Steeple Renewables Project

Chapter 15: Land Use and Agriculture

Environmental Statement – Volume 1

~~April 2025~~March 2026

Document Reference: EN010163/APP/6.2.15

Revision: 2~~1~~

Planning Act 2008

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

Chapter 15: Land Use and Agriculture

Document Properties		
Prepared By	The Steeple Renewables Project Consultant Team	
Version History		
Version	**Date**	**Version Status**
Application Version	April 2025	Rev 1
Revision and Update	11 March 2026	Rev 2

Table of Contents:

List of Tables:

List of Figures:

15. Land Use and Agriculture

15.1 Introduction

15.1.1 This Chapter of the Environmental Statement (ES) assesses the likely significant effects of the Proposed Development on agricultural land and land use. The assessment encompasses the potential effects on agricultural land as a resource, on soils as a resource, and on land-based rural businesses as an economic activity and for the products they provide in terms of food, non-food produce and environmental benefits.

15.1.2 The agricultural assessment has been undertaken by Kernon Countryside Consultants Ltd (KCC) and the Agricultural Land Classification (ALC) has been undertaken by Roberts Environmental Ltd (REL).

15.1.3 This Chapter is supported by the following figures (embedded into this Chapter):

- **Figure 15.1 Provisional ALC**
- **Figure 15.2 Likelihood of BMV**
- **Figure 15.3 Extract from the Likelihood of BMV Agricultural Land Quality Maps**
- **Figure 15.4 Distribution of ALC**
- **Figure 15.5 Location of Photographs**
- **Figure 15.6 Plan of Occupation**
- **Figure 15.7 and 15.8 Substation and Extract from ALC Plan**
- **Figure 15.9 Location of Photos of Enhancement Areas**
- **Figure 15.10 Tenancy/Ownership Identification**

15.1.4 The Chapter is supported by the following appendices:

- **Appendix 15.1 Agricultural Land Classification (ALC) EN010163/APP/6.3.15]**
- **Appendix 15.2 Outline Soil Management Plan (oSMP) [EN010163/APP/6.3.15]**

15.2 Legislation and Planning Policy

15.2.1 In relation to proposed developments for renewable energy, the key National Policy Statements (NPS) to refer to include NPS EN-1 (Overarching National Policy Statement)[1] and EN-3 (National Policy Statement for Renewable Energy Infrastructure)[2]. NPS EN-3 notes that, whilst land type should not be a predominating factor in determining the suitability of the Site location, where the use of agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land, avoiding the use of Best and Most Versatile (BMV) land where possible (2.10.~~29~~21). Such land is defined as land in grades 1, 2 and 3a of the Agricultural Land Classification (ALC).

15.2.2 Paragraph 2.10.~~145~~ 137 advises that the Secretary of State should take into account the economic and other benefits of BMV agricultural land. The Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to minimise the impacts on soils.

15.2.3 Paragraph 187 of the National Planning Policy Framework (NPPF)[3] sets out that planning decisions should recognise the economic and other benefits of BMV land. In plan-making, paragraph 188 and Footnote 65 set out that, where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred, which equates to ALC Grade 3b, 4 and 5.

15.2.4 The value of soil as a finite resource is recognised in the Department for Environment, Food and Rural Affairs' document '*Safeguarding our Soils: A Strategy for England*'[4] which seeks to encourage more sustainable and careful management of soil resources. This was also emphasised in the UK Government's White Paper '*The Natural Choice: securing the value of nature*'[5] and the assessment of the value weighted towards the soil as a resource is outlined the Institute of Sustainability and Environmental Professionals (ISEP, formally Institute of Environmental Management and Assessment (IEMA)) guidance document[6].

[1] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1)
[2] Department for Energy Security & Net Zero (2023) National Policy Statement for Renewable Energy Infrastructure (EN-3).
[3] Ministry of Housing, Communities and Local Government (2024) National Planning Policy Framework.
[4] Department for Environment, Food and Rural Affairs (2009) Safeguarding our Soils: A Strategy for England.
[5] HM Government (2011) The Natural Choice: Securing the Value of Nature.
[6] Institute of ~~Environmental Management and Assessment~~Sustainability and Environmental Professionals (ISEP) (2022) A New Perspective on Land and Soil in Environmental Impact Assessment.

15.2.5 The sustainable use and protection of soil resources is outlined in the guidance document '*Construction Code of Practice for the Sustainable Use of Soils on Construction Sites*'[7] which encourages the consideration and protection of soil resources on site during the use and movement of soils throughout the full construction process. In addition, the guidance document from the Institute of Quarrying[8] refers the need to produce a Soil Resource and Management Plan to outline appropriate procedures and machinery to use during the construction phase of the Proposed Development and that in the case of BMV land, the land shall be restored to its former capability, ie ALC Grade, at the end of the operational phase of the development.

15.2.6 The Bassetlaw District Council Local Plan[9], policy ST49: *Renewable Energy Generation* states that renewable energy schemes will be supported in cases where the development has considered the location with reference to the best and most versatile agricultural land in the locality.

15.3 Assessment Methodology

15.3.1 The methodology follows that set out in **Appendix 1.1 Steeple Renewables Project EIA Scoping Report [EN010163/APP/6.3.1]** and the Statutory Consultation Chapter for Land Use and Agriculture, modified in response to consultations, and is set out below. The key receptors considered in this chapter are:

- agricultural land (as measured under the ALC);
- soils (as a resource);
- agricultural and land-based rural businesses.

Agricultural land

15.3.2 Agricultural land quality is measured by the Agricultural Land Classification (ALC) system. This is a methodology devised by the Ministry of Agriculture, Fisheries and Food (MAFF) in the 1970s. It is described in Natural England's (NE) Technical Information Note TIN049[10]. The classification considers the long-term physical limitations of land for agricultural use, especially the climate, site and soil

[7] Department for Environment, Food and Rural Affairs (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
[8] The Institute of Quarrying (2021) Good Practice Guide of Handling Soils in Mineral Workings
[9] Bassetlaw District Council (2024) Bassetlaw Local Plan 2020-2038
[10] Natural England Technical Information Note TIN049 "Protecting the Best and Most Versatile agricultural land", edition 2 (2012)

characteristics, and the important interactions between them. The methodology was last revised by MAFF in 1988[11], but the methodology was updated in December 2025[12], but this has not altered the basic methodology and the ALC results remain correct.~~.~~

15.3.3 To determine land quality it is necessary for a competent soil consultant to examine soils usually on a regular 100m grid (thereby eliminating potential bias in sampling) down to, where possible, 1.2m depth using a soil auger, with periodic digging of pits to better describe soil profiles and measure stoniness.

15.3.4 The sampling records the soil type and texture, colour, the depth of any slowly permeable layer and the presence of mottles and their colour, stoniness, the depth of soil horizons etc. Each sample point is then assessed against the climatic variables for the area and an ALC grade is then determined. These grade points are plotted and a soil surveyor then uses professional judgement to estimate the distribution and patterns of ALC by grade, plotting this on a plan and then measuring the areas. The ALC methodology sets out that, where soils vary over short distances, a "pattern limitation" is said to exist. In mapping ALC distribution, therefore, occasionally individual points are mapped into the predominating grade when producing the ALC plan.

15.3.5 The detailed ALC has been completed in full accord with the ALC Guidelines. The ALC is reproduced at **Appendix 15.1- Agricultural Land Classification [EN010163/APP/6.3.15].**

Soils

15.3.6 Soil type is recorded as part of the ALC at each auger sample point, including soil depth, stoniness etc. The soil information has been used in this assessment to inform the appropriate assessment of potential impacts. Clayey soils are most susceptible to structural damage if handled when wet or saturated because of their small particle size, whereas sandy soils are generally more resilient to being worked.

15.3.7 The soil survey has informed the outline Soil Management Plan (oSMP), which is at **Appendix 15.2- Outline Soil Management Plan [EN010163/APP/6.3.15].**

[11] Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land, MAFF (1988)
[12] Department for the Environment, Food and Rural Affairs (2025), Agricultural Land Classification of England and Wales: Guidelines for grading the quality of agricultural land

Farm and Economic Impacts

15.3.8 The effects on farm businesses and on the wider land-based rural economy have been assessed based on information gathered from discussions with landowners and occupiers and a walk-over survey of the farmland within the Site.

15.3.9 Farming enterprises are prone to change. Sometimes change can be rapid, such as the spike in fertiliser prices following the invasion of Ukraine, or the UK Government's recent sudden closure of the Sustainable Farming Incentive to new entrants. For this reason the assessment of farm impacts has endeavoured to take a longer-term view of the type of farming operation likely to be operated, rather than a detailed snapshot at the time of assessment.

~~15.3.9~~15.3.10 In updating the Chapter regard has also been given to the ISEP document [13]"Solar PV on Agricultural Land: Essential Components of Environmental Assessments and Reports", December 2025.

Assessment of Significance

~~15.3.10~~15.3.11 The significance of effects is based on a combination of the magnitude of a particular impact and the sensitivity of the receptor to change. Accordingly a large magnitude impact on a receptor that is of low sensitivity may not be significant in Environmental Impact Assessment terms, whereas a smaller magnitude impact on a receptor that is of high sensitivity may be significant.

~~15.3.11~~15.3.12 All land of BMV quality is placed in the "high" sensitivity category. Such land, as set out in Natural England's TIN049 (10, ibid) accounts for an estimated 42% of agricultural land in England. Subgrade 3b "moderate quality" land is considered to be of medium sensitivity, and land of Grades 4 "poor" and 5 "very poor" is considered to be of low sensitivity.

~~15.3.12~~15.3.13 The ~~IEMA~~ ISEP Guide[14] provides an assessment of the sensitivity of soils to being damaged by physical works. The sensitivity is based on soil type in different climatic regions, with high clay soils where the Field Capacity Days exceeds 150 being of high sensitivity. The ~~IEMA~~ ISEP Guide has been followed and a soil assessment is included in this assessment.

[13] Institute of Sustainability and Environmental Professionals (2025) " Solar PV on Agricultural Land: Essential Components of Environmental Assessments and Reports

[14] Institute ~~of Environmental Management and Assessment (IEMA)~~of Sustainability and Environmental Professionals (ISEP) Guide "A New Perspective on Land and Soil in Environmental Impact Assessment" (2022)

~~15.3.13~~15.3.14As set out in the ALC Report (**Appendix 15.1, [EN010163/APP/6.3.15]**) the Field Capacity Days (FCD) for the purposes of ALC in the area is approximately 111 days per year. These are the days when soils are replete with water, ie saturated. Under the ~~IEMA~~ ISEP Guide no soils in this climatic area are therefore in the high sensitivity category.

~~15.3.14~~15.3.15The ISEP~~IEMA~~ Guide does not provide sensitivity definitions for farm businesses, although effects are described in paragraph 8.3.3 of the ~~IEMA~~ ISEP Guide. The criteria in Tables 15.1 to 15.2 are based on professional judgement. The methodology considers farm businesses to be generally resilient to change. Farm businesses are continually adapting to changes, such as from weather, commodity prices, availability of labour, Government requirements and incentives. Consequently no farms are considered to be of high sensitivity to change.

Sensitivity of Receptor

~~15.3.15~~15.3.16The sensitivity of receptors will be measured as set out in Table 15.1 below.

Table 15.1 -Methodology for Determining Receptor Sensitivity

Sensitivity	ALC/biomass production	Sensitivity of topsoil and subsoil	Agricultural businesses
High	Land of ALC Grades 1, 2 and subgrade 3a	No soils are of high sensitivity in this climatic area.	No farm businesses are considered to be of high sensitivity.
Medium	Land of ALC Subgrade 3b	High clay soils where the FCD* is <150, or medium textured soils where the FCD is <225	Full-time businesses, and farm businesses where the location of land is particularly important such as dairy farms.
Low	Land of ALC Grades 4 and 5	Soils with a high sand fraction where the FCD is <225	Part-time farms or farms with low sensitivity to change, e.g. arable land held in short-term arrangements.
Negligible	Land of ALC Grades 4 and 5 with only indirect links	No soils are of low sensitivity	Agricultural land that is not farmed or does not form part of a farm business.

*Field Capacity Days: Days When the Soil is Replete with Water

Magnitude of Impact

~~15.3.16~~15.3.17National policy advises that while land type should not be a predominating factor, land of lower ALC grade (non-BMV) should be preferred where possible. The change of use of BMV land to solar development does have implications on the ability to farm the land for arable uses, however these effects are not considered to

be a permanent loss of land within a wider agricultural use. While the land is temporarily taken out of arable rotation, the impact on the land is low. Solar projects typically involve minimal ground disturbance and can provide a valuable break from intensive agricultural practices associated with arable rotation.

~~15.3.17~~15.3.18 This 'fallow' (resting) period allows the soil to recover from the constant cultivation, chemical inputs, and compaction associated with modern farming practices. As a result, over the course of the operational life of the Proposed Development (up to a maximum of 40 years) evidence would suggest that soil health indicators, e.g., organic matter content, soil nutrients, worm count, would improve under grassland, increasing its resilience and capacity for future agricultural use.

~~15.3.18~~15.3.19 The magnitude of impacts on agricultural land and soils will be assessed as per the methodology set out in Table 15.2. The determination of "loss" will draw on the definition in the ~~IEMA~~ ISEP Guide (6, ibid). This defines "loss" for assessing magnitude as "*permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading)*". It identifies that "*temporary developments can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils*". As noted in Table 15.2, ~~IEMA~~ ISEP define "*temporary, reversible loss of soil related features*" as a Low magnitude of impact.

~~15.3.19~~15.3.20 The ~~IEMA~~ ISEP Guide does not provide magnitude definitions for farm businesses. The methodology in Table 15.2 sets out that only farms that will be terminated are considered to experience a major adverse impact, with most changes either moderate or minor. There can be benefits for farms as a consequence of the proposals, so impacts are both adverse and beneficial.

Table 15.2- Methodology for Determining Magnitude of Change

Magnitude of Impact	Definition	
	Effects on Agricultural Land (Soils)	**Effects on Farm Businesses (agricultural businesses)**
High	The Proposed Development would directly lead to the loss (including permanent sealing or land quality downgrading) of over 20 hectares of soil-	The impact of development would render a full-time agricultural business non-viable.

Magnitude of Impact	Definition	
	Effects on Agricultural Land (Soils)	Effects on Farm Businesses (agricultural businesses)
	related features; or potential for improvement in one or more soil functions over an area of more than 20 ha.	
Medium	The Proposed Development would directly lead to the loss (including permanent sealing or land quality downgrading) over an area of between 5 and 20 hectares of soil-related features; or potential for improvement in one or more soil functions over an area of between 5 ha and 20 ha.	The impact of the development would require significant changes in the day-to-day management of a full-time agricultural business, or closure of a part-time agricultural business. Loss of buildings or impacts on drainage or water supplies affecting the potential for at least 5 ha of adjacent land to be farmed fully.
Low	The Proposed Development would directly lead to the loss (including permanent sealing or land quality downgrading) of less than 5 hectares of soil-related functions; or potential for improvement in one or more soil functions over an area of less than 5 ha; or temporary, reversible loss of soil-related features.	Land take would require only minor changes in the day-to-day management / structure of a full-time agricultural business or land take would have a significant effect on a part-time business. Minor effects, direct or indirect, on surrounding land beyond the boundaries of the Site.
Negligible	No discernible loss or reduction or improvement of soil functions or volumes.	Land take would require only negligible changes in the day-to-day management of a full-time agricultural business or land take would require only

Magnitude of Impact	Definition	
	Effects on Agricultural Land (Soils)	Effects on Farm Businesses (agricultural businesses)
		minor changes to a part-time farm business.

~~15.3.20~~15.3.21Temporary impacts are defined in ~~IEMA~~ ISEP as of low magnitude. Accordingly, all temporary impacts are given no higher than minor magnitude impacts.

Significance

~~15.3.21~~15.3.22The assessment of the significance of effects will be determined based on the matrix in Table 15.3 below. Typically, effects that are identified as being Major or Moderate are considered to be significant in terms of the EIA Regulations, although the assessment of this would be informed by professional judgement.

~~15.3.22~~15.3.23Effects can be adverse or beneficial. In the assessment the impacts are considered to be of national, regional or local significance. Land of BMV quality is considered a receptor of national significance, whereas soils and farm businesses, being more common and more resilient, are considered to be local significance.

~~15.3.23~~15.3.24Impacts can also be temporary or permanent. The ~~IEMA~~ ISEP Guide identifies temporary effects as of low magnitude. There is no timescale provided. All temporary impacts are therefore of low magnitude. The reversibility of an impact influences the significance of an effect.

~~15.3.24~~15.3.25The assessment of significance is set out in Table 15.3. Those effects stated as of Major or Moderate significance are significant in EA terms.

Table 15.3 - Methodology for Determining Significance

		Sensitivity of Receptor / Receiving Environment to Change / Impact			
		High	Medium	Low	Negligible
Magnitude of Impact	High	Major	Moderate	Minor	Negligible
	Medium	Moderate	Minor	Minor	Negligible
	Low	Minor	Minor	Negligible	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

15.4 Assessment Assumptions and Limitations

15.4.1 There are no significant limitations to the assessment.

15.5 Stakeholder Engagement

15.5.1 Table 15.4 sets out a summary of comments received as part of the statutory consultation of the Preliminary Environmental Information Report (PEIR), and how those have been addressed in this Chapter.

Table 15.4- PINS Comments and Responses to the Scoping Opinion and Statutory Consultation

Consultee and Date	Summary of Consultee Response	How the Comment is Addressed
RESPONSES TO SCOPING REPORT		
PINS Response to Scoping Report Paragraphs 16.2.1 – 16.2.4	The Applicant should ensure that the survey has sufficient coverage across the Proposed Development including the cable route to accurately inform the assessment in line with relevant guidance and/or standards.	This chapter at section 15.6 and in the accompanying **Appendix 15.1- Agricultural Land Classification [EN010163/APP/6.3.15]** set out the results of surveys by qualified and experienced soils scientists.
	The ES should also show regard to the quantity and quality of land that will be temporarily and permanently lost to the Proposed Development and the potential for cumulative impacts at a regional scale with other plans and projects that result in a reduction of available BMV land.	These have been quantified and qualified and are set out in sections 15.7 and 15.10.
	The ES should demonstrate that the mitigation hierarchy has been fully applied, to show that options have been considered to avoid or minimise loss of BMV land and maximise use of poorer quality agricultural land.	Sections 15.6 to 15.8 address this matter.
	The ES should also show the approach to construction, and to decommissioning, and a commitment to applying the relevant codes of practice in relation to soil handling.	Section 15.8 and **Appendix 15.2- Outline Soil Management Plan [EN010163/APP/6.3.15]** outline how appropriate soil handling techniques have been embedded into the works.
Paragraph 16.3.1	The ES should explain the benefits of grazing sheep at the operational Site and what impacts this may have when considered against the existing land use.	This is covered in section 15.7.
Paragraph 16.3.2	The ES should describe the construction, operation and decommissioning activities and how infrastructure has been located to avoid/minimise impacts of ground disturbance on soil and BMV land.	This is addressed in sections 15.7 to 15.9.

Consultee and Date	Summary of Consultee Response	How the Comment is Addressed
RESPONSES TO SCOPING REPORT		
Section 16.5	Cumulative economic impacts of the Proposed Development alongside other similar NSIP schemes should be considered.	Addressed in section 15.10.
Paragraph 16.6.1	The ES should include an assessment of the effects on soil resources and soil structure.	Soil is assessed as a resource separate to land quality throughout the chapter. There is a separate outline Soil Management Plan, **Appendix 15.2- Outline Soil Management Plan [EN010163/APP/6.3.15].**
RESPONSES TO PEIR (STATUTORY CONSULATION)		
Natural England (3rd March 2025)	Natural England [NE] advise that a full ALC survey should be undertaken of all land within the full order limits, including the cable route and enhancement areas. This is to understand the baseline conditions to inform soil handling practices and minimise potential damage	Land in the Cable Route Corridor (CRC) is not affected, and so has not been surveyed, as described in the Chapter, section 15.7. As described in section 15.7, no physical works will take place in the enhancement areas.
Natural England (3rd March 2025)	NE advise that avoidance of BMV land for any temporary sealing should be the goal	As described in section 15.7, BMV use is minimised.
Natural England (3rd March 2025)	NE advise that intrusive land use change may affect the potential for land to retain its BMV status	Noted and addressed in this Chapter, especially section 15.7.
Natural England (3rd March 2025)	NE advise that the breakdown of land take for all elements of the development should be set out	Provided in section 15.7 of this Chapter.

Consultee and Date	Summary of Consultee Response	How the Comment is Addressed
RESPONSES TO SCOPING REPORT		
Natural England (3rd March 2025)	The SMP should cover all soils and should detail the involvement of a suitably qualified soil specialist during construction, operation and decommissioning	This is in the **Appendix 15.2- Outline Soil Management Plan [EN010163/APP/6.3.15]**
North and South Wheatley Parish Council	The Parish Council expresses concern that land under and around the panels is likely to become very hard and unable to absorb water, increasing flood risk.	This is addressed in section 15.7 of this Chapter
North Leverton with Habblesthorpe Parish Council	Express concern about the loss of land for food production and the potential for sheep grazing.	This is addressed in section 15.7 of this Chapter.
West Lindsey District Council	Express a need to consider the cumulative impact with other consented or in-process schemes, and to protect BMV agricultural Land	This is addressed in section 15.7 of this Chapter.

15.6 Baseline Conditions

Site Description and Context

15.6.1 The Site mostly comprises agricultural land in farming use. To accord with the assessment methodology the baseline conditions are described in terms of:

- Agricultural land quality;
- Soils and soil type;
- Local agricultural circumstances.

Agricultural Land Quality

15.6.2 Agricultural land quality is measured under the ALC. The ALC system was devised by MAFF and land quality was first plotted out at a scale of one inch to one mile, between 1967 and 1974. The maps preceded the subdivision of Grade 3. These maps are out of print, but a 1:250,000 scale map is available for strategic purposes. This map was digitised in 2017.

15.6.3 The ALC methodology was amended in 1988 but the 1:250,000 ALC maps were not updated. They are, therefore, to be used only cautiously and they cannot be used for site specific assessment. These limitations are described in Natural England's Technical Information Note 049 (2012) (10, ibid).

15.6.4 The wider area around the Site is shown on Figure 15.1. This shows that most of the Site is shown as undifferentiated Grade 3, with Grade 4 land in the proximity of the River Trent north of Littleborough. The provisional ALC map also shows that undifferentiated Grade 3 is the predominant grade in the wider area too. Given the scale of the map it is not possible to show the boundaries of the Site, but the Site lies within the area identified. This shows that most of the Site is shown as undifferentiated Grade 3, with Grade 4 land in the proximity of the River Trent north of Littleborough. The provisional ALC map also shows that undifferentiated Grade 3 is the predominant grade in the wider area too. Given the scale of the map it is not possible to show the boundaries of the Site, but the Site lies within the area identified.

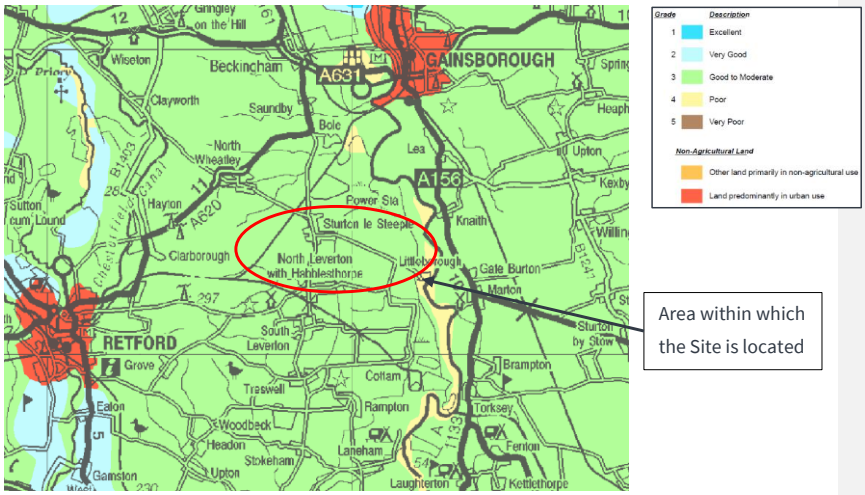

Figure 15.1 – Provisional ALC

15.6.5 In 2017 Natural England produced a series of maps, also at 1:250,000 scale, which divide England into three categories according to the likelihood of land being of BMV quality. The highest category estimates that 60% or more of land in an area will be BMV, and the lowest category estimates that less than 20% of land in an area will be BMV.

15.6.6 Figure 15.2 - Likelihood of BMV map shows that about half the Site, being all the land east of Sturton le Steeple, falls into the "low likelihood of BMV", which is the lowest category. The land west of Sturton le Steeple falls into the moderate likelihood, anticipating 20 – 60% of the area to be of BMV quality.

15.6.7 The surrounding area mostly falls into the moderate Likelihood of BMV. Figure 15.2 shows that broadly half the Site is in the lowest likelihood area on published information.

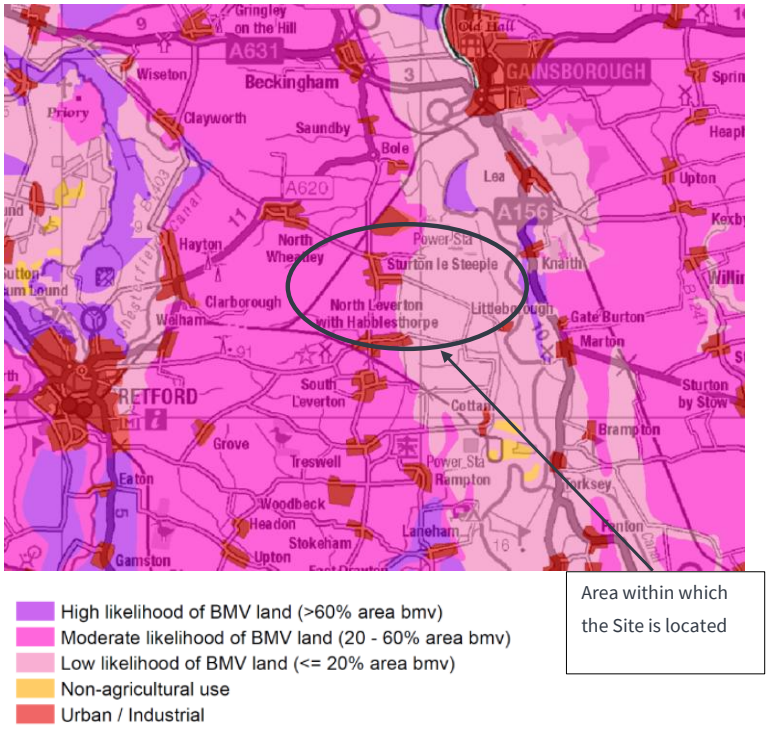

Figure 15.2 - Likelihood of BMV

15.6.8 The wider context is show on Figure 15.3. The great majority of the wider area west of the River Trent is of moderate or high likelihood of BMV. Land of low likelihood, including about half of the Site, is shown bordering the River Trent. The following extract shows the Likelihood of BMV for an area of approximately 30 km north and south, east and west of the Cottam grid connection.

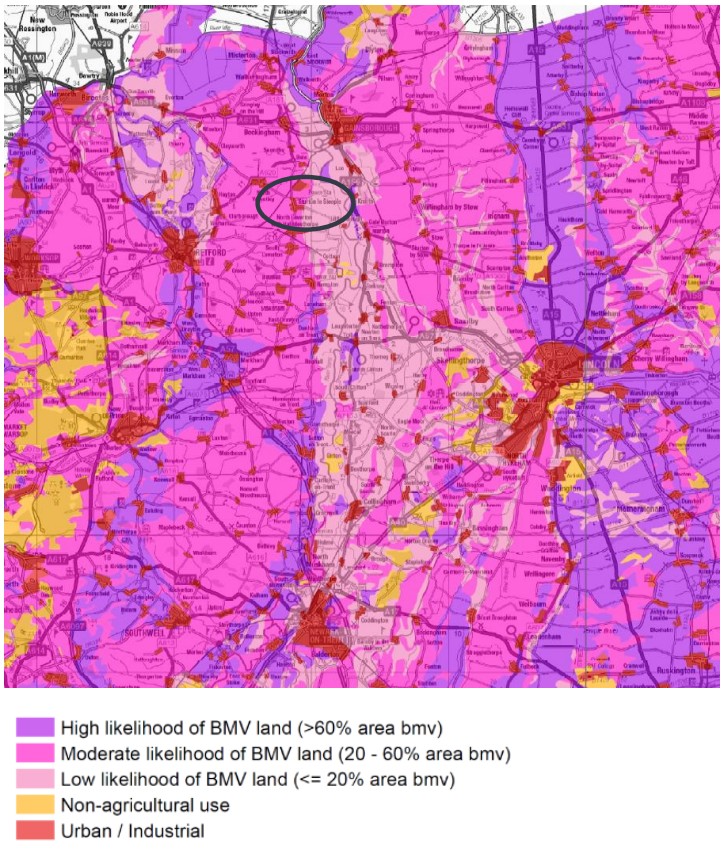

Figure 15.3- Extract from Likelihood of BMV Agricultural Land Quality Maps

15.6.9 The provisional and Likelihood of BMV maps do not enable assessment of the land quality of a particular area. Accordingly an ALC survey has been undertaken, by REL. They undertook a total of 794 auger samples across the site, on a regular grid and at a sampling density of approximately one per hectare.

15.6.10 As described in the ALC report (**Appendix 15.1, [EN010163/APP/6.3.15]**) the climate across the areas surveyed provides no limitation to ALC grade. This means that, in the absence of any other limiting factor, the land quality is not limited.

15.6.11 There were no site limitations identified in the ALC, such as gradient or flood risk, that would result in a land quality limitation.

15.6.12 Therefore the ALC grading is determined by the interactions of soil type in this climatic area.

15.6.13 Across the Site the ALC survey results are as set out in Table 15.5. These are rounded to the nearest whole hectare. The ALC survey covered 722 ha. This is a larger area than that proposed for solar PV modules, which is 467 ha. The Grade 2 includes a copse of 2.4 ha, although this is included in the mapped area. It is separated for accuracy in the table.

Table 15.5- ALC Results (rounded to nearest whole hectare)

ALC Grade	Description	Area (ha)	Proportion (%)
1	Excellent	56	7.7
2	Very good	152	21.0
3a	Good	430	59.6
3b	Moderate	82	11.4
4	Poor	0	0
5	Very poor	0	0
NA	Non-agricultural	2	0.3
Total		**722**	**100.0**

15.6.14 The ALC distribution is shown on Figure 15.4. An A3 plan is included in **Appendix 15.1- Agricultural Land Classification [EN010163/APP/6.3.15]**.

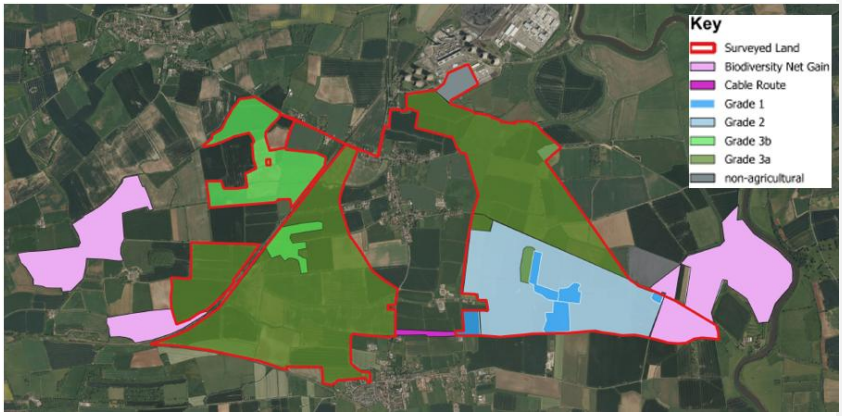

Figure 15.4 - Distribution of ALC

15.6.15 Viewed from the ground the differences in land quality are not readily evident. The Site is generally level, with gentle undulations in the western part. Figure 15.5 shows the location of photographs 1 to 4 which are representative of views across the different land quality areas.

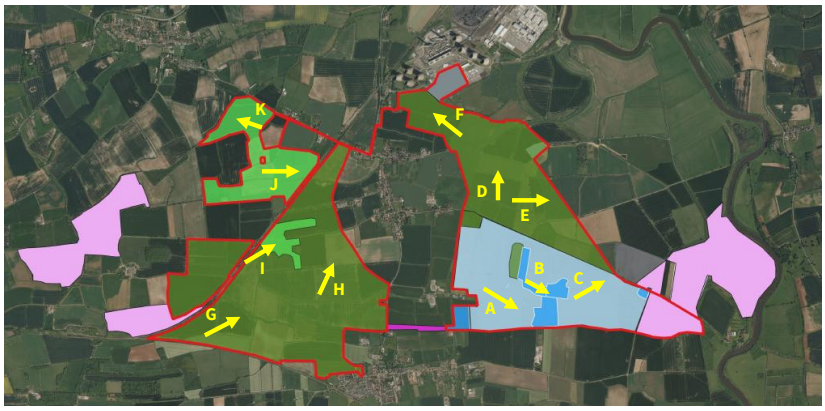

Figure 15.5- Location of Photographs

15.6.16 The Grade 1 and 2 land is level, and is all used for cereals and combineable break crops, as shown in the following photos.

Photo 15.1: View A - Looking southeast over Grade 2 land

Photo 15.2: View B - Looking southeast over Grade 1 land

Photo 15.3: View C - Looking northeast over Grade 2 towards copse

15.6.17 Subgrade 3a land makes up the majority of the Site. Examples of Subgrade 3a land in the eastern part of the Site are shown below.

Photo 15.4: View D - Looking north over Subgrade 3a

Photo 15.5: View E - Looking east over Subgrade 3a

Photo 15.6: View F - Looking northwest towards proposed substation area

15.6.18 The land to the west of Sturton le Steeple is a mixture of mostly Subgrade 3a with some Subgrade 3b. The Subgrade 3a land is shown in Photos G and H.

Photo 15.7: View G - Looking northeast

Photo 15.8: View H - Looking north

15.6.19 Photo I shows Subgrade 3a land with Subgrade 3b further beyond. Part of the Subgrade 3a is in agri-environmental uses.

Photo 15.9: View I - Looking northeast over Subgrade 3a and 3b land

15.6.20 The land to the northwest is all Subgrade 3b. It is shown below.

Photo 15.10: View J - Looking east over Subgrade 3b

Photo 15.11: View K - Looking west over Subgrade 3b

15.6.21 Despite the differences in ALC grade it is clear that the land topography and land use is similar.

Soils

15.6.22 As part of the ALC survey the soils were examined. The survey identified four main soil types across the Site, described in Table 15.6.

Table 15.6- Description of Soils Types

Soil Type	Description
1	Comprised mainly heavy silty clay loam topsoil to typically 20cm with subangular blocky structure. Subsoil was regularly observed as silty clay with a coarse prismatic, defining the Slowly Permeable Layer at 20cm depth. These profiles were assessed as Wetness Class III and are predominantly limited in their agricultural capability by wetness, resulting in ALC Grade 3b for this Soil Type.
2	Typically identified as heavy clay loam topsoil to an average depth of 42cm with subangular blocky structure. Subsoil was typically observed as a coarse prismatic clay, resulting a Slowly Permeable Layer assessed at 42cm. This profile was assessed as Wetness Class II and was limited to ALC Grade 3a due to soil wetness limitations.
3	Soil Type 3 was identified with variable characteristics, but typically having a heavy silty clay loam topsoil of an average 34cm thickness and a subangular blocky structure. The initial subsoil was identified as a subangular blocky clay, which further developed into a well-drained fine sand of single grain structure at 90cm. Soil Type 3 was determined to be well drained (Wetness Class I) which resulted in ALC Grade 2 due to both droughtiness and wetness limitations on this soil type.
4	Typically encountered as a freely draining fine sandy silt loam topsoil of average 39cm thickness, underlain by a fine sand of single grain structure. This soil type was defined as well drained (Wetness Class I) with no limitations relating to the soil physical characteristics.

Farm Businesses

15.6.23 There are seven principal farming occupations within the Site, some occupying several blocks of land. The blocks of land are illustrated on Figure 15.6 Each is given a different colour. These are mostly occupied on a rented basis.

15.6.24 The holdings are described by farm name.

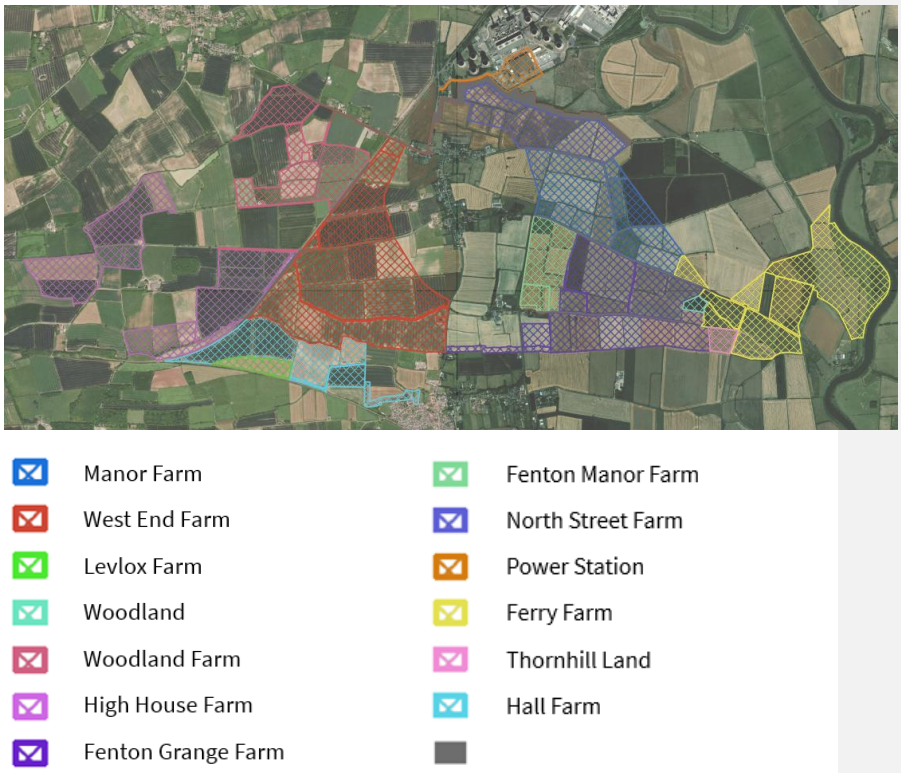

Figure 15.6- Plan of Occupation

15.6.25 The land included in the Site forms part of these holdings. High House Farm is a mixed livestock and arable farm, and Levlox Farm is a dairy farm but the land within the Site is not grazed. As described in section 15.7, some of the land within the Site is for environmental mitigation and will continue to be farmed.

15.6.26 The majority of the land within the Site is arable land. This is all used for combineable crops, maize or agri-environmental land uses.

15.6.27 A summary of each of the farm businesses is provided in Table 15.7. This provides baseline data on farm size, tenure and farming enterprises. This table was updated in March 2026.

Table 15.7 - Summary of Farms Affected

Farm	Description
Manor Farm Woodland Farm	Woodland Farm is a secure Agricultural Holdings Act (AHA) tenanted farm of 156 ha. Manor Farm is a Farm Business Tenancy (FBT) holding of 226 ha. The farm rents 32 ha nearby on a short-term arrangement, and owns circa 4 ha of arable land. The farm has recently been reduced in scale with 89 ha having been taken back for other solar development, and 48 ha having been taken back or being taken back from harvest 2025 for quarry development. The farm operates an arable rotation of combineable arable crops, with two farmyards. It is a full-time holding run by the tenants.
Fenton Manor Farm Fenton Grange Farm North Street Farm	The tenancies of Fenton Manor Farm and North Street Farm are FBTs expiring in 2027. The tenancy of Fenton Grange Farm is an FBT fixed to 2050. In addition the farmers own 40 ha of arable land near Gringley. They also rent circa 40 ha on a short-term arrangement near to the new quarry. In total, therefore, the farm currently extends to 436 ha. The farm is all in an arable rotation of wheat, barley and oilseed rape, run as a full-time unit with family labour. The farm recently handed back 87 ha for the quarry. The farm is based on Grange and Manor Farms.
High House Farm	High House Farm is a rented holding of 204 ha held on a secure AHA tenancy. In addition the farmers rent 28 ha on non-secure grazing/mowing arrangements nearby. Currently the farm also rents the cattle sheds at North Street Farm, but these are being taken back by the landlords. The farm operates a breeding and rearing cattle unit, with 120 sucklers rearing all offspring to finished. The farm has grazing land, mowing land and arable land, the latter used to feed cattle and produce straw for their livestock unit. It is a family run holding.
Levlox Farm	Levlox Farm extends to 158 ha, of which 93 ha is owned in multiple parcels around the area. The farm operates a dairy unit milking 140 cows and rearing followers. The farm grows

	wheat and maize, the latter for silage, and grows grassland for silage. The land within the Site is a block of 9 ha of owned land, used as grassland for producing silage. The land is detached from the farm yard and the access is under a narrow railway bridge, which significantly impedes farm traffic.
Hall Farm	The land within the Site is part of a block of 73 ha, of which circa 60 ha is within the Site. The land is arable land, plus there is a farm building of limited use (currently used mostly for storing straw). The land has been owned since the 1970s and forms an offlying parcel being part of a substantial 570 ha arable farm based near Rotherham. In addition the farm contracts or contract farms over a further 2,200 ha. The land within the Site is used for a rotation of feed wheat, field beans and oilseed rape, or the land is let for others to grow maize.
Ferry Farm Thornhill Land	Ferry Farm and the land at Thornhill extend in total to about 196 ha. The majority of this, Ferry Farm, is occupied on a secure AHA tenancy, but which is being surrendered at harvest 2026. The land at Thornhill extends only to 5.2 ha and is on a short-term arrangement. The land is used for arable cropping, farmed on a contract farming/share farming basis, with the contractors providing the principal labour.
West End Farm	West End Farm is a 297 ha holding occupied on a secure AHA tenancy, but which is being surrendered at harvest 2026. It is run as an arable unit, mostly in winter cereals, on a shared arrangement with other farmers, and therefore forms a non-secure part of a larger farming enterprise, so far as is known. There are no buildings within the Site.

No Development Scenario

15.6.28 It is anticipated that there would be no change to the baseline in the future should the Proposed Development be not granted. Cropping choices and agri-environmental scheme uptake may vary but agricultural use is expected to continue.

15.7 Assessment of Likely Significant Effects

Construction Phase

15.7.1 The Proposed Development's construction phase effects have been considered in terms of the area of Solar PV modules, Construction Compounds, Access Tracks, Onsite Substation Compound, BESS Compound, the Cable Route Corridor, and wildlife sites or enhanced Ecological Mitigation Areas. These areas are defined on **Figure 2.1 – Indicative Site Layout [EN010163/APP/6.4.15].**

Solar PV Modules

15.7.2 The process of installing Solar PV Modules involves marking out the grid on the ground and laying out the piles. This stage is non-intrusive and should take place when soils are suitably dry. A tractor and trailer will be used to transport the piles to the fields, then each pile is lifted off by hand.

15.7.3 The piles are driven into the ground pneumatically. This is a swift process and has little impact on the soil because the piles are inserted into the soil with no removal of soil and the soil is simply pushed aside by the pile. An example of this construction activity is shown in Photo 15.12, which shows the installation of piles into a clay soil.

Photo 15.12: Framework Posts Being Installed (photographs all by Kernon Countryside Consultants)

15.7.4 The design of the PV module varies between sites, but the framework posts are all similar. The limited impact of installing the piles on the underlying land is illustrated in Photo 15.13. The purpose of the photograph is to show that there is little disturbance to the soils. The design above ground does not affect soils and the

design may therefore vary from the example. The purpose of the photograph is to show the minimal disturbance caused by the piles as they enter the ground and the minimal effects of construction traffic.

Photo 15.13: Framework Posts being Installed (taken at Tiln Farm, Retford, in January 2023)

15.7.5 There is minimal damage caused by the next stage of the construction process, the assembling of the framework and the bolting-on of panels, if carried out in dry conditions. This stage requires vehicles to drive across the land carrying the framework and panels, which are bolted together by hand.

Photo 15.14: Example of Minimal Ground Disturbance Following Panel Assembly

(note: this photo shows a much lower design than proposed but that does not affect vehicle trafficking)

15.7.6 For the Proposed Development, it will be necessary to connect electrical cables between the solar PV modules and to run the cables to the on-site substation. This will involve trenches, dug with a machine. The trench width will depend upon the

size of cable. In accordance with the **oSMP** (see **Appendix 15.2, [EN010163/APP/6.3.15]**), in all cases the work involves removing the topsoil and placing it to one side of the trench. The subsoil is then removed and placed on the other side of the trench. Once the cable has been inserted the subsoil is then replaced, with the topsoil put back on the top. No long-term storage of excavated soils is required. This approach is used to ensure that soils are restored and settle within days, and return to grass growth rapidly, or are suitable for being sown when conditions are right (usually spring or autumn).

15.7.7 Overall, the Proposed Development's Solar PV module installation will result in a temporary, and therefore low magnitude effect on soils. The soils are a mixture of clayey and sandy soils, as described in Table 15.5. Such soils are of medium or low sensitivity, and a low magnitude impact will result in an effect of **minor or negligible significance**. The effect on agricultural land quality is also a low magnitude impact, as the effect is temporary, and the effect on resources of high or medium sensitivity will result in an effect of **minor significance**. The impact on soils and agricultural land is therefore **not significant**.

Construction Compounds

15.7.8 Construction compounds are temporary areas, and will be fully restored at the end of the construction phase (some may then be used for solar PV), see **Chapter 4: Proposed Development [EN010163/APP/6.2.4]**. The works usually involve stripping topsoil in suitable conditions which is stored temporarily in a bund. A membrane is normally then added, and an aggregate surface placed on the matting, as shown in Photo 15.15. On restoration the process is reversed, and the topsoil is replaced. Works will be undertaken under the guidance of the Soil Management Plan, and will give full attention to Defra's Construction Code of Practice[15] and the soil suitability criteria in the Institute of Quarrying Good Practice Guide[16]. As described in Chapter 4: **Proposed Development [EN010163/APP/6.2.4]**, two primary and three secondary construction compounds are intended. The works are temporary and therefore of low magnitude, on resources of medium or high

[15] Department for Environment, Food and Rural Affairs (2009), Construction Code of Practice for the Sustainable Use of Soils on Construction Sites
[16] The Institute of Quarrying (2021) Good Practice Guide for Handling Soils in Mineral Workings

sensitivity. The works will therefore result in **minor** effects, which are **not significant**.

Photo 15.15: Newly Installed Construction Compound

Access Tracks

15.7.9 Access tracks are usually constructed in a similar manner to construction compounds, although increasingly consideration is being given to above-ground installation methods not involving the removal of topsoil. Topsoil, usually to 30cm, is stripped off and placed in a bund to one side. This soil is then available for replacement in the same place on decommissioning. A matting is placed over the subsoil, and stone added. On decommissioning, the process is reversed. The works are temporary and therefore of low magnitude. The land quality is of high or medium sensitivity, and the soils are of medium or low sensitivity. The works will therefore result in **minor** effects on agricultural land, and minor or negligible effects on soils. These effects are **not significant**.

The On-Site 400KV Substation and BESS Compound

15.7.10 The 400 kV substation and BESS compound are proposed at the northern end of the Order Limits. The construction of these areas will involve removal of topsoil and, in places, subsoil to create bases and cable connection areas. It will be necessary to store soil for the duration of the operational phase, and to store any subsoil removed separately to the topsoil. The topsoil in this area is all similar, and this will enable soils to be stored together. The details of the storage will need to be set out as part of the Soil Management Plan. This area is Subgrade 3a, as shown below.

Figure 15.7 -- Onsite Substation and BESS Compound Extract from Figure 2.1 – Indicative Site Layout [EN010163/APP/6.4.1]

Figure 15.8- Onsite Substation and BESS Compound Extract from Figure 15.4 – Distribution of ALC

15.7.11 The proposed location for the BESS is shown below, looking northwest towards the BESS area.

Photo 15.16: Proposed site for BESS

15.7.12 The area for the substation and compound basin extends to 1.4 ha, and for the BESS and related basin the area is 1.9 ha, a total of 3.3 ha of BMV. This is a low magnitude impact on a resource of high sensitivity, which would be a **minor adverse** effect, which is **not significant**. If the area can be successfully restored on decommissioning, which is the intended outcome, the effect would remain **minor adverse** or would fall to negligible which is **not significant.**

Green Infrastructure

15.7.13 ~~None of the~~The ecological mitigation areas do not require~~s~~ the soils to be disturbed (beyond ordinary cultivation and management), and accordingly ~~none of the green infrastructure is~~are not considered likely to have any construction effects on land quality or soils. ~~The comments of NE have been noted, but~~ ALC of these areas is not required as the land will not be disturbed and consequently land quality will not be affected. Consequently there can be no negative effect on soils, or land quality, so the existing land quality is not relevant to the assessment.

15.7.14 The enhancement areas are shown on the following photographs.

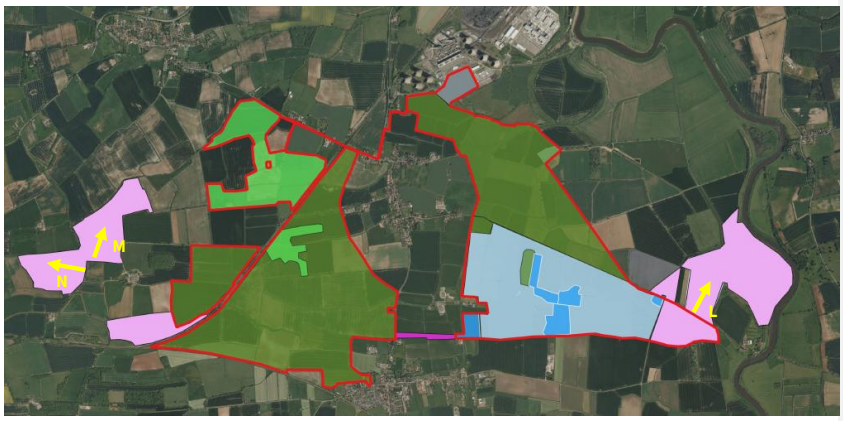

Figure 15.9- Location of Photographs of Enhancement Areas

15.7.15 The eastern area enhancement areas are shown below.

Photo 15.17: View L: Looking northeast over enhancement area

15.7.16 The western enhancement areas, including for skylark mitigation, are shown below.

Photos 15.18 and 15.19: Views M and N: Western enhancement areas, looking north and west

15.7.17 ~~The ALC of these areas has not been recorded. They will remain in farming use.~~There are areas of planting shown around the on-site substation and BESS, as identified in the Insert at Figure 15.7. These areas of planting will not involve any disturbance to the soil on planting, and the vegetation will be removed on decommissioning. These areas are, therefore, temporary impacts.

15.7.18 Additional areas of planting, and a small number of ponds, are proposed as shown on the inserts at 15.10. These areas will be handed-back to the landowners on decommissioning with no control retained by the Applicants as to whether they are to be retained or not. As such they could be considered a temporary use of land, but they may be kept permanently. In either case the soil resource will not be affected. The assessment considers these on a temporary and permanent basis.

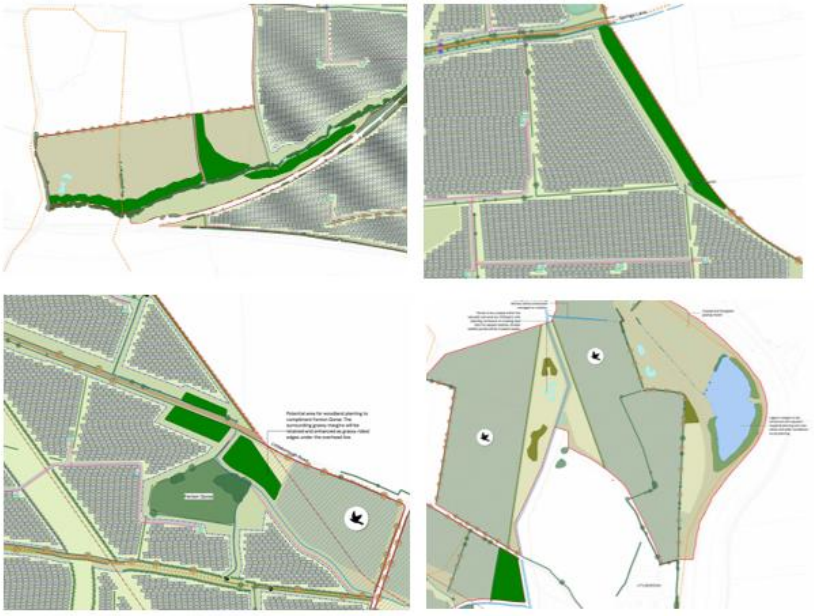

Figure 15.10: Inserts Identifying Plant and Pond Areas (scales vary)

~~15.7.17~~ ~~The land quality of some of these areas is not known. At the eastern end the land is shown on the provisional ALC as Grade 4 (as shown on Figure 15.1)~~

~~Table 15.8:~~

~~Description~~	~~Area Involved~~	~~ALC Grade~~
~~Ponds (eastern and western)~~	~~c 1 ha~~	~~BMV and non BMV expected~~
~~Scrub planting (eastern end)~~	~~1 – 2 ha~~	~~Likely non BMV~~
~~Wooded planting~~	~~12.1 ha~~	~~Mostly BMV~~
~~**Total**~~	~~**14-15 ha**~~	~~**Mostly BMV**~~

~~15.7.18~~ ~~The original assessment did not include these areas because, based on the ISEP Guide definition of loss, they were not considered to represent a loss. The definition is "permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading)". It was not considered that tree planting resulted in a loss of soil function (it would still be producing~~

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~~biomass) or volume. Natural England have expressed the view, however, that it may be impractical to achieve the same ALC grade if the trees are removed.~~

~~15.7.19 **Appendix 15.2 – Outline Soil Management Plan** covers the undertaking of a soil survey and ALC plan of these areas, if not already surveyed, pre-construction. This will provide the information for future restoration of these areas, although only in the case of the ponds (c 1 ha in total) will any soil have been moved.~~

~~15.7.20 In a worst-case scenario, the permanent loss for ponds of c 1 ha of agricultural land (likely mostly non-BMV) and the potentially permanent downgrading of circa 12.1 ha of mostly BMV land for woodland planting, would be a medium magnitude impact, on land of high sensitivity, which would result in an effect of **moderate significance**. Taking this worst-case assessment the effect is therefore **significant.**~~

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15.7.22 In a worst-case scenario, the permanent loss for ponds of c 1 ha of agricultural land (likely mostly non-BMV) and the potentially permanent downgrading of circa 12.1 ha of mostly BMV land for woodland planting, would be a medium magnitude impact, on land of high sensitivity, which would result in an effect of **moderate significance**. Taking this worst-case assessment the effect is therefore **significant.**

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Cable Route Corridor

~~15.7.21~~15.7.23The connecting cable between the southern parcels will be a temporary work along the field edge. The land quality is all expected to be BMV. The works will be short-term and temporary, and land quality will not be lost. The soils will be checked pre-construction and the information will be contained within the Soil Management Plan, to be controlled under the DCO.

Summary of Potential Effects to Soil Quality and Availability of BMV Agricultural Land on areas with Proposed Development Components

~~15.7.22~~15.7.24There will be temporary disturbance of soils, and land quality, in the areas in which the construction compounds are erected. These areas are, however, short-term (construction period only) and are therefore not measured for the assessment. These areas will be installed in line with best practice, secured through the detailed SMP, to ensure there are no significant effects to land quality or to soils during that time, and will be remediated, if required, after removal of compounds.

~~15.7.23~~15.7.25Areas affected during construction, that will continue to be affected for the operational phase involve the agricultural land required for construction of the base areas for fixed equipment (in particular power conversion unit systems), the internal access tracks, and the BESS compound. These areas are estimated in Table 15.8.

Table 15.~~8~~9 - Estimate of Land Affected by Fixed Equipment

Component of development	Area (rounded to nearest 0.1 ha)
BESS compound and basins	1.9
Substation compound and basins	1.4
Power conversion unit systems hardstandings	0.9

Tracks	8.5
Basins (western parcel)	0.5
Total	13.2

~~15.7.24~~15.7.26By ALC grade, the areas of fixed equipment are divided approximately as shown in Table 15.9.

Table 15.~~10~~9 Temporary Land Use by ALC Grade

	Areas in ha by ALC Grade				
Component	**Grade 1**	**Grade 2**	**Subgrade 3a**	**Subgrade 3b**	**Total**
Tracks	0.2	1.9	5.4	1.0	8.5
Power conversion unit systems hardstandings	<0.1	0.2	0.6	0.1	0.9
On-site substation and BESS compound	0	0	3.3	0	3.3
Basins	0	0	0.5	0	0.5
Totals	0.2	2.1	9.8	1.1	13.2

~~15.7.25~~15.7.27These areas are all capable of being restored at the decommissioning phase of the Proposed Development. The works require the removal of topsoil, its storage in suitable conditions, and its replacement following the removal of the fixed equipment. None of the fixed equipment requires deep foundations, and mostly only topsoil requires to be stripped off and stored. There is extensive advice available, for example in the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra (2009). The reinstatement to comparable soil properties and land grade would be undertaken in accordance with a Soil

Management Plan secured through the DCO, with regard to the measures stated within **Appendix 15.2- Outline Soil Management Plan [EN010163/APP/6.3.15]** . Therefore, the works are considered to be temporary.

~~15.7.26~~15.7.28The **oSMP** (see **Appendix 15.2, [EN010163/APP/6.3.15]**), sets out the principles, but the appropriate controls will be provided through a detailed SMP delivered through DCO requirement. With the exception of the Onsite Substation Compound and BESS, the other works involve small areas and soil will be stored close to the area from where it was moved, so that the same soil can be returned. There is an effect that takes place during construction. The effect continues throughout the operational phase, because these areas will not be in agricultural use and topsoil will have been removed, but there will be no permanent loss. The impact is therefore temporary (low magnitude) as works do not involve the "*permanent, irreversible loss … (including permanent sealing or land quality downgrading)*" as defined as "*loss*" in the ~~IEMA~~ ISEP Guide.

~~15.7.27~~15.7.29Consequently, the Proposed Development will result in temporary disturbance of approximately 12.1 ha of BMV agricultural land. This land will not be lost, in that it is all capable of restoration to a comparable grade at the decommissioning phase. The magnitude of impact is therefore low, on a resource of high sensitivity, resulting in a **minor adverse** effect, which is **not significant**.

~~15.7.28~~ Temporary, reversible losses of soil related features (including biomass production) are low magnitude of impact changes in the ~~IEMA~~ ISEP Guide (Table 14.2). Low magnitude impacts on resources of medium or low sensitivity equate to effects of **minor or negligible** adverse significance (Table 15.4). The overall impact is therefore **minor or negligible** adverse, which is **not significant**. All of these areas are capable of full restoration back to the current status.

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~~The use of 12.1 ha for woodland planting, plus 1-2 ha for scrub and ponds, would on the worst-case assessment above (assuming there is ALC downgrading and assuming all areas are BMV), be a **moderate adverse** effect, which would be **significant**.~~

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~~15.7.29~~15.7.30The use of 12.1 ha for woodland planting, plus 1-2 ha for scrub and ponds, would on the worst-case assessment above (assuming there is ALC downgrading

and assuming all areas are BMV), be a **moderate adverse** effect, which would be **significant**.

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Effects on Farm Businesses

~~15.7.30~~15.7.31Effects on the occupying farm businesses will commence and change during the construction phase.

~~15.7.31~~15.7.32Construction activity will be carefully controlled so that the use of the local highway network is not significantly affected, so travel between farmyards and agricultural land in the area will continue unhindered. There are no internal tracks within the area of the Proposed Development that serve other farmland, so the Proposed Development will not impact any existing accesses. The effects on farm businesses are considered in the operational phase. The construction effects are negligible on resources of low sensitivity, so the effect is **negligible** which is **not significant**.

Summary of Construction Phase Effects

~~15.7.32~~15.7.33In respect of direct effects during construction, it is concluded as follows:

- **Best and Most Versatile and Other Agricultural Land:** the installation of Solar PV Panels will not result in any sealing or irreversible downgrading of agricultural land quality. Whilst there is high quality land within the Site, the land will not be lost, and the ALC grade will not be affected. Therefore there will be no loss of ALC grade land. The effect is therefore temporary. The magnitude of impact is therefore low on resources of high (BMV) or medium (Subgrade 3b) sensitivity, resulting in an effect of **minor** adverse significance, which is **not significant**.
- **Soils:** the effect on soils from the installation of the Solar PV Panels is minor or negligible. The installation process will not irreversibly damage soils, which are a mix of medium and low sensitivity. Any adverse effects will be short-term and capable of easy restoration. The magnitude of impact is therefore low. The effect of construction on soils is **minor or negligible** adverse (**not significant**);
- **Farm Businesses:** there will be no indirect effects on surrounding land, or farms, during construction. The magnitude of impact is low on businesses of low sensitivity. The effect is therefore **negligible adverse** (**not significant**).

Operational Phase

~~15.7.33~~15.7.34The assessment of the Proposed Development's operational phase effects is based on the Proposed Development as outlined in **Chapter 4 – Proposed Development [EN010163/APP/6.2.4]** .

~~15.7.34~~15.7.35The potential effects during the operational phase of the Proposed Development are:

- effects on agricultural land quality;
- effects on soils from long-term grassland uses and the effects from site maintenance activities;
- effects on the operation of the farm businesses and local agricultural labour needs;
- food production implications. This is generally an economic/ land use consideration; and
- the economic and other considerations of the use of BMV agricultural land, as required in NPS EN-3.

Agricultural Land Quality

~~15.7.35~~15.7.36There will be no further disturbance to agricultural land during the operational phase of the Proposed Development; therefore, the agricultural land quality at the Site will not be affected during this phase of the Proposed Development.

~~15.7.36~~15.7.37There will be no requirement for heavy machinery to traffic soils during the operational phase. Accordingly, there will be no disturbance of soils affecting land quality. The combination of increasing organic matter levels and lack of machinery activity will allow a natural enhancement of the soil, as assessed in section 15.7.32 et seq. This will not, however, alter the ALC grade of land within the Site.

~~15.7.37~~15.7.38Maintenance and cleaning machinery will be transported via a van or small tractor, and is generally lighter than standard agricultural machinery. If the soils are wet when access is taken, there is the potential for slight indentations to be made (such as those shown in photograph 15.21 below for a development similar in nature to the Proposed Development), but such effects on soils are not significant and will not alter ALC grade. Typically, the machinery such as the following is used,

which is no heavier than a small tractor. Cleaning takes place in late spring, to clean the panels before the main solar generation period, when soils are normally dry.

Photo 15.20: Cleaning of Solar Modules

~~15.7.38~~15.7.39There may occasionally be small rutting caused by agricultural vehicles (for example quads) or vans used by engineers. Typical light impacts are illustrated below. These will normally be levelled by grazing sheep, but if there are deeper ruts they could be repaired by a lightweight roller in the spring.

Photo 15.21: Example of Minor Ruts Caused by Vehicles

~~15.7.39~~15.7.40There may be occasional need for works of repair which might disturb soils. These will be infrequent. If possible, any works requiring soils to be moved should be timed for the summer period, following the guidance in the oSMP **(Appendix**

15.2, [EN010163/APP/6.3.15]). Any trenching, whether carried out in ideal conditions or not, looks unsightly initially, but rapidly recovers and is indistinguishable once grass cover has returned. These effects will be of negligible magnitude.

Photo 15.22: Trench During Wet Period

~~15.7.40~~15.7.41Therefore there are no physical works required during the operational phase which will adversely affect agricultural land quality. The effects are of negligible magnitude on receptors of high and medium sensitivity, and accordingly of **negligible significance**, which is **not significant**.

Effect on Soils

~~15.7.41~~15.7.42There will be potential for benefits to soil health and quality.

~~15.7.42~~15.7.43The land is currently mostly arable land fertilised with inorganic fertiliser, as well as spread with farmyard manure and liquid slurry. Grass is not generally grown in rotation currently and organic matter levels within the soil will be generally low.

~~15.7.43~~15.7.44The land will be sown to grassland and managed, including by being grazed with sheep, for the duration of the operational phase. This is expected to have a positive benefit for the soils.

~~15.7.44~~15.7.45There will be no requirement for heavy machinery to traffic soils during the operational phase. Accordingly, there will be no compacting of soils and the

combination of increasing organic matter levels and lack of machinery activity will allow a natural enhancement of the soil.

~~15.7.45~~15.7.46Water run-off from panels will reach all the ground under the panels. Panels come in sections and water drains down between these sections. Soils will not be harmed during the operational phase due to lack of moisture. This can be seen in the following photographs, where gaps between panels can be seen and grass growth below the panels is good. This should assuage the concerns of North and South Wheatley Parish Council that land will become very hard and unable to absorb water below the panels.

Photo 15.23: Panels Array Showing Gaps Between Panels

Photo 15.24: Grass Growth Below and Between Arrays

~~15.7.46~~15.7.47There is therefore the potential for improvements in one or more soil functions over an area of in excess of 20 ha. This would be across the majority of the Site, including on soils of mostly medium sensitivity (Table 15.1) but including areas of

sandy and coarse loam (low sensitivity in ~~IEMA~~ISEP[17] Table 4). The effect, however, would be temporary in that a resumption of arable use may reverse the benefit. The effect will therefore be a low magnitude impact, resulting in a **minor or negligible beneficial** effect (Table 15.3), which is **not significant**.

Farm Business Implications

~~15.7.47~~15.7.48Some of the farm businesses will be significantly affected by the operational phase of the Proposed Development. Negotiations are currently underway between landlords and tenants~~, and t~~. The following analysis is correct at mid-March 2026 ~~may therefore require updating in due course~~.

~~15.7.48~~15.7.49The plan below repeats, for ease of reference, the farm holdings within the Site.

[17] ~~Institute of Environmental Management and Assessment (IEMA) (February 2022). Guide: a new perspective on land and soil in Environmental Impact Assessment~~ Institute of Sustainability and Environmental Professional (ISEP) Guide "A New Perspective on Land and Soil in Environmental Impact Assessment" (2022)

Figure 15.~~10~~11 - Tenancy/Ownership Identification

~~15.7.49~~15.7.50These effects on the farms are described in table 15.10 below. With the exception of High House Farm and Levlox Farm, these are arable holdings. Whilst some grassland and agri-environmental land is included within the Site, the great majority of land is arable land. All of the farms are full-time units, and all fall into the low sensitivity category as defined in Table 15.1.

Table 15.~~10~~11 - Summary of Farms Affected and Effects

Farm	Description of Effects
Manor Farm Woodland Farm	The holding has experienced significant change in recent years, losing 89 ha to solar and having taken on the rental of Manor Farm, some of which is being taken for quarrying. The farm,

	from September 2025, will extend to 418 ha (1,032 acres) of arable land and is accordingly a full-time unit. The Proposed Development will remove 69 ha of secure AHA land and 94 ha of 15 year FBT land, reducing the farm by 39% to 255 ha (630 acres). This will result in a significant change to day-to-day operations. There will be no impact on farm buildings. The holding will remain a full-time arable unit.
Fenton Manor Farm Fenton Grange Farm North Street Farm	The holding was reduced by 89 ha in 2024 and will experience a further significant reduction as a result of the Proposed Development. The Proposed Development will reduce the farmed area by 221 ha (48%) and will result in significant changes to the day-to-day management. Of this, however, some 83 ha is on a rental arrangement that expires in two years, time. The holding will remain a unit of under 250 ha which for an arable farm is borderline full/part time.
High House Farm	The Proposed Development includes 127 ha, some 62% of the secure holding. Much of the land included within the Site is for environmental land management reasons, and some of this may be available for the current farmers (eg skylark mitigation areas). If all of the land is removed from the tenancy the impact will be 62% of the secure land and 55% of the whole farm. The impact will be significant. The current beef unit will either need to reduce significantly or will be reliant upon purchased-in feed. A workable holding will remain, but the current farm operations will be significantly adversely affected.
Levlox Farm	The impact of the reduction of 9 ha from the farm will be limited. The land is offlying and does not grow good crops or grass. It is awkward to access and forage harvesters access via a neighbour's land on a goodwill basis. The farm will benefit from the secure income as a result of the Proposed Development.
Hall Farm	The impact of the Proposed Development on this holding will be limited. The Site will reduce the farm by just over 10% but the land is about 18 miles from the main farm base. The

	remnant c13 ha will be let to others to farm. The land is owned and the farmers will benefit from the rental income.
Ferry Farm Thornhill Land	The Site includes 135 ha of AHA land and all the 5 ha of land at Thornhill. The securely-rented land will reduce by 71%, which will have a significant effect on day-to-day operations. The land is farmed, physically, by others ~~and there will as a consequence be only a medium magnitude impact on the current tenant.~~ The tenancy is being surrendered at harvest 2026, so the impact will reduce to low impact.
West End Farm	The Site will reduce the AHA tenanted unit by 59%, leaving a holding of 121 ha. This would only be a part-time farm. The impact is not, however, significant because ~~it is understood that~~ the land is occupied on a non-secure farming arrangement as part of a much larger holding, and the tenancy is being surrendered at harvest 2026. ~~t~~The impact on which will be ~~limited (medium magnitude) due to the nature of occupation~~low imapct.

~~15.7.50~~15.7.51The proportion of each holding included in the Proposed Development is set out in Table 15.11 below.

Table 15.~~11~~12- Collective Areas of Farmed Land with Land Within the Site

Farm	Hectarage	Land Take (ha)	Land Take (%)
Manor Farm Woodland Farm	418	163	39
Fenton Manor Farm Fenton Grange Farm North Street Farm	436	221	48
High House Farm	232	127	55
Levlox Farm	158	9	7

Hall Farm	570	60	11
Ferry Farm Thornhill Land	197	140	71
West End Farm	297	176	59

~~15.7.51~~15.7.52Based on the proportionate effects identified in Table 15.11 coupled with the description of the effects in Table 15.10, it is concluded that the magnitude, sensitivity and significance of the effects on farm holdings within the Site will be as set out in Table 15.12.

Table 15.~~12~~ 13 - Magnitude, Sensitivity and Significance Effects on Farm Holdings

Holding	Sensitivity	Magnitude	Significance
Manor Farm Woodland Farm	Low	Medium	Minor adverse
Fenton Manor Farm Fenton Grange Farm North Street Farm	Low	Medium	Minor adverse
High House Farm	Medium	High	Moderate adverse
Levlox Farm	Low	Low	Minor adverse
Hall Farm	Low	Low	Negligible
Ferry Farm Thornhill Land	Low	~~Medium~~Low	Minor adverse
West End Farm	Low	~~Medium~~Low	Minor adverse

~~15.7.52~~15.7.53The areas identified in Figure 15.10 as within the Proposed Development will not wholly be lost to farming use, however. These areas will be grazed with sheep

and their management could remain under the control of the current farmers. Whether they choose to manage the sheep themselves, or let others manage the sheep, the farming enterprises may not be reduced in size. Inevitably, however, the enterprise mix will change.

~~15.7.53~~15.7.54The impact of the Proposed Development will be a high magnitude for one farm (rendering a viable farm part-time). It will be a high magnitude effect on a farm of medium sensitivity, because it is a breeding cattle holding and access to grazing is important. The effect, without mitigation, will be a high magnitude impact on a farm of medium sensitivity, leading to a **moderate adverse** effect, which is **significant**.

~~15.7.54~~15.7.55The impact will be a medium magnitude impact (requiring significant changes in the day-to-day operations) for four of the holdings, where 40% or more of the tenanted land will be taken for the Proposed Development. These farms are arable farms and consequently of low sensitivity. The effect, therefore, will be a **minor adverse** effect, which is **not significant**.

~~15.7.55~~15.7.56For the two owner occupied holdings, the impact will be of low magnitude. Low magnitude impacts on farms of low sensitivity will result in effects that are of **negligible** significance, which is **not significant**.

Food Production and Economic Implications

~~15.7.56~~15.7.57There is no specific Government policy for producing food from agricultural land. The use of land for food production is referenced in the WMS (15th May 2024) and therefore is included in this assessment. This notes that climate change represents the biggest threat to food security.

~~15.7.57~~15.7.58The use of land for “agriculture”, which is defined in the Town and Country Planning Act 1990 (s336), is not “development” (as defined in s55 (2) (e)). Planning consent is not required to use land for agriculture, or to change between any different agricultural enterprises.

~~15.7.58~~15.7.59The definition allows a wide range of agricultural uses. Some relate to food production, others do not. There is no requirement to use land for food production, or to use it for any particular intensity of use. It follows that a landowner can do what they wish with their land within the definition of agriculture. For example, the

landowner could rewild and graze it at a low intensity, or graze it with horses, or plant short-rotation coppice, or plant ancillary woodland, or fallow it. Food production is not an obligation.

~~15.7.59~~15.7.60The Government Food Strategy (June 2022)[18] does not seek to increase food production. The "Foreword" recognises near self-sufficiency in wheat, most meat, eggs and some vegetables, but not in soft fruit although the trend is favourable. But the strategy does not seek to alter that in the main commodities. The Strategy states: *'Overall, for the foods that we can produce in the UK, we produce around 75% of what we consume. That has been broadly stable for the past 20 years and in this food strategy we commit to keep it at broadly the same level in future'.*

~~15.7.60~~15.7.61In respect of the crops that can be grown, the UK is self-sufficient or near self-sufficient in cereals, oilseeds, other non-vegetable arable crops, milk and sheep meat. The UK produced approximately 20 million tonnes of cereals and oilseeds in 2024, for example[19]. A Government Statement at the end of 2022[20] confirmed that there are no food security concerns at the present time. The Food Security Report 2024[21] identified a small increase from 74% in 2021 in self-sufficiency of products we can grow in the UK.

~~15.7.61~~15.7.62The temporary use of 722 ha, of which 639 ha is of BMV and of which 467 is to be used for the Solar PV areas, should be seen in context. In England there is an estimated 1.85 million hectares of Grades 1 and 2, and a further 1.85m ha of Subgrade 3a. The land quality in the area is generally high (see Figures 15.2 and 15.3 embedded above). The land will be restored fully on decommissioning

~~15.7.62~~15.7.63The Utilised Agricultural Area of England is 8.7 million hectares, of which about 3.7 million ha is BMV. The figures for the Nottinghamshire Council area, derived from the MAFF Provisional maps (and therefore for strategic decision making rather than individual applications) are shown below. If the national statistic is applied, 40% of Grade 3 will be Subgrade 3a. The figure for BMV land is shown. The analysis identifies that the national proportion of BMV is 41.3%, whereas in Nottinghamshire

[18] Government Food Strategy, Defra (13 June 2022)
[19] Department of Environment, Food and Rural Affairs (7 January 2025) Cereal and Oilseed Production in the United Kingdom 2024
[20] Food Supply and Food Security, Defra (9 December 2023)
[21] United Kingdom Food Security Report 2024: Theme 2, UK Food Supply Sources, Defra (11 December 2024)

County it is just over 50% and in Bassetlaw it is 51.7%. The assumption that only 40% of Grade 3 is Subgrade 3a at a local level may well be an under-estimate, such that the proportion of BMV could be higher.

Table 15.~~13~~14 - Proportion of Land by ALC Grade

ALC Grade	England		Nottinghamshire		Bassetlaw	
	Ha	%	Ha	%	Ha	%
1 Excellent	354,562	3.1	554	0.3	554	0.9
2 Very good	1,848,874	16.2	37,908	20.7	12,010	20.5
3 Good to moderate	6,290,210	55.0	133,638	73.1	44,506	75.8
4 Poor	1,839,581	16.1	10,719	5.9	1,666	2.8
5 Very poor	1,100,305	9.6	0	0	0	0
Total	11,433,532	100.0	182,819	100.0	58,736	100.0
BMV Estimate[(1)]	-	41.3	-	50.2	-	51.7

[(1)] Grades 1, 2 and 40% of Grade 3

~~15.7.63~~15.7.64 The 888 ha within the Site (including the enhancement areas which will still be farmed) accounts for approximately 1.5% of agricultural land within Bassetlaw, and 0.5% of the agricultural land within Nottinghamshire. This is, therefore, a small proportion of the available agricultural land.

~~15.7.64~~15.7.65 NPS EN-3 and the NPPF (2025) advise that the economic and other considerations of the use of BMV land should be considered.

~~15.7.65~~15.7.66 To assess the economic benefits of BMV land, one methodology is to compare the economics of BMV land to poorer quality land, assuming that such land is used for solar panels as an alternative. There is no statistical data that provides yields or

economic performance of BMV compared to non-BMV land. Accordingly, only an assessment based on professional judgement is possible, assuming that BMV land falls into the "high" performance, and non-BMV land falls into the "average" performance, in agricultural budget books. On this basis, the incremental increase in food production if BMV land is used is shown below. This assumes a wheat, barley and oilseed rape production.

Table 15.~~14~~15- Crop Production Budgets

Crop	Average Yield	High Yield	Difference
Winter feed wheat	8.3 t/ha	9.5 t/ha	1.2 t/ha
Winter feed barley	7.3 t/ha	8.4 t/ha	1.1 t/ha
Winter oilseed rape	3.5 t/ha	4.0 t/ha	0.5 t/ha

Nix Pocketbook for Farm Management 54th Edition[22]

~~15.7.66~~15.7.67Across the BMV agricultural land within the Site this would, if the area was all used for food production, have the following implications for cereal/ oilseed production. This assumes 100% wheat, being the worst-case (ie largest) effect.

Table 15.~~15~~16- Difference in Production (assuming total area 639ha and all wheat cropping)

Crop	Change in Yield	Area (ha)	Change (t)
Winter feed wheat	1.2 t/ha	639	767

~~15.7.67~~15.7.68If the biodiversity areas are assumed to be of BMV quality, adding 166 ha to the total, the incremental impact of using BMV would be 805 ha x 1.2t/ha, equalling 966 tonnes.

~~15.7.68~~15.7.69The use of agricultural land for the deployment of Solar PV modules is assumed to be accepted. Consequently the assessment focuses not on the absolute production, but on the incremental production were poorer quality land to be used

[22] John Nix Pocketbook for Farm Management, The Andersons Centre (September 2023)

elsewhere rather than the BMV land within the site. On that measure the incremental reduction in production should the Proposed Development be moved to poorer quality land elsewhere would be under 1,000 tonnes of wheat.

~~15.7.69~~15.7.70The implications for food production are limited. Indeed, because the output is mostly destined for animal feed or industrial use, the increased use of land for growing sheep, the meat from which will directly go to human food, will be a benefit.

~~15.7.70~~15.7.71The reduction in production of circa 960 tonnes of cereals can be compared to the UK cereal production in 2024 of just under 20 million tonnes.

~~15.7.71~~15.7.72There will be benefits for the local labour market, because sheep production requires greater labour input than arable farming. The Pocketbook for Farm Management[23] estimates of labour required for cereals and lowland sheep production are compared in Table 15.16 below. This shows that sheep production requires more labour per hectare than cereals. Therefore, overall agricultural labour needs will not reduce.

Table 15.17 ~~16~~ - Labour Estimates

Crop	Hours/ha/year
Winter cereals, including hauling straw	12.5
Sheep – 4 hours per ewe at 6 ewes/ha	24

~~15.7.72~~15.7.73In respect of food production, the impact is temporary and of low magnitude. A low magnitude impact on a resource of low sensitivity (arable production) results in an effect of **negligible** significance, which is **not significant**. In respect of the local agricultural economy, the impact is beneficial, but at a negligible scale. A negligible benefit on a low sensitivity resource is overall a **negligible** effect, which is **not significant**.

Summary of Operational Phase Effects

~~15.7.73~~15.7.74Therefore it can be concluded that in respect of operational effects:

[23] John Nix Pocketbook for Farm Management 2025, The Andersons Centre (September 2024)

1) There will be no further effects on agricultural land quality, therefore no change which is a **negligible** significance effect, which is **not significant**;

2) There will be a benefit on soil health and its carbon-holding benefits, but this is a temporary low magnitude benefit on resources of medium or low sensitivity, resulting in an effect which will be **minor or negligible beneficial**, which is **not significant**;

3) The effects on occupying farm businesses are mostly of medium or low magnitude, on holdings of low sensitivity, leading to overall effects of **minor or negligible** significance, which is **not significant**. One farm business will, without mitigation, experience a **moderate adverse** effect, which is **significant**;

4) The impacts on food production and the wider local agricultural economy are of negligible magnitude, on low sensitivity resources, and overall therefore of **negligible** significance, which is **not significant**.

Decommissioning Phase

~~15.7.74~~15.7.75 The decommissioning phase will not have any significant effects on agricultural land or soils, nor on farm businesses.

~~15.7.75~~15.7.76 Measures to mitigate potential effects to land and soil quality will be secured through the final SMP and final Decommissioning Management Plan, broadly in line with the **oSMP (Appendix 15.2, [EN010163/APP/6.3.15]**) and the **oDP** (**Appendix 4.2, [EN010163/APP/6.3.4]**).

~~15.7.76~~15.7.77 Fixed infrastructure and cables will be removed, with the methodology for removing cables involving removing topsoil to one pile, subsoil to another, removing the cable then reinstalling the soils. Shallower cables will be dug up with the trenches dug and restored in the same order, in a manner similar to the installation process as described in the **oSMP (Appendix 15.2, [EN010163/APP/6.3.15]**).

~~15.7.77~~15.7.78 The soils across the Solar PV module area will then be loosened with normal agricultural machinery, and returned to the farmers in a condition suitable for continued agricultural use.

~~15.7.78~~15.7.79Once the Solar PV modules have been removed the bases for the infrastructure can be removed. This will involve removing the crushed stone bases and matting, loosening the soil to remove compaction, then returning topsoil to the areas. The topsoil will then be worked with normal agricultural machinery to create a tilth suitable for return to the landowner.

~~15.7.79~~15.7.80The decommissioning of the substation and BESS will result in the removal of all above and below ground equipment and materials, and the restoration of the land back to the pre-construction land quality, including tree planting.~~.~~

~~15.7.80~~15.7.81Any adversely affected under field drainage will be repaired, with replacement drainage schemes installed as required.

~~15.7.81~~15.7.82Following decommissioning, the land will be returned to the landowners in a condition suitable for agricultural use. The woodland, scrub and pond areas will be offered back to the landowners. Their retention long-term will be a matter for them.

Summary of Decommissioning Effects

~~15.7.82~~15.7.83Decommissioning can be timed to be carried out when soil conditions are suitable, as set out in the **oSMP (Appendix 15.2, [EN010163/APP/6.3.15]**) and the oDP (**Appendix 4.2, [EN010163/APP/6.3.4]**) , and will not have any adverse agricultural effects. Thereafter, the land will be available for continued agricultural use; therefore the decommissioning effects are **negligible**, on resources of high, medium or low sensitivity resulting in effects of minor or negligible adverse significance, which is **not significant**.

15.8 Mitigation and Enhancement

Construction Phase

15.8.1 The measures included in the **oSMP** (**Appendix 15.2 [EN010163/APP/6.3.15])** will be implemented, secured through the detailed SMP by DCO requirement. Subject to this, it has been identified that construction activities will not result in any significant adverse effects on agricultural land or soils.

15.8.2 No further mitigation is required.

Operational Phase

15.8.3 It has been identified that operational activities will not result in any significant adverse effects on agricultural land, and for soils there will be benefits. No additional mitigation is therefore considered necessary.

15.8.4 It has been identified that one farm, High House Farm, will experience a moderate significance effect without mitigation. That is because it is a livestock unit and the potential reduction in grazing and fodder land close to the farmyard will result in this becoming a part-time unit. However, if the management of the enhancement area can be for continued agricultural use, albeit with obligations such as for skylark plots, but within the control of the farmers, the effect can be reduced to **minor adverse**, which will be **not significant**.

Decommissioning Phase

15.8.5 It has been identified that decommissioning will not result in any significant adverse effects. The measures included in the **oDP** (**Appendix 4.2, [EN010163/APP/6.3.4]**) will be implemented, secured through the detailed SMP by DCO requirement.

15.8.6 No additional mitigation is therefore considered necessary.

15.9 Residual Effects

Construction Phase

15.9.1 The construction phase effects remain as described in section 15.7, as follows:

- **Best and Most Versatile and Other Agricultural Land:** the installation of Solar PV Panels will not result in any sealing or irreversible downgrading of agricultural land quality. Whilst there is high quality land within the Site, the land will not be lost, and the ALC grade will not be affected. Therefore there will be no loss of ALC grade land. The effect is therefore temporary. The magnitude of impact is therefore low on resources of high (BMV) or medium (Subgrade 3b) sensitivity, resulting in an effect of **minor or negligible** adverse significance, which is **not significant;**

- The worst-case assessment in respect of the woodland areas (12.1 ha) and scrub and pond areas (1-2 ha) is that these may be retained on a permanent basis. If they were removed, there may be some downgrading of agricultural land quality. In respect of the planting and pond areas, a worst-case assumption that these areas are all BMV and are all downgraded will result in a medium

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magnitude impact on a high sensitivity resource, resulting in a **moderate** adverse significance effect, which is **significant**;

- **Soils:** the effect on soils from the installation of the Solar PV Panels is minor or negligible. The installation process will not irreversibly damage soils, which are a mix of medium and low sensitivity. Any adverse effects will be short-term and capable of easy restoration. The magnitude of impact is therefore low. The effect of construction on soils is **minor or negligible** adverse (**not significant**);
- **Farm Businesses:** there will be no indirect effects on surrounding land, or farms, during construction. The magnitude of impact is low on businesses of low sensitivity. The effect is therefore **negligible adverse** (**not significant**).

Operational Phase

15.9.2 The operational phase effects remain as described in section 15.7:

- There will be no further effects on agricultural land quality, therefore no change which is a **negligible** significance effect, which is **not significant**;
- There will be a benefit on soil health and its carbon-holding benefits, but this is a temporary low magnitude benefit on resources of medium or low sensitivity, resulting in an effect which will be **minor or negligible beneficial**, which is **not significant**;
- The effects on occupying farm businesses will be of medium or low magnitude, on holdings of medium or low sensitivity, leading to overall effects of **minor or negligible** significance, which is **not significant**;
- The impacts on food production and the wider local agricultural economy are of negligible magnitude, on low sensitivity resources, and overall therefore of **negligible** significance, which is **not significant**.

Decommissioning Phase

15.9.3 The decommissioning phase effects remain as described in section 15.7 above:

- no significant effects on agricultural land. Areas used for fixed equipment will be restored. This will be a negligible impact on resources of high, medium or

low sensitivity, and all effects will therefore be **minor or negligible adverse**, which is **not significant**;

- **no adverse** effects (**not significant**) on soils;
- the landowners will benefit from the return of unfettered agricultural land following completion of decommissioning (**not significant**).

15.10 Cumulative and In-Combination Effects

Cumulative Effects

Baseline Conditions

15.10.1 The available or estimated information about the baseline land quality of the various cumulative sites is set out in the table below.

Table 15.18~~17~~ - Baseline ALC Information

Scheme Address	Land Quality Information (ha)	Source
ID 1 EN010133 Cottam Solar Project	1180 ha, of which 0.5% Grade 2 and 3.6% Grade 3a, with majority 3b. BMV total 48 ha	Agricultural Land Quality, Soil Resources and Farming Circumstances, ES Appendix 19.1 [APP-045]
ID 2 EN010131 Gate Burton Energy Park	652 ha, of which 12% Grade 3a. BMV total 81 ha	Soil Resources and Agricultural Quality of Land, LRA (June 2022)
ID 15 EN010162 Great North Road Solar and Biodiversity Park	Details not yet published	No published results on NSIP website
ID 3 EN010142 Tillbridge Solar	900 ha, of which 7.5% BMV. BMV total 68 ha	Table 2 in the Heckington Fen NSIP decision
ID 5 EN010132 West Burton Solar Project	758 ha, of which 2.3% Grade 1, 1.3% Grade 2, 22.8% Grade 3a. BMV total 120 ha	Environment Statement Appendix 19.1 and Table 2 Heckington Fen NSIP decision
ID 16 EN010159 One Earth Solar	1500 ha, of which 97% is BMV. BMV total 1,455 ha	Table 2 in Heckington Fen NSIP decision
ID 6 EN010123 Heckington Fen Energy Park	524 ha (Solar Park site), of which 11% Grade 1, 7.4% Grade 2, 30.5% Grade 3a. BMV total 257 ha	Heckington Fen NSIP decision
ID 7 Bumblebee Solar Farm BDC 22/00358/FUL	All the site is Subgrade 3b	ALC supplied with the application

ID 8 Wood Lane Solar Farm BDC 20/00117/FUL	5 ha of Subgrade 3a, remainder of site Subgrade 3b	ALC supplied with the application

Cumulative Effects of Loss of BMV Land

15.10.2 The land loss from the Proposed Development is limited to the fixed infrastructure and it is intended that these areas be restored fully on decommissioning. A similar conclusion applies to the other solar developments in the area. The cumulative effect of land loss is not significant, as all developments are temporary (low magnitude impacts), resulting in **minor adverse** effects irrespective of the inclusion of BMV land, and so are **not significant**.

15.10.3 There is no policy for using land for agricultural production. The cumulative effects of land use change on agricultural production will not result in a significant adverse effect. Four recent NSIP decisions have considered the effects on agricultural land and on food and other benefits. They have concluded as follows, albeit referencing Lincolnshire:

- EN010127 Mallard Pass Solar Farm. There are 360 ha of BMV within the Order Limits. In the Secretary of State's decision letter of 12th July 2024 he reviewed (in isolation and in combination) the impacts on food production (sections 4.87 to 4.103). In 4.100 he concludes that the project and others in the region "**would represent around 0.5% of the BMV land across Lincolnshire and Rutland. The Secretary of State agrees with the ExA that the impact of the Proposed Development in relation to food production in the national context is negligible**";
- EN010133 Cottam Solar Project. The quantum of BMV in this project was modest, but the Secretary of State's decision of 5th September 2024 concluded that the loss or arable production from the 1,160 ha site is a negative impact but "**should be classed as "little negative weight" rather than "significant negative weight**;
- EN010123 Heckington Fen Solar Park. The site includes 257 ha of BMV and the Secretary of State's key conclusion on food related matters is that "**In agreement with the ExA, the Secretary of State considers that the above**

factors mean that the Proposed Development will cause only minor adverse effects to land use and soil";

- EN010132 West Burton Energy Park, consented on 24th January 2025. The "**Secretary of State considers the fixed-term, reversible loss of land for food production is a negative impact of the Proposed Development, but the impact is small when considered against the total agricultural land available for food production in Lincolnshire**".

In- combination Effects

15.10.4 Regarding in-combination effects, given that the residual effects associated with the construction, operational and decommissioning phases of the Proposed Development are predicted to be not significant, it is not anticipated for there to be any significant in-combination effects on receptors of land use and agriculture with other environmental disciplines assessed.

15.10.5 Effects relating to changes in land use on agricultural businesses (i.e. potential socioeconomic effects) associated with the Proposed Development is intrinsically included within the assessment approach of this Chapter. Therefore, overall, there are no significant adverse effects in this regard.

15.11 Summary

Introduction

15.11.1 The effects on agricultural land, soils and farm businesses are not significant.

Baseline Conditions

15.11.2 The Site involves approximately 888 ha of agricultural land. The area proposed for the Solar PV site extends to 722 ha and is a mix of Grades 1, 2, 3a and 3b. Of this only 467 ha will be within the fenced areas for solar PV modules. Seven farms currently have land within the Site, mostly tenanted.

Likely Significant Effects

15.11.3 The Site includes land of ALC Grades 1, 2, 3a and 3b. A significant proportion of the Site is of BMV quality. This is therefore a sensitive receptor. However the impact is temporary, and accordingly of low magnitude. This results in a **minor or negligible adverse** effect, which is **not significant**. However, the inclusion of land proposed

for woodland planting as a permanent and irreversible loss would result in a **moderate adverse effect**, which is **significant**.

15.11.4 The soils, in this relatively dry part of the country, are resilient to being worked. The effects are of low magnitude, resulting in **minor or negligible adverse** effects, which is **not significant**.

15.11.5 The farm businesses are full-time mostly arable enterprises, and are also resilient to a degree of change. The effects especially on the farm businesses, will be significant for those businesses but, in environmental assessment terms the effect will be a **minor adverse** effect which is **not significant**.

Mitigation and Enhancement

15.11.6 Mitigation is possible to ensure that any land disturbed is restored to comparable quality at decommissioning. A Soil Management Plan will be needed, an outline of which is supplied with this ES.

Cumulative and In-Combination Effects

15.11.7 There are no significant cumulative effects.

Conclusion

15.11.8 Overall, no significant, adverse residual or cumulative effects are identified for the construction, operational and decommissioning stages for the Proposed Development, with the exception of the adverse effect on land quality that may result from woodland planting. .

Table 15.~~18~~ 19 - Summary and Residual Effects

Receptor/ Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation/ Enhancement Measures	Residual Effects
Construction								
Soils	Damage to structure	Temporary	Medium and low	Low	Local	Minor/negligible adverse but moderate adverse if woodland is included (~~Not~~ Significant)	oSMP	~~Minor/negligible~~Moderate adverse (~~Not~~ Significant)
BMV land	Loss or downgrading	Permanent	High or medium	Low	National	Minor adverse (Not Significant)	oSMP	Minor adverse (Not Significant)
Farm businesses	Disruption	Temporary	Low	Low	Local	Negligible (Not Significant)	-	Negligible (Not Significant)
Operation								
Soils	Damage to structure	Temporary	Medium or low	Low	Local	Minor or negligible beneficial (Not Significant)	-	Minor or negligible beneficial (Not Significant)

Receptor/ Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation/ Enhancement Measures	Residual Effects
BMV land quality	Loss or downgrading	Temporary	High or medium	Negligible	National	Negligible (Not Significant)	-	Negligible (Not Significant)
Farm businesses	Effects on viability	Permanent	Low	Medium or low	Local	Minor or negligible (Not Significant)	-	Minor or negligible adverse (Not Significant)
Food Production	Effect on food security	Temporary	Low	Negligible	National	Negligible (Not Significant)	-	Negligible (Not Significant)
Cumulative and In Combination								
Loss of BMV	Loss	Temporary	High	Low	National	Minor or negligible adverse (Not Significant)	-	Minor or negligible adverse (Not Significant)
Food security	Loss	Temporary	Low	Low	National	Negligible (Not Significant)	-	Negligible (Not Significant)