



SUMMARY 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 Ecoenergy 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 ref. 23/03207/REF



1 INTRODUCTION

1.1. Qualifications

- 1.1.1. My name is Ruth Metcalfe. I am a soil scientist with RSK ADAS Ltd and I have been a consultant in the government and private sectors undertaking agricultural land classification surveys and soil resource surveys for over 30 years.

1.2. Structure

- 1.2.1. The full proof of evidence addresses issues relating to soils and the impact of the solar farm on food production and reversion to arable cropping at the end of the 40-year life of the solar farm.

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).

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 according to the revised guidelines for Agricultural Land Classification (ALC) issued in 1988 by the Ministry of Agriculture, Fisheries and Food.
- 2.1.2. 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).
- 2.1.3. 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 agricultural land.

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) was developed primarily to promote the better protection of soil resources in the construction sector.

3.2. Outline Soil Management Plan

3.2.1. An Outline Soil Management Plan was submitted with planning application by the Appellant.

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 provide on-site reference for site operators on the management of the soil resource

3.2.3. On the Appeal Site there are very limited areas where there is a need at the construction phase to move soil. 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.

4 IMPACT ASSESMENT

4.1. Introduction

4.1.1. The notice for refusal of planning permission (LPA 22/04355/FUL) refers to the adverse impact of losing the arable potential of best and most versatile land for a 40-year period.

4.2. Land Use and Food Production

4.2.1. 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 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.

4.2.2. Any land manager can manage land as best suits the aims of the farming business and take decisions as to whether land is used for food production. While the land at the Appeal Site is recognised as best and most versatile agricultural land under National Planning Policy Framework (2023 Annex 2), there is no requirement for the 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 contribution of crop output at the Appeal Site against the national and county yield figures.
- 4.3.2. The yield from a wheat crop covering some 44 ha is approximately 352 tonnes per annum and contributes 0.002% to the national yield and 0.06% of the county yield. Similar figures for an oat crop give the contribution to the national yield as about 0.003%.
- 4.3.3. 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 there is no adverse impact on the potential arable cropping nationally or regionally from the temporary loss of 44ha from an arable cropping land use.

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) states that the UK is around 75% self-sufficient in foodstuffs that can be produced domestically and that food production is stable. The UK has relied on imported foodstuffs for over 200 years and about half of the food consumed in the UK is imported, which is key to the UK's food resilience.
- 5.2.2. The matter of food production against renewable energy has received attention elsewhere. It was considered in a recent decision notice (Appeal Reference: APP/W3520/W/23/331/9970) that an assessment of the net value of the solar farm in terms of national energy production against the net value of arable crop production and food production cannot be undertaken by an individual appellant.
- 5.2.3. An assessment of the balance of renewable energy and the loss of land with the arable cropping potential is considered under the Planning topic.
- 5.2.4. The main threat to UK Food production comes from climate change and pressures from soil health and biodiversity.

6 SOIL MANAGEMENT

6.1. Introduction

- 6.1.1. The notice for refusal of planning permission (LPA 22/04355/FUL) refers to the reversion of the arable potential of best and most versatile land at the end of a 40-year period.
- 6.1.2. The officer report of 9th May 2023 notes the soils will be protected through the implementation of a soil resource management plan submitted by the Applicant.
- 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. National Policy Statement for Renewable Energy Statement (EN-3) November 2023 para 2.10.33 and 2.10.34 states that 'applicants are encouraged to develop and implement a Soil and Resources Management Plan which could help to use and manage soils sustainably and minimise adverse impacts on soil health and potential land contamination.'

6.2. Soil Resource Management

- 6.2.1. The main soil physical characteristics that influence the agricultural quality of land include are 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. Over compaction of soil occurs when the soil is compressed, usually when in a wet condition, potentially leading to damage of the soil structure.
- 6.2.3. 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. Soil compaction to a depth of 45cm can be alleviated by use of a subsoiler and can be undertaken by the land manager.
- 6.2.4. A Soil Management Plan sets out best practice and mitigation measure to protect and maintain the structural characteristics of the soil through the assessment of in field soil moisture conditions prior to any movement of soil and movement across the site.

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. Solar Energy UK's Natural Capital Best Practice Guidance (CD 9.8) identifies nine ecosystem services arising from a well managed solar farm. 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.

7.2. Benefits

7.2.1. A change in land use from arable cropping to grass 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). 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 and be in line with 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 and oil seed rape. For a milling winter wheat crop the gross margin figure for the site per annum is in the range of £44,500 to £54,500.

7.2.3. The officer report of 9th May 2023 presented figures on the monetary outcomes of the proposed solar farm with a Gross Added Value over the lifetime of a solar farm of around £1.8m. During the lifetime of the solar farm there will be a grass crop grazed by sheep with a gross margin figure in the range of £1300 to £1900.

7.2.4. The potential benefits considered in this report show that the natural capital of the land includes improvements to soil health, food production, and wider economic benefits. At the end of the proposed solar farm 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. The site has been classified according to the MAFF ALC Guidelines and about 88% of the land classified as Grade 2 and Subgrade 3a agricultural land and about 12% classified as Subgrade 3b.
- 8.1.2. The arable crops of wheat, oil seed rape and oats are grown in rotation either for food production or animal feeds. There is no guarantee that any arable crops go directly for food production. The potential contribution of arable production at the Appeal Site to the national and county wheat yields is 0.002% and 0.06% respectively.
- 8.1.3. 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 result 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 arable cropping potential on 44 ha of land for the 40-year life of the proposed solar farm.
- 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 of the proposed solar farm.