



SOILS PLANNING PROOF OF EVIDENCE BY RUTH METCALFE BSc (Hons) M AgrE CEnv MIAgrE

**Land south of Berrington, Shrewsbury, Shropshire SY5 6HA
on behalf of Econergy International Limited**

Against the Refusal of Planning Permission by Shropshire Council for:

'Erection of an up to 30MW Solar PV Array, comprising ground mounted solar PV panels, vehicular access, internal access tracks, landscaping and associated infrastructure, including security fencing, CCTV, client storage containers and grid connection infrastructure, including substation buildings and off-site cabling.'

APP/L3245/W/23/3332543

LPA ref. 22/04355/FUL

LPA Appeal Reference: 23/03207/REF



CONTENTS

1	INTRODUCTION	3
	1.1. Qualifications.....	3
	1.2. Structure.....	3
	1.1 Background	3
2	SOILS AND AGRICULTURAL LAND CLASSIFICATION	5
	2.1. Agricultural Land Classification	5
3	MANAGEMENT OF THE SOIL RESOURCES.....	7
	3.1. Introduction.....	7
	3.2. Outline Soil Management Plan.....	7
4	IMPACT ASSESSMENT	9
	4.1. Introduction.....	9
	4.2. Land Use and Food Production.....	9
	4.3. Impact Assessment.....	10
5.	FOOD PRODUCTION AND RENEWABLE ENERGY	12
	5.1. Introduction.....	12
	5.2. Food production	12
6.	SOIL MANAGEMENT	13
	6.1. Introduction.....	13
	6.2. Soil Resource Management.....	14
7.	NATURAL CAPITAL	15
	7.1. Introduction.....	15
	7.2. Benefits	15
8.	SUMMARY AND CONCLUSIONS	17
	8.1. Summary.....	17
	8.2. Conclusions	17

1 INTRODUCTION

1.1. Qualifications

- 1.1.1. My name is Ruth Metcalfe. I am a soil scientist with RSK ADAS Ltd. I hold an honours degree in Geography from Bristol University and a master's degree in Agricultural Engineering (Land Resource Management) from Silsoe College (now part of Cranfield University). I was employed as a Research Officer in the Ministry of Agriculture, Fisheries and Food, (now Department of the Environment and Rural Affairs (Defra)).
- 1.1.2. I have been a consultant in the government and private sectors undertaking agricultural land classification surveys and soil resource surveys for over 30 years. I am a member of the Institution of Agricultural Engineers and a Chartered Environmentalist. I have undertaken surveys for major infrastructure projects (roads, rail, pipelines), housing and commercial developments, mineral extraction and restoration and soil resource management associated with development.

1.2. Structure

- 1.2.1. This evidence is structured as follows:
- Section 2 – soils and agricultural land classification
 - Section 3- management of soil resources
 - Section 4- impact assessment
 - Section 5 -food production and renewable energy
 - Section 6- soil management
 - Section 7- natural capital
 - Section 8-summary and conclusions
- 1.2.2. The matter of relevant planning policies is considered under the Planning Topic.

1.3 Background

- 1.3.1. I am instructed by the Appellant to provide evidence on the agricultural land matters at this appeal and to address reason for refusal no. 1 of application (22/04355/FUL) (CD 3.2) which states that:

Loss of Best and Most Versatile Land

88.2% of the land within the 44.09-hectare is best and most versatile quality with 54.1% being higher Grade 2 quality. It is not considered that the renewable energy benefits of the proposals or the applicant's justifications for this choice of site are sufficient to outweigh the adverse impact of losing the arable production potential of this best and most versatile land for the 40-year duration of the proposed solar farm,

assuming the land is physically capable of reverting to intensive arable production at the end of this time period.

The reason continues with reference to policies - The proposals are therefore contrary to paragraph 174B of the NPPF and Core Strategy Policy CS6 (and the accompanying explanatory paragraphs). The proposal is also contrary to policy DP26 (part 2.k) of the emerging Shropshire Local Plan which states that solar farm development should use lower grade land in preference to best and most versatile land.

- 1.3.2. The report prepared by the Planning Officer (report dated 9th May 2023) (CD 3.1) stated:

6.4.10 The applicant advises that the proposed solar farm is a temporary form of development which can be fully reversed. Agricultural production can also be maintained (though constrained) during the operational life of the solar park. Consequently, the development proposal would not result in the permanent loss or degradation of agricultural land.

- 1.3.3. Furthermore the Planning Officer (report dated 9th May 2023) noted in his conclusion:

7.1 The proposed solar development would operate for a temporary period of 40 years and would be fully restored as agricultural land after decommissioning.

2 SOILS AND AGRICULTURAL LAND CLASSIFICATION

2.1. Agricultural Land Classification

- 2.1.1. The land at the Appeal Site has been classified according to the revised guidelines for Agricultural Land Classification (ALC) issued in 1988 by the Ministry of Agriculture, Fisheries and Food (CD 9.1). The introduction to the revised guidelines for ALC states that *'the guidelines provide a consistent basis for land classification but, given the complex and variable nature of the factors assessed and the wide range of circumstances in which they can occur, it is not possible to prescribe for every possible situation. It may sometimes be necessary to take account of special or local circumstances when classifying land.'*
- 2.1.2. The Agricultural Land Classification provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The principal physical factors influencing agricultural production are climate, site and soil. These factors and the interactions between them form the basis for classifying land into one of five grades from Grade 1 land, which is described as land of excellent quality agricultural land to Grade 5 land, which is described as very poor quality agricultural land.
- 2.1.3. Grade 1 land is described as excellent quality agricultural land with no or very minor limitations to agricultural use.
- 2.1.4. Grade 2 agricultural land is described as very good quality agricultural land with minor limitations which affect crop yield, cultivations or harvesting.
- 2.1.5. Grade 3 agricultural land is described as good to moderate quality agricultural land. The grade is subdivided into Subgrade 3a -good quality agricultural land and Subgrade 3b- moderate quality agricultural land.
- 2.1.6. Grade 4 agricultural land is described as poor quality agricultural land.
- 2.1.7. Grade 5 agricultural land is described as very poor quality agriculture land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.
- 2.1.8. The Appeal Site extends to 44.09ha of land in two fields.
- 2.1.9. Natural England's guidance in their Technical Information Note on Agricultural Land Classification (CD 9.4) is that a detailed ALC survey should be undertaken to provide information on the agricultural land quality of a site.

- 2.1.10. The Appeal Site was surveyed by ADAS in January 2022. The ALC Guidelines were followed and a report was submitted with the application in 2022 (CD 1.3). The survey covered 44.09 ha.
- 2.1.11. The soils are formed in the sand and gravel of glacio-fluvial deposits at the western boundary of the site and over the rest of the site in deposits of Till (sand and clay deposits). The soils vary in characteristics across the Appeal Site.
- 2.1.12. Most soil profiles are clayey, with evidence of periodic wetness and poorly structured, slowly permeable clayey subsoil at a depth from the surface of between 38 cm and 80 cm beneath the topsoil and upper subsoil. The main variation is the presence of and depth to reddish clay. In the north western corner of the site the soils are sandy.
- 2.1.13. Grade 2 land is found across the southern part of the Appeal Site.
- 2.1.14. Within the area of Grade 2 there are profiles of Grade 1 soil. These profiles are included within the land mapped as Grade 2 (CD 1.3) and not shown as a separate mapping unit. In the south part of the site the soil textures are variable and the land falls to the field boundary. The individual soil profiles are of Grade 1 quality, but as a separate mapping unit the land does not meet the definition of Grade 1 land as given in the MAFF ALC Guidelines- '*land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.*'
- 2.2.15 Subgrade 3a land is found in the north western part of the Appeal Site and in areas in the northern part of the Appeal Site. Close to the north western boundary the soil is formed on sand and gravel of glacio-fluvial deposits. Other land in Subgrade 3a is developed on the underlying geology of clay. Subgrade 3b land is found to the east of the irrigation reservoir and in the central part of the Appeal Site.
- 2.1.16 There is an irrigation reservoir adjacent to the Appeal Site. The consideration of the availability of irrigation in grading agricultural land was reviewed in 1997 and removed from the ALC methodology (Appendix Soils 1).
- 2.1.17 Land classified as Grades 1,2, and Subgrade 3a is the 'best and most versatile' (BMV) land as defined in the National Planning Policy Framework (2023) Annex 2) (CD 6.1).
- 2.1.18 Within the Appeal Site about 88% of the land classified as Grade 2 and Subgrade 3a agricultural land and about 12% classified as Subgrade 3b.

3 MANAGEMENT OF THE SOIL RESOURCES

3.1. Introduction

3.1.1. Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) (CD 9.2) was developed primarily to promote the better protection of soil resources in the construction sector.

3.1.2. The Code gives guidance on pre-construction planning and soil management during construction. It is used in a variety of projects from major infrastructure ones such as transport (rails and road), pipelines, energy to small-scale landscape habitat or garden creation.

3.2. Outline Soil Management Plan

3.2.1. The Outline Soil Management Plan (August 2023) was submitted with the Appeal (CD 4.6). The current plan, which follows a review of the Outline Soil Management Plan that was submitted with the application (CD 1.19), covers the historical development of soil management plans and outlines the proposed areas of soil disturbance.

3.2.2. The purpose of a Soil Management Plan is:

- to ensure the protection and conservation of all soil resources on site
- identify best practice to maintain the physical properties of the soils on site
- to be an on-site reference for site operators on the management of the soil resource

3.2.3. The Outline Soil Management Plan sets out details of an 'in field' assessment for soil moisture condition to determine the suitability of the soil for either handling or trafficking. Soils should be handled or trafficked when in a reasonably dry and friable state.

3.2.4. The Field Capacity Day figure for the site is about 149 days, which is the period when soils hold the maximum amount of water. The soils at the Appeal Site are likely to return to Field Capacity in late November and remain at Field Capacity until late March.

3.2.5. On the Appeal Site there are very limited areas where there is a need at the construction phase to move soil. These areas include the locations of the customer substation, power stations, containers, which cover in total approximately 0.02ha or 0.04% of the site. The internal access track, covering approximately 0.4ha, will consist of stone laid on geotextile onto the subsoil, which can be removed and the geotextile

lifted at the end of the 40-year duration. The removal of topsoil and appropriate storage is normal practice, where a temporary access is required.

- 3.2.6. Any soil moved from these areas will be retained on site, stored and reinstated in the same areas at the end of the 40-year duration.
- 3.2.7. Cabling is part of any solar farm. The Appellant has indicated that the method used will involve the excavation of a narrow trench.
- 3.2.8. Normal practice is to remove the topsoil and subsoil separately, place them either side of the trench and re-instate in the correct sequence following cable laying. There is no storage requirement of the soil.
- 3.2.9. A detailed soil management plan follows the outline plan and is prepared prior to any construction work. The detailed plan further develops the purpose of the outline soil management plan with good practice mitigation including records of soil volumes, asset tagging of soil storage location and photographic records. Soil samples would be analysed where appropriate for agricultural nutrients prior to any work to provide baseline information.

4 IMPACT ASSESSMENT

4.1. Introduction

4.1.1. The reason for refusal no 1 (CD 3.2) is stated as:

‘the adverse impact of losing the arable production potential of this best and most versatile land for the 40-year duration of the proposed solar farm, assuming the land is physically capable of reverting to intensive arable production at the end of this time period’.

4.2. Land Use and Food Production

4.2.1. Part of the reason for refusal no. 1 refers to the *‘adverse impact resulting from the loss of the arable production potential of the best and most versatile land for the 40-year duration of the proposal’.*

4.2.2. The two main fields within the Appeal Site are used for arable crop production. The current rotation is of oil seed rape and wheat followed by oats. The wheat and oat crops can be used for either food production or animal feeds. An oil seed rape crop can be processed for cooking oil, biodiesel, animal feed and can be used in other industrial applications such as the gas and oil industry.

4.2.3. The officer report (CD 3.1) considered agricultural matters in Sections 6.4 and 6.7.

4.2.4. The following paragraphs are relevant:

6.4.10 The applicant advises that the proposed solar farm is a temporary form of development which can be fully reversed. Agricultural production can also be maintained (though constrained) during the operational life of the solar park. Consequently, the development proposal would not result in the permanent loss or degradation of agricultural land.

6.7.20 Current solar photovoltaic arrays have a design life of approximately 40 years. It is recommended that any planning permission includes a condition requiring decommissioning and removal of the solar panels and associated infrastructure at the end of their design life and reinstatement of the field to ‘normal’ agricultural use, as stated in the application. This would ensure that future arable productive capacity is protected. A decommissioning clause would also be included in the applicant’s

4.2.5. The officer report to the Planning Committee on 9th May 2023 stated that the proposed solar farm is a temporary development, with no permanent loss of the land, and the land would be available for future arable cropping or other agricultural use.

- 4.2.6. The reason for refusal (CD 3.2) includes a reference to the loss of the arable production potential of the land for the 40-year duration of the proposed solar farm. The Appeal Statement submitted by Shropshire Council (CD 4.11) refers to the 'importance of the Grade 2 and 3a agricultural land for food production'.
- 4.2.7. The Town and Country Planning Act 1990 (s336) states that the use of any land for the purposes of agriculture is not development (s55 (2) (e)) (Appendix 2). The definition of agriculture as a land use includes the use of the land as grazing land as well as seed growing. There is no requirement for planning consent to use land for agriculture or to change from arable cropping to grass production.
- 4.2.8. A land manager can manage land as best suits the objectives of the farming business and take decisions as to whether land is used for food production.
- 4.2.9. As much of the Appeal site is classified as Grade 2 and Subgrade 3a the land has potential for arable cropping. The MAFF ALC Guidelines state that 'the grading does not necessarily reflect the current economic value of land, land use, range of crops, suitability for specific crops or level of yield.' At the time of the survey the Appeal Site could have been used for under grass for livestock grazing, but the climate, site and soil factors, which influence the grading would remain unchanged and the land would be graded accordingly.
- 4.2.10. While the land at the Appeal Site is recognised as best and most versatile agricultural land under National Planning Policy Framework (2023 Annex 2) (CD 6.1), there is no requirement for such land to be used for either arable cropping or food production.

4.3. Impact Assessment

- 4.3.1. To assess the impact of the loss of the arable production potential during the lifetime of the solar farm an analysis is undertaken of the wheat output at the Appeal Site against the national and county yield figures. The analysis uses data from the John Nix Pocketbook for Farm Management (2024) (Appendix Soil 3). The crop yields are given for average and high yields to provide a range and there is no distinction in the data for the quality of the agricultural land.
- 4.3.2. The impact of the loss of the arable production potential of the Appeal Site is considered in the context of the UK Food Security Report 2021 (updated 5 October 2023), which states the UK produces 15 million tonnes of wheat per annum in the UK or 8 tonne per ha (CD 9.5).
- 4.3.3. The trends since 2020 for cereal and oilseed rape production in the United Kingdom are given in the Government release of December 2023 (CD 9.6). Over much of the past 20 years the production of wheat has generally been at 14 million tonnes or above in the United Kingdom.
- 4.3.4. The yield from a wheat crop covering some 44 ha is approximately 352 tonnes per annum and contributes 0.002% to the national yield. Similar figures for an oat crop give the contribution to the national yield as about 0.003%.

- 4.3.5. In the context of Shropshire the report on the Structure of the Agricultural Industry in Shropshire at 2021 (CD 9.7) reported that 27% of the farmland in the county was used for cereal production.
- 4.3.6. The Appeal Site contributes about 0.06% to the county's cereal yield.
- 4.3.7. In the context of the national and county yields the contribution made by wheat and oats grown on the land at the Appeal Site is relatively small and it is considered that there is no adverse potential impact nationally or regionally from the loss of 44ha from an arable cropping land use during the 40-year period of the proposed solar farm.

5. FOOD PRODUCTION AND RENEWABLE ENERGY

5.1. Introduction

- 5.1.1. The Council's case states that 'the renewable energy benefits of the proposal are insufficient to outweigh the adverse impact of losing the arable production' of the Appeal Site for the 40-year duration of the proposed solar development.

5.2. Food production

- 5.2.1. The UK Food Security Report 2021 (updated 5 October 2023) (CD 9.5) states that the UK is around 75% self-sufficient in foodstuffs that can be produced domestically. The UK has relied on imported foodstuffs for over 200 years and about half of the food consumed in the UK is imported. Sourcing food from the global market contributes to the UK's food resilience. Domestic food production is stable and agricultural production has become increasingly efficient.
- 5.2.2. The report states that wheat is a vital part of the UK's diet and accounts for about 30% of the daily food energy intake per person in the UK over the past 50 years. While grain is generally the most efficient form of production in terms of calories per hectare it has a significant environmental impact such as damage to the soil.
- 5.2.3. There is a reported surplus of domestic grain AHDB press release 26 Jan 2023 (Appendix Soil 4) reported a large surplus of domestic grain at the end of 2023.
- 5.2.4. The matter of food production against renewable energy has received attention elsewhere. The decision notice for Halloughton (CD 7.12) referred to the assessment of the net value of the solar farm in terms national energy production against the net value of arable crop production and food production. The Decision Notice states that such an assessment cannot be undertaken by an individual appellant. It 'would have to be carried out at a national level and involve high level political decisions/choice'.
- 5.2.5. The Food Security Report identified the main threats to the UK's domestic food production as climate change and pressures from soil health and biodiversity. The report notes that the matter is a complex and multi-faceted issue. An assessment of the balance of renewable energy and the loss of land with the arable cropping potential is considered under the Planning topic.

6. SOIL MANAGEMENT

6.1. Introduction

6.1.1. An assessment of the reason for refusal no.1 is undertaken:

Assuming that the site is physically capable of being reverted to best and most versatile land.

6.1.2. The officer report of 9th May 2023 (CD 3.1) notes the soils will be protected through the implementation of a soil resource management plan submitted by the Applicant. The only reference made to agricultural land is at Condition 14 of the officer's report where decommissioning is addressed with the removal all solar farm infrastructure and the reinstatement of the Site to agricultural fields. The reason for the condition was 'to allow the site to be reinstated to an agricultural field capable of full productivity'.

6.1.3. The protection and management of soil resources is required throughout the whole lifetime of a solar farm to maintain the physical characteristics of the soil, which in turn contribute to the quality of the land for agricultural production.

6.1.4. There is limited published solar site specific evidence on the physical capability of reverting solar sites to best and most versatile land due to the relatively early stage in the life cycle of the solar sites in the UK. However there is experience and evidence available from the mineral industry and wider construction sector, where soils are disturbed and reinstated to an agricultural use.

6.1.5. The Construction Code of Practice for the Sustainable Soil on Construction Sites (CD 9.2) sets out best practice for protecting and managing soil resources.

6.1.6. The Code recognises that there is no 'specific direct planning control on the sustainable use and management of soil resources on construction sites or a requirement for the monitoring of soil protection and sustainable reuse'.

6.1.7. National Policy Statement for Renewable Energy Statement (EN-3) November 2023 (CD 6.4) para 2.10.33 and 2.10.34 states that 'applicants are encouraged to develop and implement a Soil Resources and Management Plan which could help to use and manage soils sustainably and minimise adverse impacts on soil health and potential land contamination.'

6.1.8. The preparation of a soil management plan is not a planning requirement and is not widely undertaken as part of the solar farm planning application. Two solar developments in the Albrighton/Bonningale area, Shropshire (Appendix Soil 5) both with BMV agricultural land were granted permission without reference to management of the soil resource at the application stage. The only reference in both decision notices to agricultural land is in the lpa's condition referring to

decommissioning and reinstating the site to agricultural fields. There is no reference to reversion of the site to best and most versatile agricultural land.

6.2. Soil Resource Management

- 6.2.1. The main soil physical characteristics that influence the agricultural quality of land include texture, structure, depth and stoniness. These characteristics can be limitations separately or through interactions with climate factors.
- 6.2.2. The Construction Code of Practice for the sustainable use of soils on construction sites notes that over-compaction of soil and the impact on soil properties is associated with construction.
- 6.2.3. Over compaction of soil occurs when the soil is compressed, usually when in a wet condition, potentially leading to damage of the soil structure and the subject is well documented for example by Cranfield University (Appendix Soil 6). Compression of the soil leads to change in the soil structure and the porosity of the soil, affecting the movement of water, air and roots through the soil.
- 6.2.4. It should be recognised that over compaction of soil is not limited to construction sites but frequently occurs on agricultural land because of ill-timed farming operations by machinery or livestock. Visual evidence in the field can include wheel ruts and standing pools of water.
- 6.2.5. Soil compaction to a depth of 45cm can be alleviated by use of a subsoiler and can be undertaken by the land manager.
- 6.2.6. A soil management plan sets out best practice and mitigation measure to protect and maintain the structural characteristics of the soil.
- 6.2.7. The key measure to protect and maintain the structural characteristics of the soil is an assessment of the soil moisture condition prior to any movement of soil and movement across the site.
- 6.2.8. There is guidance for consideration when planning the construction phase that construction works should be avoided and that minimal traversing across the site should be planned between the period late November to late March. It is this period when the soils generally hold the maximum amount of water.
- 6.2.9. Details are given when soil movement can take place after precipitation and when soil should not be trafficked for example during or shortly after heavy precipitation.
- 6.2.10. A detailed soil management plan will apply to the whole lifetime of the solar farm. The implementation of the measures for handling soil and trafficking across the site mitigate soil degradation. This will ensure that the soil structure and its interactions

with climate and other soils factors are such that the land reverts to best and most versatile agricultural land at the end of the 40-year period of the proposed solar farm.

7. NATURAL CAPITAL

7.1. Introduction

- 7.1.1. The concept of 'natural capital' is part of the approach being taken by Government in response to climate change and declines in biodiversity. Natural capital is viewing the different parts of nature e.g. soil as assets, which can provide goods and services that benefit society.
- 7.1.2. Solar Energy UK's Natural Capital Best Practice Guidance (CD 9.8) identifies nine ecosystem services arising from well managed solar farm, which include for example biodiversity and wildlife provision, carbon storage and climate regulation, flood attenuation and water cycle support, pollination, soil erosion mitigation and soil quality regulation, food provision and sustainable agriculture.
- 7.1.3. The Government's Environmental Improvement Plan is the first revision of the 25-year plan to improve the health of the environment by using natural resources more sustainably and efficiently and includes plans to improve soil health and maintain good soil structure (CD 9.9).
- 7.1.4. Natural England commented on natural capital at a solar development near Market Drayton (Appendix Soil 7) and stated that it was important for soil to retain as many functions such as storage of carbon, water absorption, nutrient cycling and food production. This required appropriate soil management to retain the long term potential of the land with no permanent loss of agricultural land.

7.2. Benefits

- 7.2.1. A change in the agricultural land use from arable cropping to grassland for an extended period is known to influence the soil organic matter content of the soil and is widely documented (British Society of Soil Science Appendix Soil 8). Continuous arable cropping results in a reduced levels of soil organic matter, structural stability and earthworm and microbial activity. Grassland soils are recognised as being generally well structured and aid water infiltration. The agricultural land use change associated with the proposed solar farm will result in benefits for soil structure and soil health. The change in the agricultural use of the land for a 40-year period would deliver a positive benefit for the soil health in line with plans set out in the Government's Environmental Improvement Plan.
- 7.2.2. The economic benefits from the current agricultural use of the Appeal Site are considered and relate to the value of the arable crops of wheat, oil seed rape and oats.

7.2.3. Based on figures from John Nix Pocketbook for Farm Management (Appendix Soil 3), the following Gross Margins/ha are given below:

	Feed Winter Wheat	Milling Winter Wheat	Oilseed Rape	Oats
Average yield	£1116	£1012	£944	£767
High yield	£1389	£1240	£1161	£923

7.2.4. For an area of 44ha the range of Gross Margins are:

	Feed Winter Wheat	Milling Winter Wheat	Oilseed Rape	Oats
Average yield	£49,104	£44,528	£41,536	£33,748
High yield	£61,116	£54,560	£51,084	£40,612

7.2.5. The officer report of 9th May 2023 (CD 3.1 para 6.2.4) presented figures on the monetary outcomes of the proposed solar farm.

7.2.6. The Gross Value Added (GVA) during construction of similar solar farms is around an additional £1.5m and over the lifetime of the similar solar farms of around £1.8m. The proposed development would be subject to business rates and approximately £44,000 per year would be received by the Council for investment in local services. The report also stated that the Appeal Site has potential to offset the average annual electricity consumption of approximately 7,000 houses (or the equivalent in industry and businesses).

7.2.7. During the lifetime of the solar farm there will be a grass crop grazed by sheep. Using a published figure of 2 to 3 sheep per ha given in BRE's Agricultural Good Practice Guidance for Solar Farms (CD 9.3) the area of grassland would support between 72 and 108 sheep giving a gross margin of between £1,296 and £1,944 based on figures from John Nix Pocketbook (Appendix Soil 3).

7.2.8. During the lifetime of the solar farm there would be a continued agricultural use on the land and a wider economic benefit. In addition there would be a biodiversity gain as reported by Mr Heslehurst.

7.2.9. The potential benefits considered in this report show that the natural capital of the land includes improvements to soil health and wider economic benefits. At the end of the proposed solar farm's life the asset of the land would remain.

8. SUMMARY AND CONCLUSIONS

8.1. Summary

- 8.1.1. The proposed solar farm would be sited on land to the west of Berrington on two fields covering 44.09 ha of land.
- 8.1.2. The site has been classified according to the MAFF ALC Guidelines. Within the Appeal Site about 88% of the land is classified as Grade 2 and Subgrade 3a agricultural land and about 12% classified as Subgrade 3b agricultural land.
- 8.1.3. An Outline Soil Management Plan has been prepared to ensure the protection and conservation of all soil resources. This is best practice and there is no planning requirement to prepare such a plan. The preparation and implementation of a detailed Soil Management Plan will follow best practices for protecting and managing the soil resources throughout the lifetime of the proposed solar farm.
- 8.1.4. Arable crops of wheat, oil seed rape and oats are grown in rotation either for food production or animal feeds.
- 8.1.5. There is no guarantee that any arable crops go directly for food production.
- 8.1.6. The potential contribution of arable production at the Appeal Site to the national and county wheat yields is 0.002% and 0.06% respectively.
- 8.1.7. The Food Security Review Report 2021 (updated 5 October 2023) states domestic food production is stable and identifies climate change, soil health and biodiversity as the main threats to domestic food production.
- 8.1.8. The conversion of the proposed solar farm from arable cropping to grassland has potential benefits of increasing the soil organic matter over the 40-year period and results in beneficial effects on soil structure and soil health in line with the Government's Environmental Improvement Plan.

8.2. Conclusions

- 8.2.1. There is no adverse impact from the loss of the arable cropping potential for a 40-year period on the 44 ha of land.
- 8.2.2. The implementation of a soil management plan throughout the whole life time of the proposed solar farm will ensure that the natural capital asset of the land is physically capable of reverting to best and most versatile agricultural land after the 40-year period.