

From: Ruth Metcalfe [Redacted S.40]

Sent: 13 May 2021 15:23

To: Williams, Arwel (ESNR - ERA - Land, Nature & Forestry) [Redacted S.40]

Cc: Kirk Hill [Redacted S.40]; John Williams [Redacted S.40]

Subject: Blackberry Lane Solar Park

Arwel- please find attached the document with comments from Kirk, John Williams and myself. John's comments are based on information that the that 'the land was already being used for ley arable rotations so the organic matter and associated soil quality is likely to be better on this land than where soils have been used for solely arable production. In which case the soil quality argument put forward by the developers is much weaker.' There is a point at 80-91 about EIA regs, which Kirk has asked for your comment. Please contact Kirk if there are any points to discuss.

Thanks

Ruth

[Redacted S.40]

A5.2 Agricultural Assessment (86/643)

The report entitled 'Agricultural Assessment September 2020 (document reference_BL013) prepared by Wessex Solar Energy (WSE), considers 'the impact of the proposed development on the agricultural land which it will occupy and on the existing agricultural businesses (1. Introduction page 92/643). The document is a list of statements and many are further expanded in document reference BL014.

24. There is mention of proposed additional drainage, but it is not clear in the Appendices where this is proposed. Given the soil descriptions there are likely to be existing underground land drainage systems present in many of the fields. These drainage pipes are at risk of damage from the panel supports, fence post and cables. Therefore such areas may require comprehensive new field drainage system is to restore the current land quality potential.

26. The report states the land is moderately yielding. However, most of the land is grade 2 which is "land with minor limitations" which may usually grow "a wide range of agricultural and horticultural crops" and where "the level of yield is generally high" (quotes taken from ALC guidance¹).

A5.3 Land Quality Assessment Nov20

Land Quality matters are considered (page 106/643 and page 3 BL014).

10. The report states that '*Guidelines for the assessment of the physical factors such as climatic and site factors (including gradient, microrelief and flood risk) are set out with the MAFF, 1988 guidance document. However, they are not considered further within this report as they represent a consistent baseline, regardless of the type of agricultural use-providing that the form of the land is not altered. Therefore, this report focusses on soil characteristics.*' The MAFF Agricultural Land Classification (ALC) Revised Guidelines (1988) states that 'Climate has a major and in places overriding influence on land quality'. There is the overall climate limitation for a site and there are interactive limitations which result from climate, site and soil. Appendix 1 of the MAFF ALC Revised Guidelines (1998) gives detail on the Agroclimatic Datasets.

13.- 18. Section 3.2 page 107/643 and page 4 BL013 is headed Soil Limitations in the MAFF ALC Guidelines is headed Soil Limitations and not soil characteristics. WSE have quoted substantial sections from the MAFF ALC Guidelines and refer to 'Soil Chemistry '. The wording used in the MAFF ALC Guidelines is 'Chemical Limitations'.

31.-32 Section 4.2 (110/643 and page 7 BL013). This section considers the definition of 'loss' in policy statement and the lack of definition of 'development' within the NPPF and PPW10. (others to comment). The concept of direct loss and indirect loss of agricultural land is presented. WSE present the concepts of 'direct loss' and 'indirect loss'.

32. The report states: In the case of agricultural land this is understood to mean one of the following:

- a) The land no longer being available for agricultural use- direct loss.
- b) Activity which reduces the quality of the land such that it would no longer be considered BMV land- indirect loss.

35. Reference is made to planning decisions (Appendix A) that support temporary loss of BMV as acceptable. These have not been reviewed in detail.

36. While the proposal may be viewed as temporary use of land and does not constitute permanent loss the concern should be the loss of the quality of the land.

37. WSE refer (111/643 and page 8 BL013) to the third assumption in the MAFF ALC Guidelines which concerns the impact future projects may have on potential land quality. WSE states that the converse of the third assumption is that 'if an activity which may temporarily reduce the quality of BMV land is easily reversible, then this should not be considered to result in the loss of BMV land.'

A major improvement scheme should not be considered the same as 'development'. Major improvement schemes in the context of the assumption have a design plan and planned outcomes. In the case of a flood defence scheme there is not a reversible limitation, rather a major improvement scheme to manage flood risk.

There is inherently a degree of uncertainty regarding the absolute success of a land restoration scheme to achieve any given land quality. Therefore "where there is uncertainty" could be taken to suggest that it should not automatically be assumed that land quality will be restored during decommissioning works. This "uncertainty" clause could also be applied to the likelihood that, at the end of the solar farm lifespan, it may not be returned to agricultural use. If a solar farm was today expiring, under the current system it could be classified as "non-agricultural", even if the underlying soils would otherwise be BMV.

38. The paragraph quotes ALC guidance that when a timescale and methodology are in place for any future works that may affect land quality, that the future works should be considered in any assessment. However, no timescales or methodology have been submitted let alone reviewed,

approved and financially secured such that they will definitely be put in place.

WSE consider that their approach of reversible limitations 'should be applied to the consideration of the impacts' of the solar park on BMV land. The interpretation of the assumption in the MAFF ALC Guidelines made by WSE is not valid.

40. WSE (113/643 and page 10 BL014) focus on the indirect impacts on the 'overall long-term quality of land'. The footprint of the solar park development is briefly given and again there is reference that the use of the land is 'temporary as it is easily reversible without any residual impacts upon land quality'.

48. The developer proposes to thinly disperse the excavated topsoils from the trackways in a manner that would not measurably effect soil depth. This would mean that it would be very difficult to retrieve the topsoils in order to restore the tracks during decommissioning. Spreading soil on agricultural land in such a way may be considered a waste operation. As such the soil is not considered to be safely stored for a long period of 40 years.

Soils of a similar nature and quality would then need to be found and imported to carry out restoration.

53. Mechanical disturbance of subsoil (e.g. cable laying and removal) can affect soil texture, structure and drainage.

54. Vehicle and machinery movements across the site to install and remove panels arrays, their support posts, tracks, fencing, at el, would be widespread across the site, as the installations are widespread. Therefore, the risk of soil structural damage resulting in an increased vulnerability to soil droughtiness and waterlogging would be widespread and not localized as suggested.

56. It is good that they are proposing to use small tracked vehicles, but these are usually supported by numerous movements of auxiliary vehicles that bring staff and materials back and forth to the workface.

57-58. The point about numbers of vehicle movements compared with for example, silage cutting, may be true. However, field operations undertaken by farmers are governed by suitable ground conditions being present to obtain the desired outcome. The desired outcome for contractors involved in construction or decommissioning projects is normally to meet a hard deadline or simply to complete site work as quickly as possible so they can raise the invoice and move on to another site. This is often contrary to the need to delay start dates or pause works due to suboptimum ground conditions or weather forecasts.

By far the greatest risk of soil damage from the project would be due to compaction and topsoil loss (mixing with subsoil during rutting or excavations)

due to vehicle and machinery movements and excavations. The structure of agricultural soil is inherently fragile and very easily damaged. The vulnerability to damage is directly proportional to soil moisture content. The period when ground conditions are most likely to be suitable in this agroclimatic area would be from the end of May until the beginning of September. This will commonly vary by about one month either side of these dates in any given year. Therefore, on average a 3 month window may be expected but this may commonly only be 1 month.

The developer's construction code of practice (para 46) states that construction will start in the autumn and continue for 4 months. This would involve working during some of the wettest months of the year and therefore be at greatest risk of causing soil damage.

With the Met Office long term average annual rainfall in the area of 1128 mm this would be regarded as a high rainfall area for the UK. Typical of areas in the UK with high annual rainfall, the rainfall each month does not vary as greatly as in drier areas and hence it still rains more throughout the summer months than it does in drier regions in the winter. Therefore to minimize soil damage insurance would need to be in place that the contractors undertaking construction (or decommissioning) activities were prepared and budgeted to pause works as required according to predicted or prevailing weather and ground conditions. However, it is common to see such working method statements produced at project inception but breached as timescales slip during site works. Therefore there is always uncertainty about the precise degree of land restoration success where temporary construction projects occur on agricultural land.

Structural soil damage readily occurs on construction sites and the MAFF ALC Guidelines state that where there is significant compaction on disturbed land this is a long-term limitation. Damage through soil compaction is likely to result in a change in soil structure, which usually becomes 'platy' or 'massive'. On this site such a structural change in the soil and with resultant impeded drainage could change the pre-installation Grade 2 land and Subgrade 3a land to Subgrade 3b. Furthermore, a soil limitation can occur where different soils have been mixed.

59. There is no mention of how the cables will be installed. This is presumably by mechanical excavator rather than trenchless technology (i.e. mole plough). But WSE have not discussed working methods, such as whether they will strip topsoils over the trench or trafficking width, or avoid mixing of topsoils and subsoils, etc. Thus, it is difficult to review the method if no details are given. If this was a different project this might not require a detailed description at this stage but, as they are arguing that they will not reduce the quality of BMV, perhaps in this case they should demonstrate that they have sufficient understanding of soils subject to temporary construction sites and that they have planned appropriate working methods.

With regards to the last sentence, it is inaccurate to compare the excavation and backfilling of the cable trenches as similar to ploughing, particularly

when excavating and replacing subsoils. Subsoils are also more difficult to remediate when physically damaged. But again, the developer's working method is not explicitly set down.

61. Soil depth in the sense of the ALC assessment process (i.e. total soil depth) should not be affected. However, topsoil depth could be affected because of losses if:

- construction or decommissioning are carried out during poor ground conditions that result in deep rutting that mixes topsoil with subsoil
- compaction that causes increased runoff and soil erosion
- topsoils and subsoils excavated for the tracks and cables are not stripped and stored adequately to enable their reinstatement in a suitable manner (see point 48)

80-91. All the points made within these paragraphs are inconsequential. There are risks inherent with arable farming, however, as Best and Most Versatile Land it is recognized in government policy that this land is best placed to provide consistently high value and high yields crops. Furthermore, as such it is a national resource that needs protection from development.

All the items risks listed in paragraph 80 are equally true for damage as a result of temporary construction sites. And the placement of a solar farm, for example, is not dependent on using BMV land for its production value.

The choice of farming practices is relative to the desired crop and yield. Arable crops cannot be grown if the seed is not planted. The precise method may vary and have different agriculturally productive and environmental outcomes. But this does not change the fact that whatever system is permitted or put into practice the relative quality of BMV remains unchanged compared with that of non BMV land. So there is no justification in comparing highly productive arable farming with low input grassland or any other land use.

ALC guidelines state that land should not be graded where the outcome of any change is uncertain. Therefore, the ALC grade should not make any assumption regarding likely deterioration or improvements of an individual site due to continued arable use.

The reversion of arable to grassland is likely to increase soil carbon storage and reduce the risk of soil erosion and associated nutrient losses in the short-term. These benefits will be lost when the grassland reverts to arable land. However, as the fields are currently managed as part of a ley arable rotation the organic matter levels are likely to be elevated compared to fields used for solely arable production and the soil quality is likely to be good. Consequently, the additional carbon storage benefits of converting these fields to permanent grassland is likely to be less than where fields have been used for long term arable production.

Crop yields are likely to be greater and the risk of diffusion pollution are lower when crops are grown on BMV land. Displacing agricultural production from BMV to more marginal land is likely to require greater inputs (i.e. fertiliser, plant

protection products and cultivation) increasing farm costs and reducing gross margins. Using marginal land (e.g. sloping land or land susceptible to flooding) for agricultural production is also likely to increase the risks of diffuse water pollution as a result of erosion and sediment loss.

If the pasture is not chemically or physically cultivated for over 10 years then would it not be viewed as permanent pasture and any subsequent attempt to restore the land to arable could fall foul of the EIA Regs for Agriculture (Wales), especially if they are they will establish and manage it as a species rich grassland for 40 years in the meantime – Arwel to comment

108. The carbon storage benefits and reduced risk of reduced diffuse water pollution would be lost if the fields were returned to arable rotations by converting the arable land to grassland.

112. The statement assumes that there is no uncertainty regarding the potential for soil damage that could result in a decrease in land quality (and ALC grade). Whereas in fact there is always a level of uncertainty with temporary construction projects on agricultural land, especially in high rainfall areas.

114. There may be few if any legislative mechanisms to directly control the agricultural land use but there are incentives.

- A landowner can be prosecuted for allowing an escape of sediment or increased runoff if this resulted from bad practice.
- A landowner should follow good agricultural and environmental practices to receive farm subsidies and environmental stewardship payments.
- Better land management should coincide with reduced costs of farm inputs
- the landowner should want to maintain the value and continued economic use of his own asset

115. The potential soil quality benefits and reduced risk of diffuse water pollution would be lost when the site returned to arable rotation. The Ley arable rotation currently used on the land is recognised as good practice for increasing soil organic matter levels and enhancing soil quality for agricultural production. Any additional carbon storage benefits achieved by establishing long-term grassland will be lost once the land returns to arable rotations. Displacing agricultural production from BMV land to more marginal land is likely to increase the risk of soil loss, diffuse pollution, require greater inputs and provide lower gross margins. (Same as point made at 108).

A6.1 Outline Decommissioning and Restoration Plan

There is no detail in this document. WSE have stated that the detailed Working Practices Plan would be developed 12 months prior to decommissioning.

If it were to be possible to assess the likely impact on land quality of the decommissioning works the nature of the vehicles, machinery and excavations would need to be established. For example, the equipment to extract pile driven panel supports or concreted fence posts from underground may be specialist or involve wide excavations.

There is insufficient information given to demonstrate that the quantity of BMV land at installation stage and the decommissioning stage will be the same.

References

1. MAFF Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land October 1988.