected. .
Vertical LoD Minster Converter Station and Minster Substation	The vertical LoD does not change the assessment presented in this chapter as this would not change the location or footprint of either facility.
Lateral LoD overhead line	Changes to the alignment of the overhead line would not be expected to result in new impacts on agriculture and soils; the soil conditions across the full Order Limits have been assessed and therefore the maximum flexibility has been assessed.
Vertical LoD overhead line	The vertical LoD does not change the assessment presented in this chapter as they remain inside the Order Limits.
Order Limits – temporary construction works	Changes to the layout of temporary construction works within the Order Limits are not expected to result in new impacts on agriculture and soils; the soil conditions across the full order Limits have been assessed and therefore the maximum flexibility has been assessed.

Sensitivity Test

6.5.5 It is likely that under the terms of the draft DCO, construction could commence in any year up to five years from the granting of the DCO which is assumed to be 2026. Consideration has been given to whether the effects reported would be any different if the works were to commence in any year up to year five. It is considered that the start year has no effect on the outcome of the Agriculture and Soils assessment.

6.6 Study Area

6.6.1 The study area for agriculture and soils comprises the land which would be directly affected within the Order Limits for the Kent Onshore Scheme (through disturbance or temporary covering of the soils). This is illustrated in **Application Document 2.2.1 Overall Location Plan**. and is based on consideration of the distance over which likely significant effects can reasonably be expected to occur and technical knowledge of similar schemes.

6.7 Baseline Conditions

Soils

6.7.1 The solid geology underlying the study area is described as comprising the Thanet Formation. This comprises sand, silt, and clay sedimentary rocks formed approximately 56 to 59 million years ago in the Palaeogene Period.

6.7.2 This solid geology is, in the main, overlain by tidal flat deposits within the study area. This material comprises clay and silt and was deposited around two million years ago in the Quaternary Period. Along the alignment of Richborough Way these superficial deposits are absent. Further detail is provided in **Application Document 6.2.3.5 Part 3 Chapter 5 Geology and Hydrogeology**.

6.7.3 The soil types present within the Order Limits are predominantly described as loamy and clayey soils of coastal flats with naturally high groundwater (**Application Document 6.4.3.6.1 Soilscapes Mapping**). These soils are formed in the tidal flat deposits. Where these drift deposits are absent the soils are described as freely draining, slightly acid, loamy soils formed directly on the solid geology.

6.7.4 The main Soil Associations (representing a group of soil series (soil types) which are typically found occurring together in the landscape (Hodge, 1984) have been identified within the Order Limits as follows:

- Coombe 1: Well drained calcareous fine silty soils deep in valley bottoms. Shallow to chalk on valley sides in places. Parent materials: Chalky drift and chalk.
- Hamble 1: Some soils affected by groundwater and some fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Some shallower soils over chalk. Parent material: Aeolian silty drift over Tertiary loam.
- Newchurch 2: Deep stoneless mainly calcareous clayey soils. Parent material: Marine alluvium.

6.7.5 It is considered that these soils are of **very high**, **high** and **medium** sensitivity in relation to their soil functions as detailed in Table 6.8 and Table 6.9.

Agricultural Land Classification

6.7.6 Provisional ALC mapping (**Application Document 6.4.3.6.2 Provisional Agricultural Land Classification Mapping**) shows that the study area comprises Grade 1, 2, 3 and 5 land. This mapping, at a scale of 1:250,000, does not distinguish between Grades 3a and 3b (Provisional Mapping is developed from interpoldated datasets and the grading was based mainly on reconnaissance level ground observations of soil and topography, supplemented by information from agricultural and horticultural advisers; they were published before the ALC system was updated to divide Grade 3 into grades 3a and 3b) and therfore cannot be used to inform site-specific assessments as stated by Natural England (Natural England, 2010)) but provides an indication of the likely land classification. The Provisional ALC information indicated that a large portion of the study area may comprise BMV land. BMV land comprises land in Grades 1, 2, and 3a.

6.7.7 There is some detailed ALC mapping available for the land within the Order Limits which is based on surveys undertaken in 1993. The land east of Ebbsfleet Lane and to the west of Ebbsfleet Farmhouse and Great Oaks Small School has been mapped as a mix of Grade 2 and Grade 3a (as shown in **Application Document 6.4.3.6.3 Detailed Agricultural Land Classification Mapping**).

6.7.8 Topography is unlikely to pose a limitation to land grade. Flood risk is likely to pose a limitation to land grade along the coastal strip and in the lowest lying areas. The limitation may be reduced by the presence of any drainage ditch networks.

6.7.9 Climate is unlikely to pose an overall limitation on ALC grade in relation to the criteria set out in the ALC Guidelines (Ministry of Agriculture, Fisheries and Food, 1988). Climate does, however, have an important influence on the interactive limitations of soil wetness and soil droughtiness, which is the balance between rainfall and water losses from the soil. The land within the Order Limit has both relatively low rainfall and a long growing season, acting to decrease the severity of any potential soil wetness limitation, but increasing the severity of any potential soil droughtiness limitation.

6.7.10 Nationally, 65.1% of land in England (Ministry of Agriculture, Fisheries and Food and ADAS, 1983) is provisionally graded as Grades 1, 2 and 3, and is therefore likely to comprise of BMV land. A comparison of Provisional ALC across the districts within the study area, against those of England as a whole, is set out in Table 6.12.

Table 6.12 Provisional Agricultural Land by area (ha) across the Project

ALC Grade	Kent County [Area (%)]	Thanet District [Area (%)]	Dover District [Area (%)]	England [Area (%)]
Grade 1	31,647 (9.0%)	4,527 (44.2%)	6,856 (22.2%)	354,562 (2.7%)
Grade 2	72,578 (20.5%)	1,770 (17.3%)	7,678 (24.9%)	1,848,874 (14.2%)
Grade 3	173,828 (49.2%)	461 (4.5%)	11,748 (38.1%)	6,290,210 (48.2%)

ALC Grade	Kent County [Area (%)]	Thanet District [Area (%)]	Dover District [Area (%)]	England [Area (%)]
Total extent of Grades 1, 2 and 3	*278,053 (78.7%)*	*6,758 (66.0%)*	*26,282 (85.2%)*	*8,493,646 (65.1%)*
Grade 4	25,847 (7.3%)	0 (0.0%)	1,605 (5.2%)	1,839,581 (14.1%)
Grade 5	1,178 (0.3%)	124 (1.2%)	223 (0.7%)	1,100,305 (8.4%)
Non Agricultural	23,293 (6.6%)	424 (4.1%)	654 (2.1%)	655,856 (5.0%)
Urban	24,934 (7.1%)	2,929 (28.6%)	2,110 (6.8%)	951,424 (7.3%)

Predictive Agricultural Land Classification

6.7.11 Where detailed mapping was not available from published sources. ALC grade predictive mapping was undertaken. The results from this analysis are shown in Figure **Application Document 6.4.3.6.4 Predictive Agriculture Land Classification Mapping**, with full details presented in **Application Document 6.3.3.6.A Predictive Agricultural Land Classification Report - Kent**.

6.7.12 The extent of each predicted ALC grade within the Order limits is presented in Table 6.13.

Table 6.13 Predictive Agricultural Land by area (ha) across the Project

ALC Grade	Area (ha)	Area (%)
Grade 1	0.00	0.00
Grade 2	31.65	18.66
Grade 3a	53.36	31.45
Predicted BMV land	*85.01*	*50.11*
Grade 3b	71.05	41.88
Grade 4	0.00	0.00
Grade 5	0.00	0.00
Other Land/Non-agricultural	13.61	8.02
Total	**169.67 ha**	**100 %**

6.7.13 Grade 2 and 3a land, covering approximately 85.01 ha (50.11%) of the land within the Order Limits, is considered to be BMV agricultural land. BMV land is a receptor of **Very High** (Grade2) or **High** (Grade 3a) sensitivity.

Land Use

6.7.14 A desk-based study using aerial photographs and OS Mapping, has shown that the land appears to be principally arable, with small areas of pasture on either side of the River Stour, and Stonelees and St. Augustine's golf courses east of Richborough Way.

6.7.15 There are areas of land within the Order Limits under Countryside Stewardship (Higher Tier) Agreements[3] and areas south of the River Stour under Entry Level plus Higher Level Environmental Stewardship agreements (see **Application Document 6.4.3.6.5 Agri-environmental Schemes**). Small areas of land east of Richborough Way (associated with the golf course) are also under Woodland Grant schemes[4] (See **Application Document 6.4.3.6.6 Forestry and Woodland Grant Schemes**).

Future Baseline

6.7.16 It is considered that the baseline in relation to soils and ALC grades would not change from that described within the timeframe for the construction of the Project.

6.7.17 While there may be potential changes in relation to climate change, including greater rainfall intensity and frequency of droughts, that could affect soil conditions, land grade, and farming practices, it is likely that these would only be visible over longer time frames.

6.7.18 There could potentially be changes to land management practices and business approaches across the landowners/ land mangers over the construction and operation (and maintenance) of the Project.

6.8 Proposed Project Design and Embedded Mitigation

6.8.1 The Proposed Project has been designed, as far as possible, following the mitigation hierarchy in order to, in the first instance, avoid or reduce agricultural and soils impacts and effects through the process of design development, and by embedding measures into the design of the Proposed Project.

6.8.2 As set out in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**, mitigation measures typically fall into one of three categories: embedded measures; control and management measures; and additional mitigation measures. Embedded, and control and management measures are set out below. Additional mitigation measures are discussed in Section 6.10.

[3] Stewardship and Agri-environment Schemes comprise government funding to farmers and land managers to support activities which improve the local environment. There are different levels of these schemes which have increasing complexity and land management requirements but also therefore have greater environmental benefits.

[4] Woodland Grant Schemes (WGS) comprise grants and other incentives for woodland creation, maintenance, management and tree health. WGS 1, 2 and 3 were time based, with WGS1 being replaced by WGS2 etc.

Embedded Measures

6.8.3 Embedded measures have been integral in reducing, and where possible avoiding, the agriculture and soils effects of the Proposed Project. Measures that that have been incorporated are:

- Sensitive routeing and siting of infrastructure and temporary works to reduce environmental impacts, including on agricultural land and soils.;
- Rationalisation of the design to minimise permanent land take requirements including from agricultural land.;
- The temporary nature of many of the construction activities and the subsequent restoration of the land and its return to the preconstruction use is likely to result in the avoidance of long-term impacts on agricultural and soil receptors (AS11); and
- Commitments made within **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**.

Control and Management Measures

6.8.4 Measures relevant to the control and management of impacts during construction have been included within **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice**. The following measures have been taken into account in assessing the agriculture and soils effects of the Proposed Project:

- GG03: The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans. The title and contact number of person(s) accountable for issues relating to dust, waste, water, noise, vibration and soil will be displayed at the site boundary.
- GG04: A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced Environmental Clerk of Works (ECoW) will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CEMP. The ECoW will monitor that the works proceed in accordance with relevant environmental DCO requirements and adhere to the required good practice and mitigation measures. The ECoW will be supported as necessary by appropriate specialists, including ecologists, soil scientists and arboriculturists.
- GG06: A full photographic/aerial footage and descriptive record of condition (pre-condition survey) will be carried out of the working areas that may be affected by the construction activities prior to these works commencing. This record will be available for comparison following completion of reinstatement works to ensure that the standard of reinstatement at least meets that recorded in the pre-condition survey, or as agreed in the LEMP or if the DCO provides otherwise, then in accordance with the DCO.
- GG07: Land used temporarily will be reinstated (bearing in mind restrictions on planting and land use) to its pre-construction condition and use, unless agreed otherwise, save where the DCO provides otherwise, in which case such reinstatement will be in accordance with the DCO. This is subject to the provisions of Article 27 of the draft DCO. Hedgerows, fences and walls (including associated

earthworks and boundary features) will be reinstated to a similar style and quality to those that were removed, where possible, with landowner consultation.

- GG08: Where sensitive features will be retained within or immediately adjacent to the Order Limits, an appropriate protective area will be established using appropriate fencing and signage and will be inspected, repaired and replaced as necessary. The protective areas will be shown on the Retention and Reinstatement Plans contained within the LEMP.
- GG19: Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression where appropriate.
- GG25: Stone pads or equivalent will be installed in areas where heavy equipment, such as cranes and piling rigs, will be used. The stone pads will provide stable working areas and will reduce disturbance to the ground. The stone pad area will be stripped of the topsoil, which will be stored and reinstated in accordance with the soil management measures contained in the CEMP. Archaeological mitigation will be undertaken, as appropriate, in areas where the pads have the potential to impact on archaeological remains. The mitigation will be agreed with the relevant stakeholder and will be in line with the OWSI.
- AS01: The Outline Soil Management Plans set out specific guidance in relation to soil handling, including, soil stripping, soil stockpiling and soil reinstatement. These will be updated to Soil Management Plans prior to construction, to include information from soil and agricultural land classification (ALC) surveys. Measures will include but not be limited to the following:
  - preconstruction surveys in accordance with published guidance to confirm ALC grade and soil type;
  - how topsoil and subsoil will be stripped and stockpiled;
  - suitable conditions for when handling soil will be undertaken, for example avoiding handling of waterlogged soil;
  - indicative soil storage locations;
  - how soil stockpiles will be designed taking into consideration site conditions and the nature/composition of the soil;
  - specific measures for managing sensitive soils;
  - suitable protective surfacing where soil stripping can be avoided, and weed suppression encouraged, based on sensitivity of the environment and proposed works;
  - approach to reinstating soil that has been compacted, where required; and
  - details of measures required for soil restoration.
- AS02: Where land is being returned to agricultural use, the appropriate soil conditions (for example through the replacement of stripped layers and the removal of any compaction) will be recreated. This will be achieved to a depth of 1.2 m (or the maximum natural soil depth if this is shallower) except over buried cables where the reinstated soil depth will be a minimum of 0.9 m. This will aim to restore land to the pre-construction ALC grade (unless otherwise agreed with the landowner).
- AS03: Access to and from residential, commercial, community and agricultural land uses will be maintained throughout the construction period or as agreed through the

landowner discussions. This may require signed diversions or temporary restrictions to access. The means of access to affected properties, facilities and land parcels will be communicated to affected parties at the start of the project, with any changes communicated in advance of the change being implemented. Where field-to-field access points require alteration as a result of construction, alternative suitable field access will be provided in consultation with the landowner/occupier.

- AS04: Existing water supplies for livestock and irrigation will be identified pre-construction. Where supplies will be lost or access compromised by construction works, temporary alternative supplies will be provided. Water supplies will be reinstated following construction.
- AS05: Consultation with affected landowners will be carried out to investigate the current extent of land drainage which will be taken into account in the development of the Drainage Management Plan (see W14) prior to construction, with the intent of maintaining the efficiency of the existing land drainage system.
- AS06: Should animal bones be discovered during construction, which may indicate a potential burial site, works will cease, and advice will be sought from the Animal Health Regional Office on how to proceed, relevant to the origin and age of the materials found.
- AS07: All movement of plant and vehicles between fields will cease in the event of a notification by the Department for Environment, Food and Rural Affairs (Defra) of a disease outbreak in the vicinity of the site that requires the cessation of activities. Advice will be sought from Defra in order to develop suitable working methods required to reduce the biosecurity risk associated with the continuation of works.
- AS08: Clay bungs or other vertical barriers will be constructed within trench excavations where deemed necessary by a suitably experienced person, to prevent the creation of preferential drainage pathways.

6.8.5 **Application Document 7.5.10.2 Outline Soil Management Plan - Kent** sets out specific measures to mitigate damage through the disturbance of in-situ soil materials. It contains specific guidance in relation to soil handling, including, soil stripping, soil stockpiling and soil reinstatement.

6.9 Assessment of Impacts and Likely Significant Effects

6.9.1 The assessment of the effects of the Proposed Project on agriculture and soils receptors described in this section considers the embedded and control and management measures described in Section 6.8.

Construction Phase

6.9.2 This section identifies the anticipated effects of the Project following the implementation of embedded, standard and additional mitigation measures for the construction phase.

Soils

6.9.3 There would be disturbance to soils, from construction of the temporary access and haul roads, temporary construction compounds and construction laydown areas, soil stripping of working areas for underground cabling, and soil stripping for the permanent infrastructure.

6.9.4 The impacts on soils have the potential to occur across the land within the Order Limits, adversely affecting the ecosystem services the soils provide over an area of up to approximately 169.67 ha. This could include, for example, soil compaction due to the movement of plant across the soil surface or poor restoration of disturbed soils resulting in mixing of the soil horizons and compaction, which could reduce the infiltration rate of rainfall and result in an increase in surface runoff and consequent erosion and flood risk.

6.9.5 In accordance with the control measures set out in **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice**, land required temporarily for construction would be reinstated to its pre-construction use and condition (or as agreed with the landowner). This would include removing temporary works such as compound areas and temporary access and haul roads. Implementation of these measures would reduce the detrimental effects on soil function and would mean that the reinstated soils are able to provide their associated ecosystem services following reinstatement. All topsoil stripped from the footprint of permanent infrastructure would be re-used within the Proposed Project (for example for landscaping or ecological mitigation), again enabling those materials to continue to provide a range of soil functions.

6.9.6 As such, there would be a **small** magnitude impact on **very high**, **high** and **medium** sensitivity soils and their associated ecosystem services, which is assessed as a **moderate to minor** adverse effect, that is significant. This assessment is based on the predictive mapping and associated soil information; a precautionary approach has therefore been taken by assessing the sensitivity of the soils as being in the highest three categories.

BMV Agricultural Land

6.9.7 During construction there would be an impact on BMV land from construction of the temporary access and haul roads, temporary construction compounds and construction laydown areas, soil stripping of working areas for underground cabling, and soil stripping for the permanent infrastructure.

6.9.8 Table 6.14 details the total extent of land at each predicted grade required for temporary and permanent aspects of the Proposed Project.

Table 6.14 Predicted ALC grades (ha) affected by the temporary and permanent design features of the Proposed Project

Project Aspect	Grade 2	Grade 3a	Grade 3b	Grade 4	Other/Non-agricultural	Total land take
Order Limits (temporary)	31.65	53.36	71.05	0.00	13.61	169.67
Access (permanent)	0.33	0.58	0.00	0.00	0.00	0.91
Substation and Converter Station	0.00	9.06	0.00	0.00	0.00	9.06

(combined) (permanent)						
Pylons (permanent)	0.00	0.04	0.06	0.00	0.00	0.10
Ecological change (permanent)	0.28	1.92	0.00	0.00	0.00	2.20
Total land required permanently	**0.61**	**11.60**	**0.06**	**0.00**	**0.00**	**12.27**
Total area of BMV land (Grade 2 and 3a) required permanently	**12.21**					

6.9.9 As such, there would be a temporary **small** magnitude impact on a receptor of **very high** and **high** sensitivity. In line with the matrix presented in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** this would be assessed as a **moderate** to **minor** adverse effect. However, in accordance with the control measures set out in **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice**, land required temporarily for construction would be reinstated to its pre-construction use and condition (or as agreed with the landowner). This would include removing temporary works such as compound areas and temporary access and haul roads. Implementation of these measures would reduce the detrimental effects on soils and ALC grade, with land being returned to its preconstruction ALC grade. Taking account of the control and management measures this would result in no more than a **minor** effect which is not significant.

6.9.10 The permanent loss of 12.21 ha of BMV land is considered a **medium** magnitude impact on a receptor of **very high** and **high** sensitivity, which is assessed as a **major** (Grade 2) to **moderate** (Grade 3a) adverse effect, that is significant. This assessment is based on the predictive ALC mapping; given the assessment outcome it is considered this is a precautionary approach.

Operation and Maintenance Phase

6.9.11 This section identifies the anticipated effects of the Project following the implementation of embedded and control and management measures for operation (and maintenance).

Soils

6.9.12 Any maintenance or repair works required that would result in disturbance to soils would be undertaken in accordance with good practice methods. It is assumed any such impacts would be small scale, infrequent and temporary, with any soils disturbed reinstated to their previous condition.

6.9.13 As such, there would be a **small** magnitude impact on **very high**, **high** and **medium** sensitivity soils and their associated ecosystem services. In line with the matrix set out in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** this would be assessed as a **moderate or minor** adverse effect. Based on the likely very temporary nature of maintenance activities it is assessed that this would be **minor** and not significant.

Agricultural Land

6.9.14 Permanent loss of agricultural land reported under the Construction Phase section above would remain lost during the operational phase.

6.9.15 Any maintenance or repair works required on agricultural land which would result in disturbance would be undertaken in accordance with good practice methods as set out in the Defra Construction code of practice for the sustainable use of soil on construction sites (Department for Environment, Food and Rural Affairs, 2009), and detailed in the oSMP.

6.9.16 The extent and temporary nature of any such works is considered to result in a **small** magnitude impact on a receptor of **very high** and **high** sensitivity. In line with the matrix presented in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** this would be assessed as a **moderate or minor** adverse effect. However, based on the likely very temporary nature of maintenance activities it is assessed that this would be up to **minor** and not significant.

Decommissioning Phase

6.9.17 This section identifies the anticipated effects of the Proposed Project following the implementation of embedded and control and management measures should the Proposed Project be decommissioned.

Soils

6.9.18 During decommissioning there would be disturbance to soils, from construction of the temporary access and haul roads, temporary construction compounds and construction laydown areas. There would also be removal of infrastructure and the subsequent reinstatement of the land.

6.9.19 The impacts on soils have the potential to occur across the land within the Order Limits, adversely affecting the ecosystem services the soils provide. This could include, for example, soil compaction due to the movement of plant across the soil surface or poor restoration of disturbed soils resulting in mixing of the soil horizons and compaction, which could reduce the infiltration rate of rainfall and result in an increase in surface runoff and consequent erosion and flood risk. It is considered that the areas required for the decommissioning would be similar to those reported above during the construction phase.

6.9.20 There would also be a positive impact through the effective reinstatement of soils and land where infrastructure is removed.

6.9.21 All decommissioning works would be undertaken in accordance with good practice at the time of decommissioning as set out in the Defra Construction code of practice for the sustainable use of soil on construction sites (Department for Environment, Food and Rural Affairs, 2009), and detailed in the oSMP (**Application Document Outline Soil Management Plan – Kent**). Implementation of these measures would reduce the detrimental effects on soil function and would mean that the reinstated soils are able to provide their associated ecosystem services following reinstatement.

6.9.22 As such, there would be a **small** magnitude impact on **very high**, **high** and **medium** sensitivity soils and their associated ecosystem services. In line with the matrix presented in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** this would be assessed as a **moderate to minor** adverse effect that is significant. This assessment is based on the predictive mapping and

associated soil information; a precautionary approach has therefore been taken by assessing the sensitivity of the soils as being in the highest three categories.

6.9.23 In the event that the Proposed Project is decommissioned and the land reinstated, there would also be a **large** impact related to the permanent improvement in soil functions (from the operational position) which would be considered as **moderate** to **major** beneficial effect and significant.

Agricultural Land

6.9.24 During decommissioning there would be an impact on BMV land from construction of the temporary access and haul roads, temporary construction compounds and construction laydown areas. There would also be removal of infrastructure and the subsequent reinstatement of the land.

6.9.25 It is assumed that the ALC grades will be as shown in the baseline, with the exception of areas of permanent infrastructure which will have been taken out of agricultural use.

6.9.26 It is assumed the impact would be similar to that identified during construction. This would be a temporary **small** magnitude impact on a receptor of **very high** and **high** sensitivity. In line with the matrix presented in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** this would be assessed as a **moderate to minor** adverse effect. However, it is expected that similar measures as those outlined in **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice** would be in place and implementation of these measures would reduce the detrimental effects on soils and ALC grade, with land being returned to its pre-decommissioning ALC grade. Taking account of the control and management measures this would result in no more than a **minor** effect which is not significant.

6.9.27 In the event that the Proposed Project is decommissioned and the land reinstated, there would also be the reinstatement of land used for above ground infrastructure. This would comprise the reinstatement of 12.21 ha of BMV land which would be considered a beneficial impact of **medium** magnitude on a receptor of **very high** and **high** sensitivity, which is assessed as a **moderate** to **major** beneficial effect, that is significant.

6.10 Additional Mitigation

6.10.1 Where potential likely significant adverse effects are identified after considering embedded and control measures, ‘additional mitigation measures’ are proposed to further reduce, mitigate or offset the identified adverse environmental effects.

6.10.2 There are no additional mitigation measures which can be incorporated to further reduce likely significant effects on agriculture and soils.

6.11 Residual Effects and Conclusions

6.11.1 Table 6.15 to Table 6.17 summarise the residual effects of the Proposed Project on agriculture and soil receptors following the implementation of additional mitigation measures outlined in Section 6.10.

Table 6.15 Summary of residual agriculture and soil effects (Construction)

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
Soils	Very high, high and medium	Temporary impacts to soil function and disruption to soil ecosystem services	Moderate to minor adverse	Significant	None – impact is temporary and soils will be reinstated / re-used by the end of the construction phase	Moderate to minor adverse	Significant
BMV agricultural land	Very high and high	Temporary loss of BMV land	Moderate to minor adverse	Significant	None – impact is temporary and BMV land required temporarily will be reinstated by the end of the construction phase	Minor adverse	Not Significant
		Permanent loss of BMV land	Major to moderate adverse	Significant	None	Major to moderate adverse	Significant

Table 6.16 Summary of residual agriculture and soil effects (Operation and Maintenance)

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
Soils	Very high, high and medium	Temporary impacts to soil function and disruption to soil ecosystem services	Minor adverse	Not significant	None	Minor adverse	Not significant
BMV agricultural land	Very high and high	Temporary loss of BMV land	Minor adverse	Not significant	None	Minor adverse	Not significant

Table 6.17 Summary of residual agriculture and soil effects (Decommissioning)

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
Soils	Very high, high and medium	Temporary impacts to soil function and disruption to soil ecosystem services	Moderate to minor adverse	Significant	None – impact is temporary and soils will be reinstated / re-used by the end of the construction phase	Moderate to Minor adverse	Significant
	Very high, high and medium	Reinstatement of soils in areas where	Major to moderate beneficial	Significant	None	Major to moderate beneficial	Significant

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
		infrastructure has been decommissioned (should this be undertaken)					
BMV agricultural land	Very high and high	Temporary loss of BMV land	Moderate to minor adverse	Significant	None – impact is temporary and BMV land required temporarily will be reinstated / re-used by the end of the decomissioning phase	Minor adverse	Not Significant
	Very high and high	Permanent reinstatement of BMV land	Moderate to major beneficial	Significant	None	Moderate to major beneficial	Significant

6.11.2 Impacts on agriculture and soil receptors result from the temporary disturbance of soils and temporary removal of BMV land from agricultural production, and from the permanent land take required for the Proposed Project's infrastructure.

6.11.3 Whilst the temporary effects during construction are significant, the majority of the land required would be reinstated to the pre-construction condition by the end of the construction phase in accordance with the measures set out in **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice**. In addition, soil resources from the footprint of the permanent infrastructure would be re-used within the Proposed Project where practicable, enabling an associated range of soil functions to continue.

6.11.4 The permanent loss of BMV land during construction would be a significant effect. There would, however, be no significant effects during the operation and maintenance phase as associated works are likely to be small-scale and short-term.

6.11.5 The effects during decommissioning would be similar to those identified during the construction phase. However, the decommissioning would allow for the reinstatement of the land within the footprint of the decommissioned infrastructure, which would be a significant beneficial effect.

6.12 Sensitivity Testing

6.12.1 The baseline is not considered likely to change in the short-term and as such it is not considered that a delay of up to five years for construction to commence would have an impact on the assessment presented in this chapter.

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