



Candwr Solar Farm

Pre Application Consultation

Environmental Statement

Chapter 8: Agricultural Circumstances

2 July 2026



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8. Agricultural Circumstances

8.1. Introduction

8.1.1. This draft Chapter is provided at Statutory Consultation of the ES provides an assessment of the potential effects on agricultural circumstances. The chapter assesses three principal resources: agricultural land (as measured under the system of Agricultural Land Classification (ALC)); soils as a resource distinct from ALC grade; and farm businesses that utilise the soils and involve economic and other considerations.

8.1.2. This chapter is supported by the following technical appendices and figures:

- **Appendix 8.1: Agricultural Land Classification** by Amet Property Ltd;
- **Appendix 8.2: Farm Reports;**
- **Figure 5.1: Agricultural Land Classification and Indicative Site Layout Overlay Plan**

8.1.3. This chapter is supported by figures which are embedded in this Chapter. The ALC plan is contained within Figure 8.1.

8.1.4. Related information is provided in the following application documents:

- **Outline Soil Management Plan** by Kernon Countryside Consultants Ltd and Amet Property Ltd.

8.2. Assessment Approach

Legislative and Policy Framework

8.2.1. There is no legislation of direct relevance to the assessment of agricultural land and soils, or of farm businesses.

National Planning Policy

*Future Wales – The National Plan (2040) (2021)*¹

8.2.2. Future Wales – The National Plan 2040 ('Future Wales') sets the direction for development in Wales to 2040. It has development plan status and sets out a strategy for addressing key national priorities through the planning system, including achieving decarbonisation, climate-resilience and achieving net zero. It constitutes the highest tier of the development plan in Wales and provides the policy context against which applications for Development of National Significance ('DNS') are determined. It is a material consideration.

¹ Welsh Government (2021). 'Future Wales: the National Plan 2040'.

- 8.2.3. Future Wales defines the “best and most versatile agricultural land” (‘BMV’) as that in Grades 1, 2 and 3a of the Agricultural Land Classification. The map on page 27 shows where across Wales land is predicted to be of BMV quality. Future Wales does not, however, set a policy on protection of agricultural land. Policy 17 identifies that large scale solar will not be permitted in National Parks or Areas of Outstanding Natural Beauty (‘AONB’). Policy 18, specifically dealing with DNS, lists the 11 criteria against which DNS development will be assessed, but none of those include agricultural land.

Planning Policy Wales 12 (2024)²

- 8.2.4. National planning policy guidance on development involving agricultural land is set out in paragraphs 3.58 and 3.59 of Planning Policy Wales (‘PPW12’). These paragraphs set out policy protecting agricultural land from development. They do not set out any policy for the use of agricultural land:

‘3.58 Agricultural land of grades 1, 2 and 3a of the Agricultural Land Classification system (ALC) is the best and most versatile, and should be conserved as a finite resource for the future.’

‘3.59 When considering the search sequence and in development plan policies and development management decisions considerable weight should be given to protecting such land from development, because of its special importance. Land in grades 1, 2 and 3a should only be developed if there is an overriding need for the development, and either previously developed land or land in lower agricultural grades is unavailable, or available lower grade land has an environmental value recognised by a landscape, wildlife, historic or archaeological designation which outweighs the agricultural considerations. If land in grades 1, 2 or 3a does need to be developed, and there is a choice between sites of different grades, development should be directed to land of the lowest grade.’

Technical Advice Notes

- 8.2.5. Planning policy regarding development involving agricultural land which is set out in PPW12 (see above) is supplemented by Technical Advice Note (‘TAN’) 6 ‘Planning for Sustainable Rural Communities’ (July, 2010)³. TAN6 provides advice on sustainable agriculture. Specific advice for development involving agricultural land is provided at Section 6.2 of TAN6. Paragraph 6.2.1 states that:

‘When preparing development plans and considering planning applications, planning authorities should consider the quality of agricultural land and other agricultural factors and seek to minimise any adverse effects on the environment.’

Local Planning Policy

² Welsh Government (2024). ‘Planning Policy Wales, Edition 12’..

³ Welsh Government (2010). ‘Technical Advice Note 6: Planning for Sustainable Rural Communities’.

- 8.2.6. i) Monmouthshire County Council's adopted Local Development Plan⁴ does not contain a specific policy on agricultural land, but follows PPW;
- ii) Torfaen CBC's Local Development Plan⁵ similarly defers to PPW;
- iii) Newport CC's Local Development Plan⁶ policy GP5 criterion iv) does not support the development resulting in the loss or reduction of quality of high quality agricultural land.
- 8.2.7. No panels are proposed in the area covered by Newport City Council.

Guidance

- 8.2.8. The following guidance has been considered:
- Institute of Sustainability and Environmental Professionals (ISEP, formerly the Institute of Environmental Management & Assessment) Guide 'A New Perspective on Land and Soil in Environmental Impact Assessment' (February 2022)⁷;
 - Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, Defra, 2009⁸;
 - Good Practice Guide for Handling Soils, The Institute of Quarrying, 2021⁹;
 - ISEP "Solar PV on Agricultural Land: Essential Components of Environmental Assessments and Reports" (December 2025)¹⁰;
 - ISEP "Soil Health and Environmental Assessment" (December 2025)¹¹;
 - Welsh Government "Agricultural Soil Policy Statement" (2025)¹².

Methodology

- 8.2.9. The Agricultural Circumstances chapter considers the following key issues:
- the potential loss or downgrading of agricultural land, as measured under the ALC;

⁴ Monmouthshire County Council (February 2014), Local Development Plan.

⁵ Torfaen County Borough Council (December 2013), Local Development Plan (to 2021)

⁶ Newport City Council (January 2015) Local Development Plan

⁷ Institute of Sustainability and Environmental Professionals (ISEP, formerly the Institute of Environmental Management & Assessment) Guide 'A New Perspective on Land and Soil in Environmental Impact Assessment' (February 2022)

⁸ Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, Defra, 2009

⁹ Good Practice Guide for Handling Soils, The Institute of Quarrying, 2021

¹⁰ Institute of Sustainability and Environmental Professionals (ISEP) "Solar PV on Agricultural Land: Essential Components of Environmental Assessments and Reports" (December 2025)

¹¹ Institute of Sustainability and Environmental Professionals (ISEP) "Soil Health and Environmental Assessment" (December 2025)

¹² Welsh Government "Agricultural Soil Policy Statement" (2025)

- the potential for structural damage to soils as a resource distinct from ALC grade;
- the potential effects at a local level on farm businesses;
- the wider potential effects on the rural, land-based economy.

Study Area

- 8.2.10. The study area for this Chapter is the Site. No soils or land quality will be affected beyond the Site.

Desk Study

- 8.2.11. The Welsh Government's Predictive Agricultural Land Classification map 2¹³, available online, was studied. This shows what ALC grade the land is predicted to be. The accompanying Guidance note (version 2.1, May 2021)¹⁴ advises on the use of the predictive map and sets out a flowchart for when field survey is required.

Surveys

Agricultural Land Quality.

- 8.2.12. Based on the Guidance Note version 2.1, where land is shown on the predictive ALC map as Subgrade 3b, Grades 4 and 5, field survey is not required. For those areas, the land is not capable of being of BMV quality and therefore the ALC grade from the predictive map has been used.
- 8.2.13. For other areas, a detailed ALC survey has been carried out. This considers the long-term physical limitations of land for agricultural use. Factors affecting the quality of agricultural land are climate (temperature, rainfall, aspects, exposure, etc.), site considerations (slope, micro-relief, flood risk) and soil (texture, structure, depth, stoniness, etc.) and the important interactions between them. These factors affect soil wetness and droughtiness and influence the choice of crops that can be grown and the level of consistency of yields.
- 8.2.14. The methodology uses a soil auger and a spade. Soil is augered down to 1.2m (or wherever stopped by stones or rocks) and the soil texture and colour is identified, together with the presence of mottles. Occasional pits are dug to better describe soil profiles and to enable a measurement of stone size and proportions.

Soils.

- 8.2.15. The **ALC Assessment (Appendix 8.1)** assesses the soils on a regular 100 metre grid. This information is used to determine the distribution and type of soil found across the Site.

¹³ Welsh Government (2019) Predictive Agricultural Land Classification.

¹⁴ Welsh Government (May 2021), Predictive ALC Guidance Note version 2.1.

8.2.16. *Farming Considerations.*

8.2.17. Each of the farm businesses involved was assessed by way of an interview with the farm business owners and operators, and a walk-over of the land within the Site.

Modelling

8.2.18. No modelling was undertaken for the Agricultural Circumstances Chapter.

Cumulative Effects Assessment Methodology

8.2.19. The assessment of potential cumulative effects focusses on agricultural land quality, on the basis that information about soils and farming circumstances is generally not available for most applications.

8.2.20. For each application, the planning application documentation has been reviewed, in particular the availability of any ALC reports. In the absence of ALC information (by way of a technical report, reference in the Planning Statement or reference in the officer's report), the predictive ALC map 2 has been reviewed.

Assessment of Significance

8.2.21. The significance of an effect is determined based on the sensitivity of a receptor and the magnitude of an impact. This section describes the criteria applied in this chapter to characterise the sensitivity of receptors and magnitude of potential impacts.

8.2.22. The approach to determining the significance of effects is a three-stage process that involves defining the sensitivity of the receptor and the magnitude of the impact, and then referencing the matrix to determine significance.

Criteria for Receptor Sensitivity

8.2.23. The criteria for defining sensitivity in this chapter of the ES are outlined in **Table 8.1** below. These criteria place all land of Best and Most Versatile quality into the "high" sensitivity category, which is the highest.

8.2.24. The methodology draws from the ISEP Guide, but varied as follows for the reasons now identified. In the ISEP Guide all land of BMV in Wales is classified as "very high" sensitivity. We have amended the methodology because otherwise it results in what we consider is an inaccurate assessment of effects. If all BMV land is classified as very high sensitivity and the magnitude guidelines of ISEP are followed (as is proposed), an irreversible loss of 0.1 ha of land of BMV quality would result in an effect defined as of "moderate" significance, which is significant. That would not be a reasonable assessment of the significance of the effect, given that an estimated 19% of agricultural land in Wales is identified on the provisional ALC as of BMV quality, some 321,600 ha. Land quality loss is a national policy matter. The threshold for consultation with The Welsh Ministers for development which is not for agricultural purposes and which is not in accordance with the development plan is 20 ha.

- 8.2.25. The methodology followed in this Chapter places all BMV land in the “high” category. The methodology followed consequently results in the irreversible loss of more than 5 ha of land of BMV being a moderate adverse effect which is significant. It is considered this a reasonable assessment approach. The irreversible loss of more than 20 ha, which is the threshold for consultation with the Welsh Government for loss of agricultural land, is categorised as a major adverse effect, which is significant.
- 8.2.26. The assessment of sensitivity and effects used in this chapter therefore accords with the policy in Planning Policy Wales (PPW). PPW gives considerable weight to the protection of land of BMV quality. Future Wales Policy 18 makes no reference to agricultural land in the development management criteria for Renewable and Low Carbon Development of National Significance (DNS). The criteria used in this assessment seek to give importance to BMV land that would be in line with the importance given to BMV land in the planning balance for other types of development, based on the assessor’s experience.
- 8.2.27. The sensitivity criteria used are shown in **Table 8.1**. The reference to Field Capacity Days (FCD) for assessing soils for the Site is set out in the **ALC Assessment (Appendix 8.1)** as between 209 and 222 FCD, and accordingly under 225 FCD (see **Table 8.1**).
- 8.2.28. Farm businesses are continually subject to pressures for change. This may result from the weather, diseases, world commodity prices, ill-health, personal wishes, Government incentives etc. As a consequence farm businesses are considered resilient to change and accordingly no farm businesses are placed in the high sensitivity category. Wider land-based or related supply chain effects are also resilient to change and are not of high sensitivity.

Table 8.1: Criteria for Receptor Sensitivity

Value (Sensitivity)	Description		
	Agricultural Land Quality	Soils Sensitivity to Structural Damage	Effects on Farm Businesses
High	Land of ALC Grades 1, 2 and 3a	High clay soils where the Field Capacity Days ¹⁵ (FCD) is >150.	No farm businesses are considered to be of high sensitivity.
Medium	Land of ALC Subgrade 3b	Medium textured soils where the FCD is <225.	Full time farm businesses where the location of land is particularly important such as dairy farms. Farms affected outwith the Site boundary.

¹⁵ This is the number of days per annum when the soils are saturated with water. The FCD is determined under the ALC climate data assessment. In this area it is between 150 and 225 FCD.

Value (Sensitivity)	Description		
	Agricultural Land Quality	Soils Sensitivity to Structural Damage	Effects on Farm Businesses
Low	Land of ALC Grades 4 and 5	Soils with a high sand fraction where the FCD is <225.	Farms with low sensitivity to change e.g. arable land, part-time farms or where land is held on short term arrangements. Related wider economic implications
Negligible	Indirect or unproven links to agricultural land	No soils are considered to be of very low sensitivity.	Agricultural land that is not farmed or does not form part of a farm business.

Criteria for Magnitude of Change

- 8.2.29. The magnitude of impact to a receptor has been determined by considering the estimated deviation from baseline conditions both before, and, if required, after secondary mitigation. The scale used for determining the magnitude of an impact is set out in **Table 8.2** and is based on the principles of the ISEP Guide for land quality and soils, and on professional judgement for farm businesses. The thresholds for impacts have been set at 20 ha for a major magnitude impact, which equates with the threshold for consultation with the Welsh Government where the loss of 20 ha of more of BMV land for development not in accordance with the development plan is involved.
- 8.2.30. The ISEP Guide describes losses in Table 3, for assessing magnitude, as “*permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading)*”. The ISEP Guide identifies “*temporary, reversible loss of soil-related features*” as a low magnitude of impact. The ISEP Guide does not specify a period for which a change can be considered temporary. The footnote to Table 3 states that “*temporary developments can result in a permanent impact if resulting disturbance or land-use change causes permanent damage to soils*”. Therefore long-term but temporary and reversible works are still within the ISEP definition of low magnitude. This approach has been used in this assessment.

Table 8.2 Criteria for Magnitude of Change

Impact Magnitude	Description	
	Agricultural Land Quality and Soils	Farm Businesses
High	The proposed development would directly lead to the loss (including permanent sealing or land quality downgrading) of over 20ha of soil-related features; or potential for improvement in one or more soil functions over an area of more than 20ha.	Full-time agricultural business would be rendered non-viable.
Medium	The proposed development would directly lead to the loss (including permanent sealing or land quality downgrading) over an area of between 5ha and 20ha of soil-related features; or potential improvement in one or more soil functions over an area of between 20ha and 50ha	Significant changes in the day-to-day management of a full-time agricultural business, or closure of a part time agricultural business. Significant impacts on related supply chains or businesses. Loss of buildings or impacts on drainage or water supplies affecting the potential for at least 5ha of adjacent land to be farmed fully.
Low	The proposed development would directly lead to the loss (including permanent sealing or land downgrading) of less than 5ha of soil-related functions; or potential for improvement in one of more soil functions over an area of less than 20 ha; temporary, reversible loss of soil-related features.	Minor changes in the day-to-day management/structure of a full-time agricultural business or land required would have a significant effect on a part time business. Minor impacts on related supply chains or businesses. 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 required would require only negligible changes in the day-to-day management of a full-time agricultural business or land would require only minor changes to a part time farm business. Effects on non-farming land uses, eg horse grazing.

Criteria for Determining Significance

- 8.2.31. The method employed to determine the significance of the effect is presented in **Table 8.3**.

Table 8.3: Significance Matrix

Magnitude of Change	Sensitivity of Receptor				
		High	Medium	Low	Negligible
	High	Major	Moderate	Minor	Minor
	Medium	Moderate	Minor	Minor	Negligible
	Low	Minor	Minor	Negligible	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

- 8.2.32. For the purpose of this assessment, any effects with a significance level of major or moderate are considered to be “significant” in terms of the EIA Regulations. Any effects which are minor or negligible are considered to be “not significant” in terms of the EIA Regulations.

Consultation

- 8.2.33. **Table 8.4** below describes the consultation that has been undertaken with respect to the assessment of the Proposed Development’s likely significant agricultural effects. This is the responses to the **EIA Scoping Report (Appendix 2.1)**.

Table 8.4: Summary of Correspondence with Statutory Consultees

Consultee	Summary of Comments	Applicants Response
Newport County Council ¹⁶	Agree with the approach to assessing agricultural impact. Attention is drawn to LQAS comments on policy.	The comments are noted. Compliance with policy is reviewed in this Chapter.
Welsh Government Land Quality Advisory Service (LQAS)	Detailed assessment is needed of all components of the construction/ installation process and the effects this could have on soils and land quality.	This Chapter, coupled with the outline Soil Management Plan , examines the works of construction and installation, assesses and quantifies adverse and beneficial effects on soils and land quality.

¹⁶ Torfaen County Borough and Monmouthshire Country Council responses made no specific comments relevant to this Chapter

Welsh Government Land Quality Advisory Service (LQAS)	A soil management scheme should be developed, informed by the baseline, to determine the potential for adverse effects on soils. The reversibility of the proposed works needs to be evidenced.	An outline Soil Management Plan has been prepared which sets out management practices to avoid loss of agricultural land. The potential for effects to be minimised has been considered and informs the assessment in this Chapter.
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Scoping Criteria

8.2.34. This chapter considers the following.

Table 8.5: Issues considered within this assessment

Activity	Impacts scoped into the assessment
Construction	
Construction activity including installation of solar PV modules, trenching and fixed equipment, and related trafficking with vehicles.	• Short-term, long-term or permanent effects on agricultural land quality, especially land of BMV quality. • Short-term, long-term or permanent effects on soils as a resource, including effects of compaction or soil mixing. • Disruption of farming activities during the construction period.
Operation and maintenance	
Management and maintenance of the solar farm.	• Potential effects on land quality, especially land of BMV, from ongoing maintenance activities over the duration of the operational period.
Maintenance activities and long-term use of land as grassland under and around the solar PV modules.	• Any effects, negative or beneficial, from long-term grassland use in combination with solar PV arrays.
Operation of the solar farm.	• Effects on farm business from the management of the solar farm and reduced agricultural activity. • Effects on the wider rural economy and on food production from limitations to agricultural use during the operational phase.

Decommissioning	
Physical removal of the solar PV modules, removal of fixed equipment and restoration of land under fixed equipment.	- Potential for loss or downgrading of agricultural land, especially that of BMV quality, from the decommissioning activities. - Potential effects on soils from the physical activities.
Decommissioning works	Disruption to farming activities during the decommissioning works.

- 8.2.35. Effects which are not considered likely to be significant have been scoped out of the assessment. A summary of the effects scoped out is presented in **Table 8.6**.

Table 8.6: Issues scoped out of the assessment

Issue	Justification
Construction and decommissioning effects on local agriculture out with the Site.	It is assumed that other farms in the area will not be affected by construction activity such as traffic or dust, at construction, operation and decommissioning phases.

Limitations to the Assessment

- 8.2.36. There are no significant limitations to the assessment. Information provided as part of the assessment regarding the operation of farm businesses has been taken at face value, although validated by site observations so far as possible.
- 8.2.37. It is assumed that the land quality and soils will not change over the duration of the Proposed Development in the absence of the Proposed Development. It is acknowledged that various studies by the Welsh Government have considered the potential effects on land quality as a result of climate change, but there is insufficient precision to enable any reliable assumptions of change to be considered.

Baseline Survey Information

- 8.2.38. Available information on land quality and soils was studied, as set out in **Table 8.7**.

Table 8.7: Summary of desk study sources

Title/Organisation	Data Source / Year	Data Used
Welsh Government	Predictive ALC Map v2	Baseline predictive ALC data

- 8.2.39. The Site is shown on the Predictive ALC as a complex mixture. An area of Grade 1 is shown near to Ponthir sewage treatment works, with the Site otherwise a complex mix of Grades 2, 3a, 3b and some Grade 4.

8.2.40. Site specific surveys were therefore carried out as set out in **Table 8.8**.

Table 8.8: Summary of site specific surveys undertaken

Survey type	Purpose of survey	Date undertaken
Detailed ALC field survey of areas shown as Grades 1, 2 and 3a	To gather data on soils in order to be able to assess ALC grade.	August 2025, updated June 2026
Interviews with farmers and walk-over survey	To gather information about farming operations and the use of the land.	November 2025

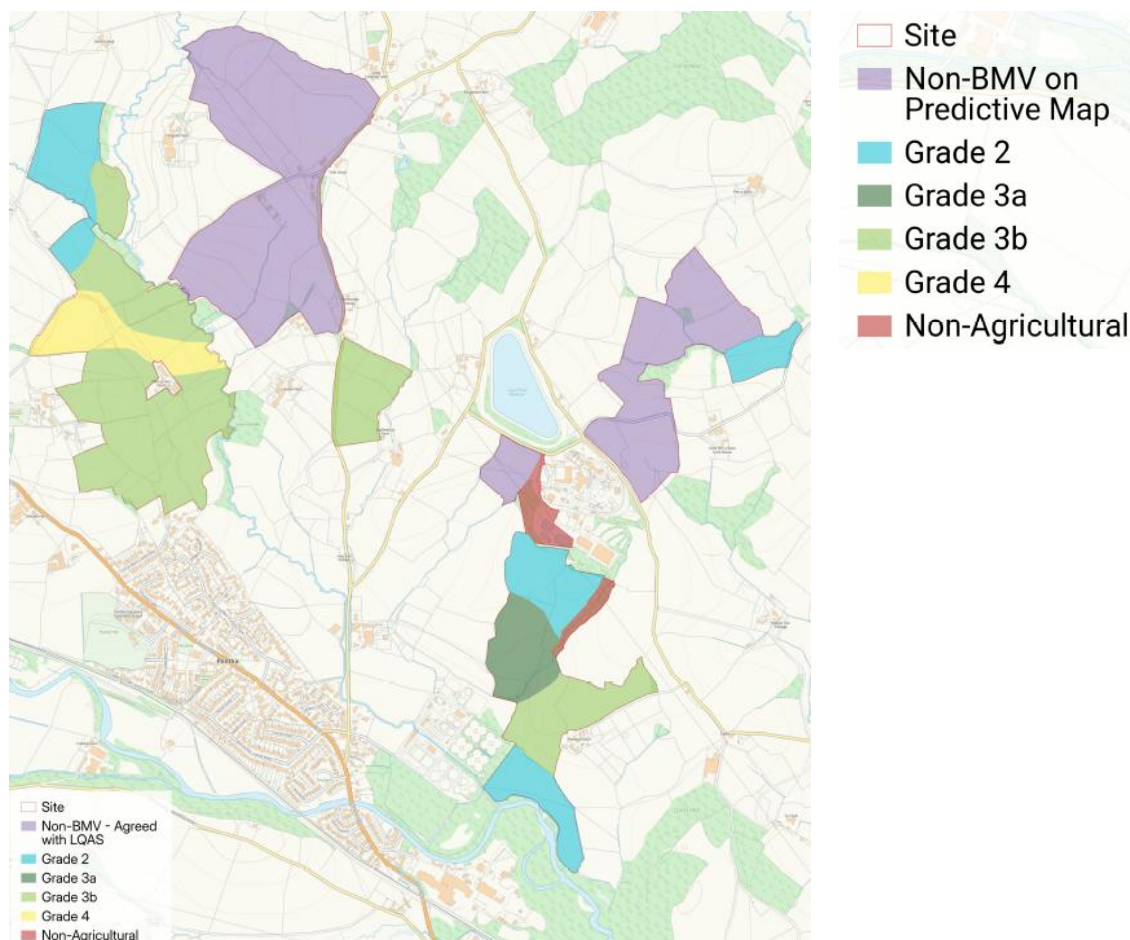
8.3. Baseline Conditions

Site Description and Context

Agricultural Land Quality.

8.3.1. The ALC results are reported in the **ALC Assessment**, at **Appendix 8.1**. The results are shown on **Figure 8.1** in this report below. The land shown as purple is land that is identified on the Predictive ALC as non-BMV or which it was agreed in advance between Amet Property and the Welsh Government Land Quality Advisory Service did not need to be surveyed because any areas of potential BMV could not be meaningfully exploited.

Figure 8.1: Agricultural Land Classification Results



- 8.3.2. The results are presented in **Table 8.9**. This sets out the results of the ALC field survey, and separately records the non-BMV area from the Welsh Government predictive ALC v2. The ALC covers 120.7 ha of the 131.6 ha site, with the non-surveyed land including mostly roads, tracks, temporary access routes etc, and land associated with the temporary construction access road.

Table 8.9: ALC & Predictive Results

ALC Grade	Area (ha)	Proportion (%)
Survey Results		
2 Very good	17.8	13.4
3a Good	5.4	4.1
3b Moderate	36.6	27.7
4 Poor	6.2	4.7
Non-agricultural	2.9	2.2
Predictive ALC Results		
Non-BMV land ¹⁷	51.4	38.9
Non-agricultural land not surveyed (eg access tracks, roads)	0.4	0.3
Parcels 14 and 15 (predictive Grade 2 and non-agric)	11.5	8.7
Total	132.2	100

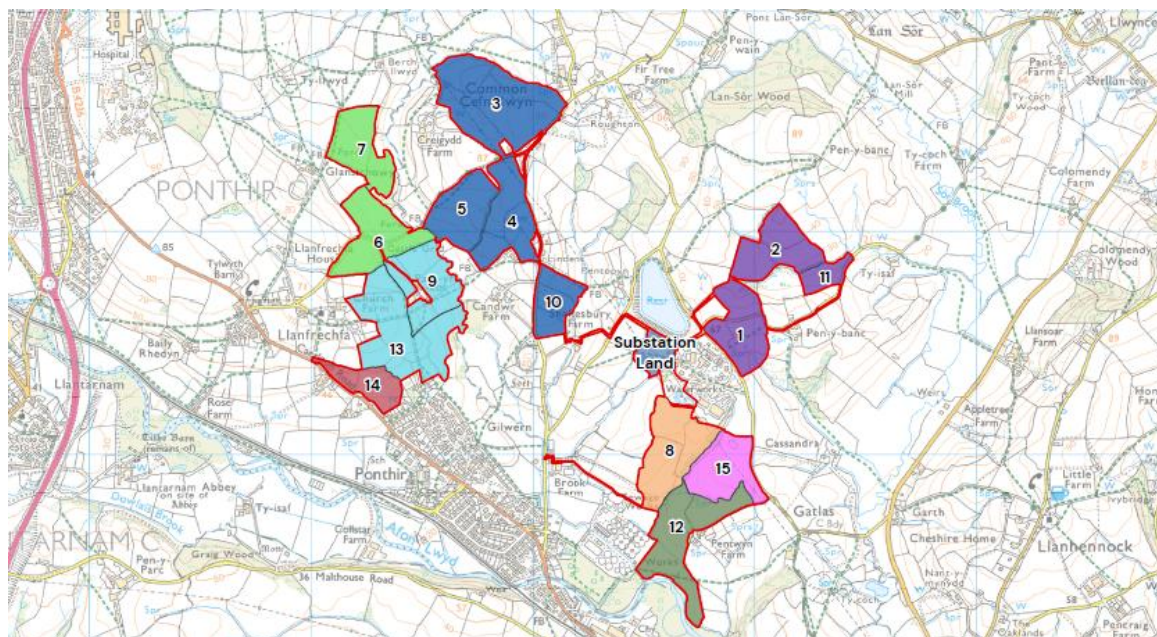
- 8.3.3. Consequently the majority of the Site is non-BMV or predictive non-BMV, accounting for 97.5 ha of non-BMV or non-agricultural land. Only 23.2 ha of the Site is BMV, distributed in four different areas as shown on **Figure 8.1** embedded in this chapter. Parcels 14 and 15 for short-term or non-intrusive works, and have not been surveyed.

Land Use.

- 8.3.4. This section of the ES now reviews the baseline land use. For ease of reference an extract from the field numbering plan is reproduced below.

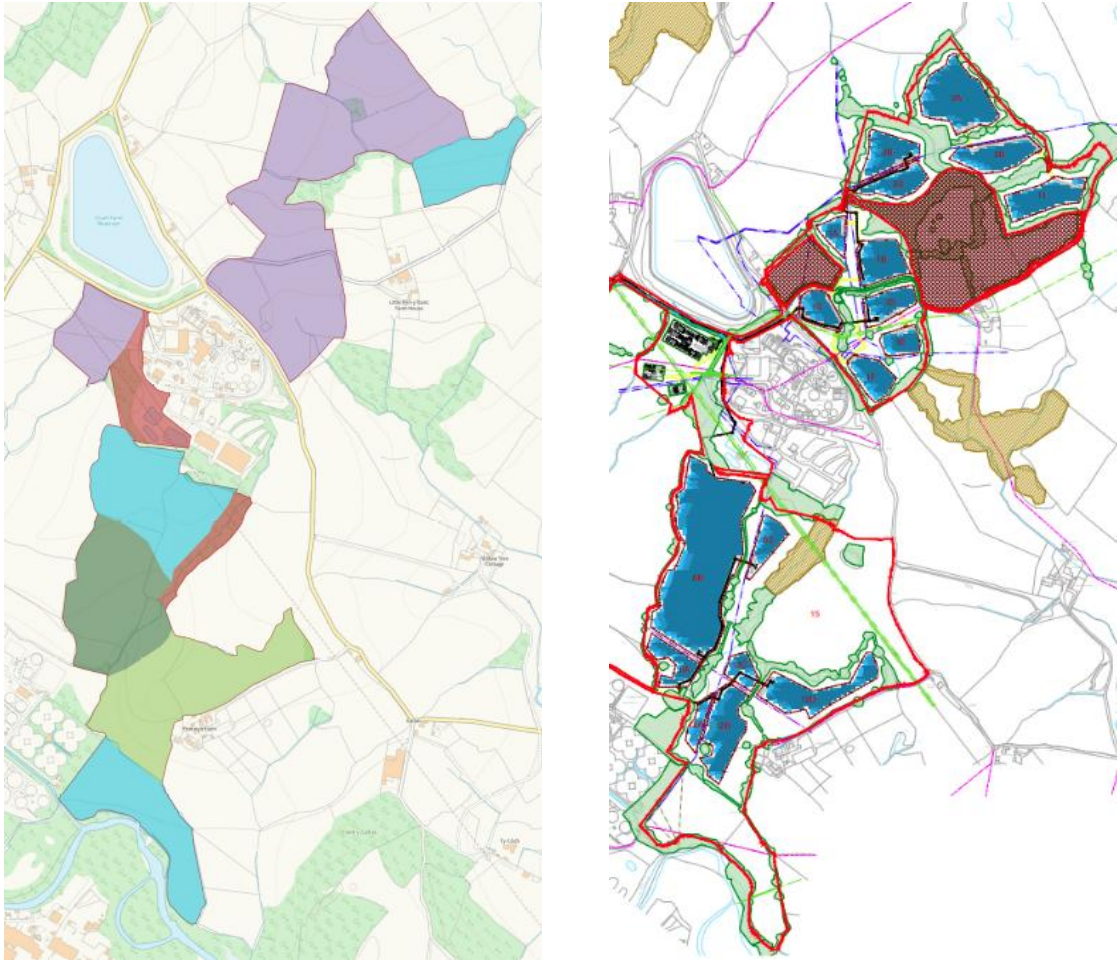
¹⁷ Area agreed with Welsh Government did not need to be surveyed as any BMV land could not be exploited.

Figure 8.2: Extract from Land Parcel Plan



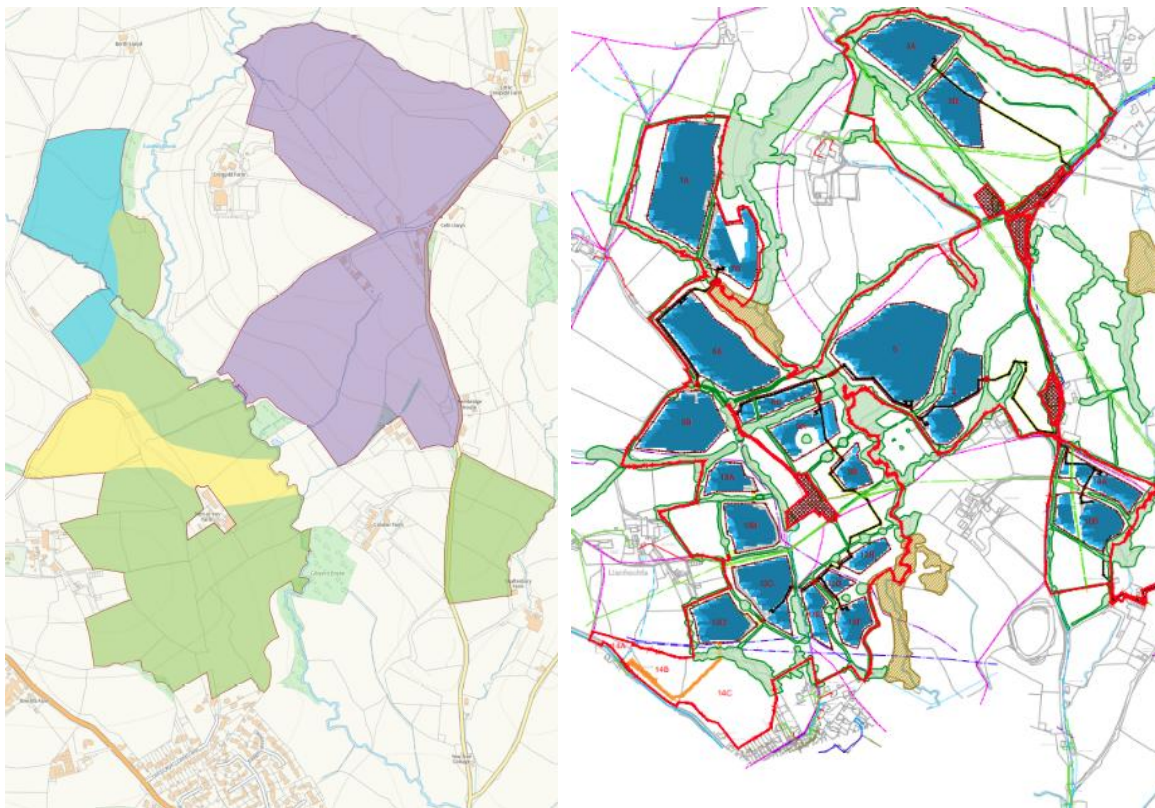
- 8.3.5. The following extracts from the site layout and ALC plans show the eastern and southern part of the Proposed Development. The majority of the area is non-BMV, but panels are proposed on BMV land in parcels 8 and 11. No panels are proposed on land of BMV quality in parcel 12. Parcels 14 and 15 are proposed for short-term temporary works or non-intrusive land uses, and have not been surveyed. Parcels 14 and 15 are mostly predictive Grade 2.

Figures 8.3 and 8.4: Excerpts from ALC and Layout Plan



- 8.3.6. On the western part of the Site, almost all of the land is non-BMV. As compared below, panels are proposed on Grade 2 land in parcels 6 and 7.

Figures 8.5 and 8.6: Excerpts from ALC and Layout Plan



- 8.3.7. In terms of baseline information, various field parcels are shown in the following photographs, showing areas of BMV quality.

Photo 1: Looking North-West Over Subgrade 3b towards Grade 2 in Field 6



Photo 2: Looking South Over Grade 2 in Field 7



Photo 3: Looking South over Grade 2 and Subgrade 3a in Field 12

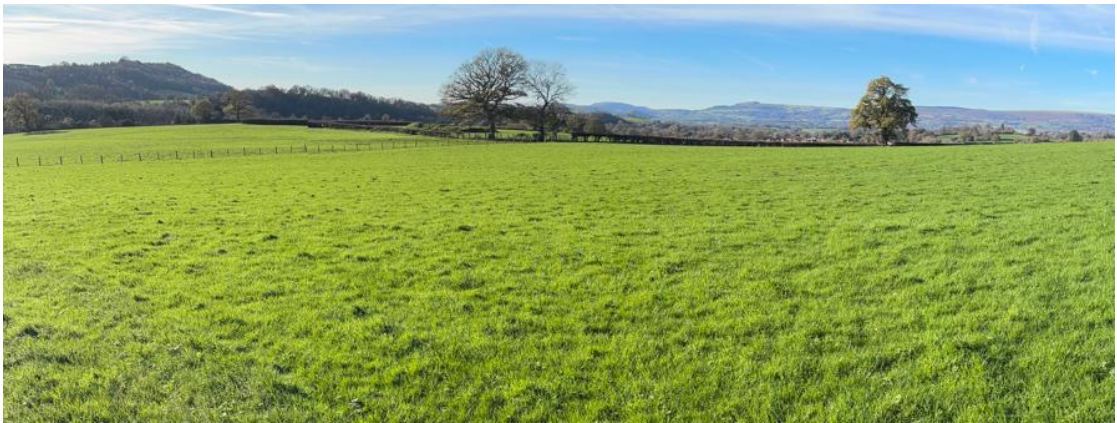


Photo 4: Looking North East over Grade 2 in Field 11



- 8.3.8. The majority of the Site is non-BMV land. Some of this is shown in the following photographs.

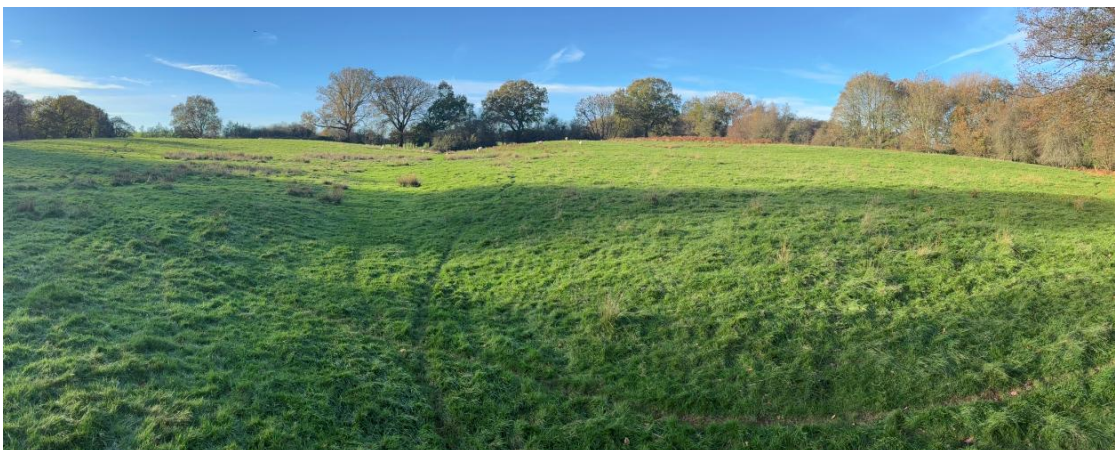
Photo 5: Looking North over Subgrade 3b in Parcel 6



Photo 6: Looking West over Non-BMV in Parcel 3



Photo 7: Looking West over Non-BMV in Parcel 2



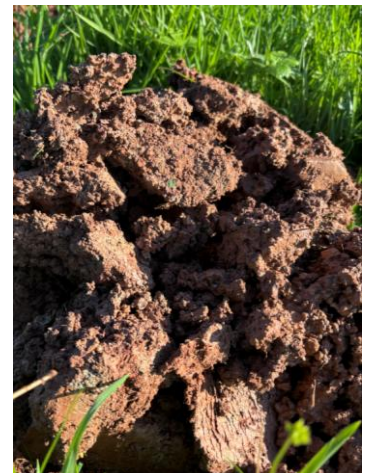
Soils.

- 8.3.9. The soils across the area surveyed for the ALC are described in the **ALC Assessment Appendix 8.1**. The survey covered the areas identified as possibly of BMV quality. Two principal types of soil were identified.
- i) type 1, clay loam or silty clay loam over poorly-structured slowly-permeable clay loam or clay;
 - ii) type 2, clay loam or silty clay loam over moderately structured permeable clay loam or silty clay loam, sometimes shallow over rock.
- 8.3.10. Photographs of the soils identified are included in the **ALC Assessment, Appendix 8.1**.
- 8.3.11. The soil resource is described further in the **outline Soil Management Plan (oSMP)**. The two types of soils are similar, with a similar reddish colour and an indistinct colour change between topsoil and upper subsoil. Examples of Type 1 and 2 soils, from the oSMP, are provided below.

Photos 8 – 10: Type 1 Soils



Photos 11 – 13: Type 2 Soils



8.3.12. In some parts of the site physical survey was stopped at depths of 30 to 60cm due to stones or rocks in the profile. These areas are identified in the oSMP.

8.3.13. Type 1 soils are found across most of fields 6, 7 and 13, with Type 2 soils found or assumed across the rest of the Site.

Farming Businesses.

8.3.14. There are six farm ownerships operating or owning farmland within the Site. These are summarised in **Table 8.10**. The land ownership is divided as shown on **Figure 8.7** embedded in this chapter. No data is presented for the substation area or for Parcels 14 and 15. The information will be incorporated in the final ES submission.

Figure 8.7: Land Ownership Plan

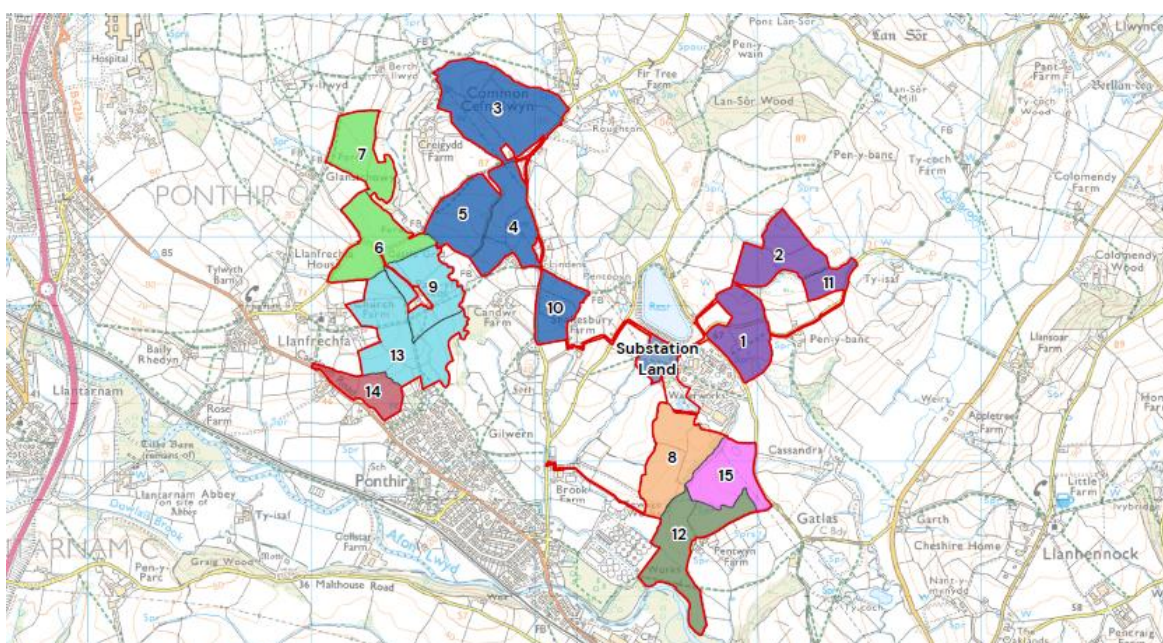


Table 8.10: Farming Details

Reference	Field Parcel	Description
A	12	A bare (ie no buildings) parcel of 20 ha, let for grazing or mowing
B	8	A 40 ha holding rearing sheep and with an equine livery yard
C	3, 4, 5, 10	A holding of 405 ha, mixed arable and grassland. Grazing land is mostly let out. The farm has a livery enterprise.
D	9, 13	A 28 ha holding with a small beef herd
E	6, 7	A 60 ha mixed beef and sheep holding, mostly owned, with land let for grazing and mowing
F	1, 2, 11	A 32 ha mostly sheep farm, owned, with some mowing

- 8.3.15. In terms of whether these are full-time or part-time enterprises, only one holding operates as a full-time farm business. This is relevant when determining sensitivity in **Table 8.1**
- 8.3.16. There is only one farm building within the Site, which as shown below is not used.

Photo 14: Unused Farm Building, Parcel 8



- 8.3.17. Short reports and additional photographs for each farm business are set out in **Appendix 8.2– Farm Reports**.

Future Baseline

- 8.3.18. The baseline is not expected to change in the future. There will inevitably be changes in cropping and stocking, and potentially the introduction of greater amounts of agri-environmental management, but overall the land quality and soils will not change, and ongoing farming enterprises of some type is expected to continue.

8.4. Assessment of Likely Significant Effects

- 8.4.1. The impacts of the construction, operation and maintenance, and decommissioning phases of the Proposed Development have been assessed. The potential impacts arising from the construction, operation and maintenance and decommissioning phases of the Proposed Development are listed in **Table 8.5**. A description of the potential effects on receptors caused by each identified impact is described in the following sections, and then identified for each key phase.

The assessment draws a distinction between land loss and land use change. Land loss is the irreversible loss or permanent damaging of a resource, and is a permanent impact. Land use change is where the land resource is not irreversibly developed, but its use or intensity of use may change, or where the impact is only temporary. Land loss usually occurs at construction, and is assessed accordingly. The effects of land use change are considered under the operation and maintenance phase, and are reversible changes. As identified in the ISEP Guide, temporary and reversible impacts are all considered to be low magnitude impacts.

Effects During Construction

Sensitivity of the receptors

8.4.2. The sensitivity of the receptors is assessed as follows:

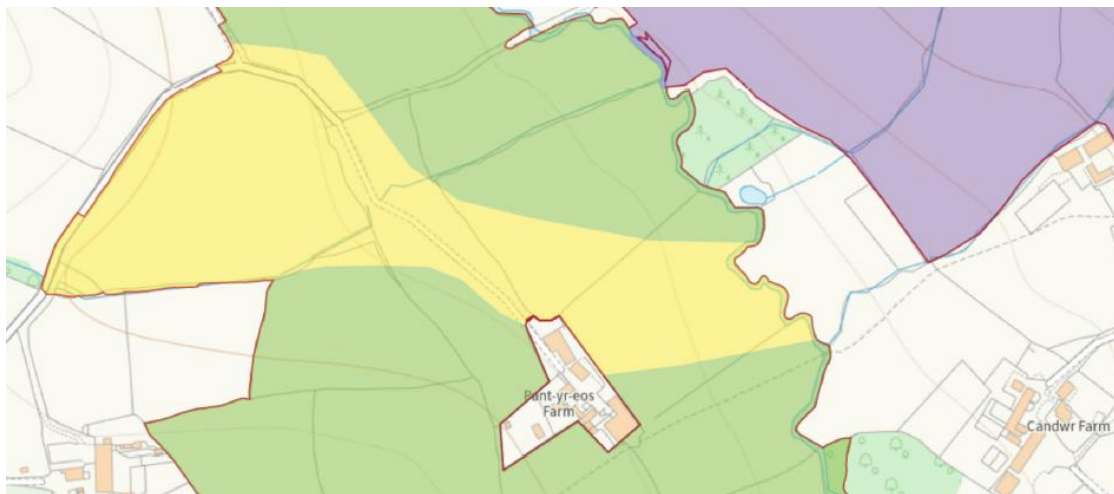
(i) *Agricultural land quality.*

8.4.3. Across the Site the land quality is a mixture of Grades 2, Subgrades 3a and 3b and Grade 4. Grade 2 and Subgrade 3a, being land of BMV quality, is of high sensitivity and Subgrade 3b land is of medium sensitivity. Grade 4 is of low sensitivity;

Soils.

8.4.4. The climate in the area is mild and wet. The Field Capacity Days, for the ALC methodology, is around 210–222 days per year. The soils have been identified as mostly medium clay loam, with heavy silty clay loam in places. Under Table 4 of the ISEP Guide, medium clay loams are of medium sensitivity (medium resilience to structure damage) in this climate area. Only soils of heavy silty clay loam are of high sensitivity. The **ALC Assessment (Appendix 8.1)** identified these soils at auger locations 13 – 17, 20 and 21. The area is classified as Grade 4 and is shown below.

Figure 8.8: Area of High Sensitivity Soils (yellow)



Farm businesses and agricultural production.

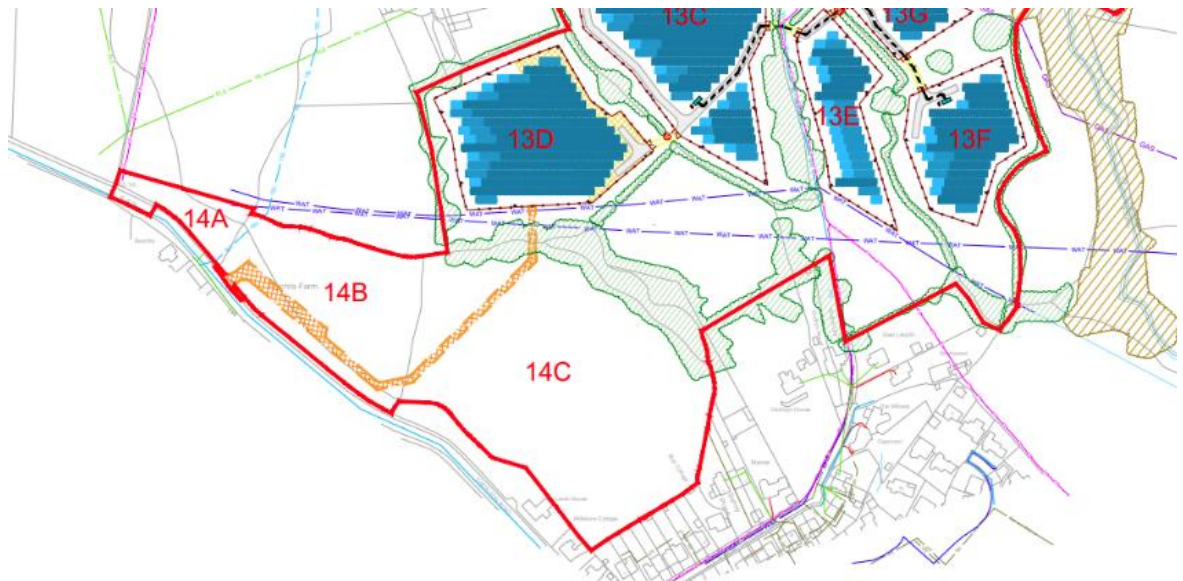
8.4.5. The majority of the land across the Site is grassland, mostly grazed by sheep with some land mown for winter forage in addition. Part of parcel 3 is used for arable cropping (non-BMV land). All farm types are therefore of low sensitivity (**Table 8.3**).

8.4.6. The magnitude and significance of the construction phase impacts are assessed in the following sections. This reviews the various stages in the construction process and the potential impacts are identified. This section considers the following construction stages:

- (i) temporary access and construction compounds;
- (ii) access and maintenance tracks;
- (iii) installation of the PV modules;
- (iv) installation of fixed equipment (inverters and transformer stations);
- (v) fencing and cabling;
- (vi) landscaping and environmental enhancement works;
- (vii) drainage works.

8.4.7. **Temporary Access and Construction Compounds.** Temporary access is proposed across parcels 14B and 14C, as shown below, to the temporary construction compound in parcel 13D.

Figure 8.9: Temporary Access Proposals



8.4.8. This area has not been surveyed for ALC, but will be affected only temporarily. It is shown on the Predictive ALC map as mostly Grade 2, as was most of the land to the north, which was subsequently found to be Subgrade 3b during ALC survey. For the purposes of assessment, it is assumed that this area is of BMV quality, and that it will be returned to BMV after construction is complete. It extends to 1.4 ha.

8.4.9. The initial works will likely involve the laying of a temporary surface, as per the example shown below, enabling a route for the importation of material. These can be removed once ground conditions are suitable.

Photos 15 and 16: Temporary Track Construction



- 8.4.10. Topsoil will then be removed from the route of the track to a temporary store, matting laid down, and the track material imported, as per the example below. These works need to take place when the soils are dry.

Photo 17: Temporary Site Access (North Hykeham Relief Road)



- 8.4.11. The principal construction compound is proposed in part of parcel 13D, which is Subgrade 3b, and is shown below looking north.

Photo 18: Area for Temporary Construction Compound



- 8.4.12. Construction compounds are temporary areas, and will be fully restored at the end of the construction phase. 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, typically as shown in Photo 19. On restoration the process is reversed, and the topsoil is replaced. Construction compounds will normally be in place for no more than a year, and soils will not have deteriorated if stored as set out in the **oSMP**. Works will be undertaken under the guidance of the final Soil Management Plan (which will be developed from the **oSMP**), and will give full attention to Defra's Construction Code of Practice and the soil suitability criteria in the Institute of Quarrying Good Practice Guide .

Photo 19: Newly Installed Construction Compound



- 8.4.13. Secondary temporary construction compounds are proposed to the east of the water works on non-BMV land on Parcel 1C, photographed below, and on non-BMV land in Parcel 10.

Photo 20: Location of Proposed Construction Compound Parcel 1C

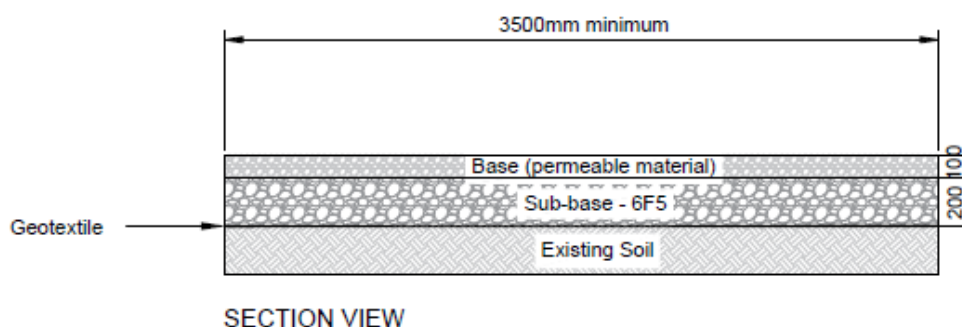


Photo 21: Location of Proposed Construction Compound in Parcel 10A



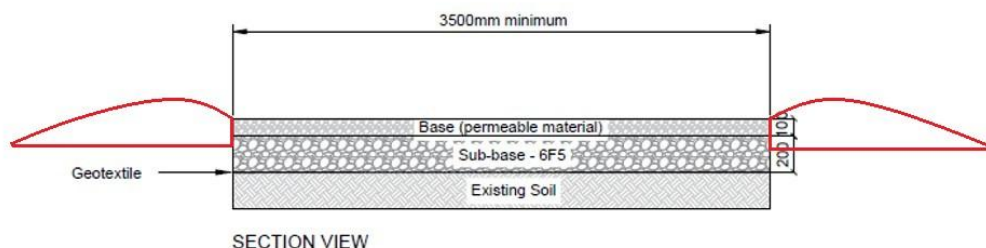
- 8.4.14. These works are temporary and short or medium term. They are fully reversible. The impact is of **Low** magnitude, on agricultural land of **Medium** sensitivity, and soils of **High** or **Medium** sensitivity, resulting in **Minor adverse** effects, which are **not significant**.
- 8.4.15. **Access and Maintenance Tracks.** 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. In the case of topsoil removal this will be stored alongside the track, for easy restoration at the decommissioning phase, if required. The volumes are very small and the land can be mown or grazed throughout the operational phase. A cross-section of the proposed access track is shown below. Typically the dig depth will be 200mm.

Figure 8.10: Extract from Access Track Drawing



- 8.4.16. As set out in the **oSMP**, for a 3.5m wide maintenance track with a 200mm excavation, for every metre run of track only 0.6 cubic metres of soil is displaced, which can be retained adjacent to the track as shown below.

Figure 8.11: Soil Stores Adjacent to a Typical Maintenance Track



- 8.4.17. In some places a non-dig track will be provided, eg within root protection areas. This will sit on the topsoil, with no excavation.
- 8.4.18. Tracks are usually installed early in the construction process, to provide access to the panel areas. A typical track is shown below.

Photo 22: Typical track



- 8.4.19. In most places the tracks follow field edges, and deviations from field edges have been minimised so far as possible. The tracks will be fully restorable on decommissioning and involve the long-term but temporary loss of 0.3 ha of Grade 2 and 3a land and 2.4 ha of Subgrade 3b non-BMV land, calculated as shown in **Table 8.11**.

Table 8.11: Estimate of Land Affected by Temporary Tracks (rounded to nearest 0.1 ha)

ALC Grade	Area in Ha
2 Very Good	0.2
3a Good	0.1
3b and Non-BMV	2.4
Total	2.7

- 8.4.20. The impact on BMV is therefore a **Low** magnitude impact (it is below 5 ha and it is temporary and reversible) on resources of **High** and **Medium** sensitivity, resulting in **Minor adverse** effects, which are **not significant**.
- 8.4.21. **Installation of PV modules.** The process involves marking out the grid on the ground, which is done on foot. Teams then lay out the piles. This stage is non-intrusive and should take place when soils are suitably dry. A tractor and trailer will typically be used to transport the piles to the fields, then each pile is lifted off by hand.
- 8.4.22. Construction workers then drive the piles into the ground. 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 22.

Photo 23: Framework piles being installed



- 8.4.23. The design of PV modules varies from one project to another, and so the design may differ from these photographs, but the framework piles are all similar. The limited impact of installing the piles on the underlying land is illustrated in Photo 23. The purpose of the photograph is to show that the machinery typically used is small, and 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 piles as they enter the ground and to show the absence of adverse effects of construction traffic on the soils.

Photo 24: Framework posts being installed (taken at Tiln Farm, Retford, in January 2023)



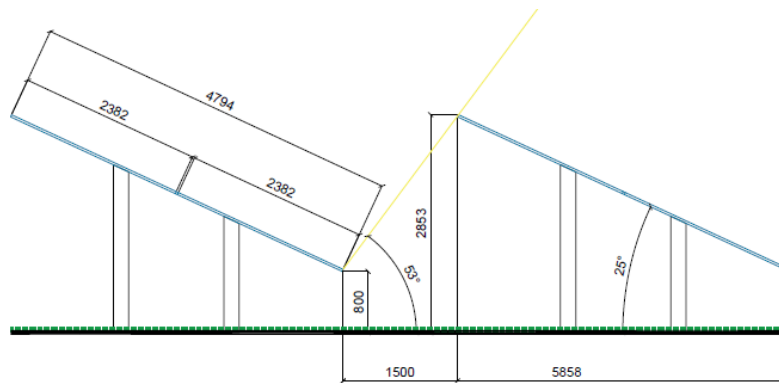
- 8.4.24. There is minimal damage caused by the next stage of the construction process, which is the assembling of the framework and the bolting-on of panels. This stage requires the framework and panels to be transported to site. They are lifted off by hand and assembled by hand. Machinery travels down the lines between the strings of panels being assembled. There is no ground disturbance, so the only risk comes from travelling over the land in typical agricultural-sized machinery.

Photo 25: Part installed panels (Bentham Farm, Purton)



- 8.4.25. The design for this Site is shown below.

Figure 8.12: PV module design



- 8.4.26. Electrical cables need to be connected between the solar PV modules and the on-site substation. This will involve trenches, dug with a machine. The trench width will depend upon the size of cable. 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. This looks disruptive but the disturbance of the soil is limited to the width of the trench. Once the cable has been inserted the subsoil is then replaced, with the topsoil put back on the top.
- 8.4.27. 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. This is illustrated in Photographs 25 and 26, which were taken at a solar development site 14 days after the trench was first dug, for a development similar in nature to the Proposed Development but with lower panel heights. The photograph is included to illustrate the short-term limited effects of the activity on the soils.

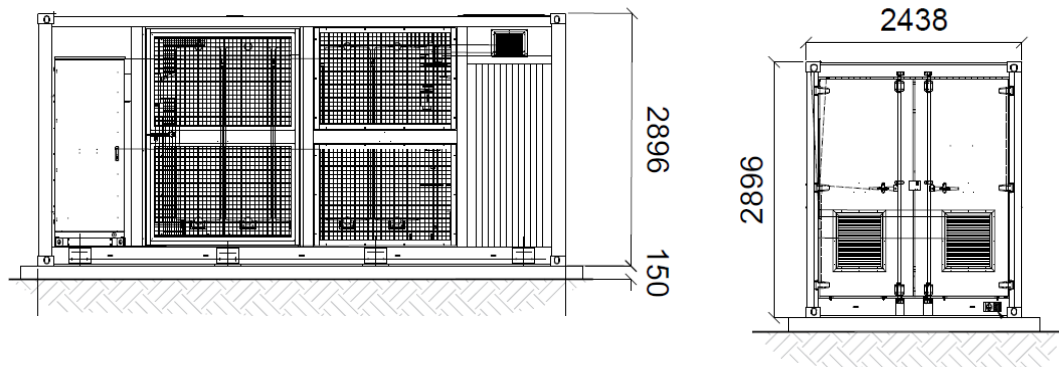
Photos 26 and 27: Cabling channels during cable installation



- 8.4.28. Overall, the PV module installation including cabling will result in a short-term, reversible but **Negligible** magnitude impact on land quality. A negligible impact on resources of **High** or **Medium** sensitivity results in a **Minor** or **Negligible adverse** effect, which is **not significant**.

- 8.4.29. **Fixed Equipment.** Fixed equipment such as Inverters, Spares Parts Containers and Transformers typically stand on concrete bases or hardstanding. An example is shown below, being the Transformer Station from the application plans. These will generally stand on a permeable clean base and therefore installation will require the removal of topsoil from the area under the building and the construction of a hard base, in a similar manner to the construction of compounds.

Figure 8.13: Example of Transformer Station, Front and Side Elevation



- 8.4.30. These areas are fully reversible back to the same ALC grade on decommissioning. They are temporary and reversible.
- 8.4.31. The magnitude of impact of these is therefore of **Low** magnitude and temporary duration on land of **High** and **Medium** sensitivity. In isolation the effect is **Minor** or **Negligible adverse** which is **not significant**.
- 8.4.32. **Fencing.** Fencing, with periodic security cameras, will be typical deer fencing, as illustrated on the application plans and as indicatively shown in photograph 27. As described in the oSMP, fencing works do not generally damage soils.

Photo 28: Typical deer fencing



- Figures 8.14 and 8.15: Area of substation and aerial image**



- ## Candwr Solar Farm

Figure 8.16 and Photo 29: Proposed tree planting area

- 8.4.39. Other tree planting areas are on non-BMV land, such as the proposals in parcel 4 shown here looking west.

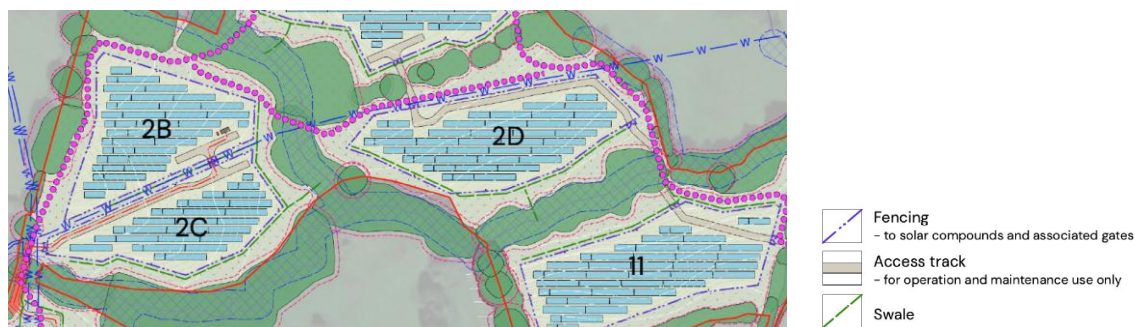
Figure 8.17 and Photo 30: Proposed tree planting area

- 8.4.40. Area 15 is currently grassland. It is predictive ALC Grade 2 but has not been surveyed. This area is suitable for skylark breeding. There will be no physical works in this area that could affect soils or land quality.

Figure 8.18: Excerpt from Landscape Strategy, Parcel 15 Skylarks

- 8.4.41. **Drainage Works.** The **Indicative Landscape Strategy** (Figure 5.5) allows for swales to be created along many of the fencelines, as indicated on the extract below from the Indicative Landscape Strategy Plan.

Figure 8.19: Excerpt from Indicative Landscape Strategy



- 8.4.42. These are shallow scrapes. They do not require the topsoil to be removed, it can be placed immediately downhill of the swale so that, on decommissioning, the soil can simply be pulled back with a machine to infill the shallow swale indentation.

Photo 31: Example of a swale



- 8.4.43. These small drainage features will not result in permanent land loss or downgrading of quality.
- 8.4.44. **Collective impact on Agricultural Land.** The effects of the various parts of the construction process have been assessed individually. Collectively the magnitude of the impacts involving moving soils and disturbing agricultural land are summarised in **Tables 8.12, 8.13 and 8.14** below.
- 8.4.45. Short-term construction phase areas affected, all to be restored fully to the comparable, original ALC grade, are listed below.

Table 8.12: Areas affected short-term, rounded to nearest 0.1 ha

Item	Grade 2 (ha)	Subgrade 3a (ha)	Subgrade 3b and non-BMV (ha)
Access tracks (removable)	1.4 (worst case)	0	0
Main construction compound	0	0	0.5
Secondary construction compound	0	0	0.5
Total	1.4	0	1.0

- 8.4.46. Construction impacts to soils and land quality which will last for the duration of the operational phase until decommissioning are summarised below.

Table 8.13: Areas affected long-term, rounded to nearest 0.1 ha

Item	Grade 2 (ha)	Subgrade 3a (ha)	Subgrade 3b and non-BMV (ha)
Access tracks	0.2	0.1	2.4
Total	0.2	0.1	2.4

- 8.4.47. Woodland planting is assumed to be a permanent land-use change. The soil profile will not be altered, but the land would go out of agricultural use and so is considered as a loss for the purposes of this assessment. The substation will be permanent. The areas are recorded below.

Table 8.14: Areas affected permanently, rounded to nearest 0.1 ha

Item	Grade 2 (ha)	Subgrade 3a (ha)	Subgrade 3b and non-BMV (ha)
Woodland planting	0.3	0	2.4
Substation	0	0	2.1
Total	0.3	0	4.5

- 8.4.48. It can therefore be concluded that:

- 2.4 ha will be disturbed short-term, including potentially 1.4 ha of BMV, but these areas will be restored at the end of construction. The track will be returned to

farming use, the two construction compounds will become part of the solar panel areas;

- 2.7 ha will be disturbed long-term, including 0.3 ha of BMV. These areas will be restored on decommissioning;
- 4.8 ha will be disturbed permanently, including 0.3 ha of BMV, for woodland planting.

8.4.49. Temporary disturbance, both short-term and long-term, falls within the definition of a low magnitude impact in the ISEP Guide, as per **Table 8.2** above. The temporary loss of potentially 1.7 ha of BMV and 5.5 ha of non-BMV are **Low** magnitude effects on resources of **High** and **Medium** sensitivity, resulting in short and long-term, temporary but reversible effects of **Minor adverse** significance, which are **not significant**.

8.4.50. The permanent impact of the loss of 0.3 ha of BMV and 2.4 ha of non-BMV land for tree planting will result in **Low** magnitude impacts on resources of **High** and **Medium** sensitivity, resulting in permanent effects of **Minor adverse** significance, which is **not significant**.

Soils

8.4.51. The soils across the Site comprise a mixture of medium clay loam and heavy silty clay loam. The distribution does not accord exactly with the ALC boundaries and for the purposes of management all the soils across the Site will be treated similarly. The area of high sensitivity is however, the area generally shown as Grade 4 on the ALC plans.

8.4.52. Soils will be managed carefully during the construction phase, with activities controlled through a Soil Management Plan (SMP). An **outline SMP** (oSMP) accompanies the application.

8.4.53. The key to minimising adverse effects on soils is to not move them (e.g. digging up to install trenches) when the soils are saturated, and to minimise vehicle travel over soils when they are saturated. Soils are resilient to some disturbances, as occurs inevitably in normal farming operations, but this should be minimised and, if any disturbance or compaction occurs, rectified.

8.4.54. The impact on soils will be temporary and can be kept to a low or negligible amount. As such the effects are of **Low** magnitude on resources of **High** sensitivity, resulting in a short-term, temporary **Minor adverse** effect, which is **not significant**.

Farm businesses

8.4.55. There are no significant adverse effects on the one full-time and five part-time farm businesses. Parcels 14 and 15 are not reported in this PAC document, but will be reported in the Full ES.

8.4.56. The proportions of land included within the Proposed Development are shown in **Table 8.15** below, but these impacts are mostly on holdings that are part-time and with other farmers using the land for grazing or mowing. All landowners have entered land into the

Proposed Development voluntarily. The majority of the land under and around the panels will be capable of continued agricultural use. All farms will benefit from the security of a regular source of income from the Proposed Development and the adverse effects will therefore be countered by these benefits.

8.4.57. The effects are described in **Table 8.15**.

Table 8.15: Description of Impacts on Farm Businesses

Holding Ref	Description of Impacts
A	This is a block of 20 ha let for grazing. The Proposed Development involves 15.4 ha of the holding.
B	The Proposed Development involves 6.7 ha (17%) of the farm, being the most eastern fields. Limited impact.
C	The Proposed Development involves 36.7 ha (9%) of land from this substantial arable farm.
D	The Proposed Development involves the majority of the holding (78%). The farmer is at retirement age and this is a part-time holding.
E	The land is mostly let out for grazing, so the effects will be limited. The Proposed Development involves approximately 19% of the holding, being the fields furthest from the farmyard.
F	The land is grazed extensively by sheep. The Proposed Development involves 17.6 ha, which is just over half of the part-time holding.

8.4.58. **Table 8.16** assesses the effects.

Table 8.16: Assessment of Impacts and Effects on Holdings

Holding Ref	Proportion of Holding Affected	Magnitude (Table 8.2)	Sensitivity (Table 8.1)	Significance (Table 8.3)
A	77%	Low	Low	Negligible
B	17%	Low	Low	Negligible
C	9%	Medium	Low	Minor

D	78%	Low	Low	Negligible
E	19%	Low	Low	Negligible
F	55%	Low	Low	Negligible

- 8.4.59. In terms of wider effects on the agricultural / rural economy, these will be limited. Currently all of the Site except for part of parcels 3, 4 and 5, are in grassland uses, used for mowing and for grazing, and almost all by sheep. The grazing of sheep is anticipated to continue throughout the operational phase, as the panels will be sufficiently tall to enable easy access for sheep and sheep dogs. Photographs of sheep grazing under and around panels are provided below.

Photos 32 and 33: Sheep Grazing Solar Panel Areas



- 8.4.60. For the majority of the Site the land use will not significantly change, with sheep continuing to graze most of the land. The effect on food production and the wider rural economy will be minimal.
- 8.4.61. For part of the Site that is currently in arable use, there will be a change in cropping, but there will not be a significant effect on food production or the local economy. The amount of labour required to manage sheep exceed that, on a per-hectare basis, required to produce arable crops. There will continue to be local agricultural

expenditure, and a need for services, and a minimal effect on the local economy (indeed potentially a minimal beneficial effect).

8.4.62. Parcel 3A, one of the few arable fields within the Site, is shown below looking northwest.

Photo 34: Parcel 3A, looking northwest



8.4.63. Therefore the impacts on farm businesses are **medium** (one holding) or **low** (five holdings), all resulting in **minor** (one holding) or **negligible** (five holdings) adverse effects, which are **not significant**.

Summary of the Significance of the effects

8.4.64. The significance of the effects on the agricultural and soil resources are summarised collectively as follows.

Agricultural land.

8.4.65. For the majority of the Site there will be no adverse effects on agricultural land quality. The areas disturbed are limited to short-term construction areas, long-term areas for tracks and the substations which will be restored on decommissioning, and permanent land use changes from woodland planting. In respect of land of BMV quality, the areas affected are as follows:

- short-term temporary (worst-case assumed) 1.4 ha;
- long-term temporary 0.3 ha;
- permanent for woodland 0.3 ha.

8.4.66. The effects on non-BMV land are:

- short-term temporary 1.0 ha;
- long-term temporary 4.5 ha;
- permanent (woodland) 2.4 ha.

- 8.4.67. The effect on agricultural land is therefore **Low** magnitude impacts on **High** (BMV) and **Medium** (3b) sensitivity land, resulting in **Minor adverse** effects, which are **not significant**.

Soils.

- 8.4.68. The effects on soils are limited. Soil disturbance will be limited and reversible. The impacts will be temporary and short-term. The soils are medium and high clay soils and susceptible to damage if worked when in unsuitable conditions, but the impacts will be of **Low** magnitude. The resources are of **High** and **Medium** sensitivity, so the effect is short-term, temporary and **Minor adverse**, which is **not significant**.

Farm businesses.

- 8.4.69. The impacts on the six farm businesses are of **Medium** and **Low** magnitude. All the businesses are of **Low** sensitivity, so the temporary, long-term effects are of **Minor adverse** or **Negligible** significance, which is **not significant**.

Additional mitigation and residual effect

- 8.4.70. No additional mitigation is required. Therefore the residual effects remain of **Minor** or **Negligible** significance, which is **not significant**.

Effects during Operation

Sensitivity of the receptor

- 8.4.71. The sensitivity of the receptors remains unchanged for the operational phase in respect of the three resources assessed:
- agricultural land quality will be unchanged;
 - the soils will remain unchanged;
 - the farm businesses occupying the solar farm may change, but they will remain low sensitivity farming operations.

Magnitude of impact

- 8.4.72. The magnitude of the impact on the agricultural resources is assessed as follows.

Agricultural land quality

- 8.4.73. There will be no requirement for heavy machinery to traffic soils during the operational phase. Accordingly, there will be no significant disturbance of soils affecting land quality.
- 8.4.74. Maintenance and cleaning machinery will be transported via a van or small tractor, which is generally lighter than most farm machinery. A typical cleaning machine is shown in Photo 34. If the soils are wet when access is taken, there is the potential for slight indentations to be made (such as shown in Photo 35 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 illustrated in Photo 34 is used, which is no heavier than a small tractor. Cleaning takes place normally in late spring using distilled water, to clean the panels before the main solar generation period, when soils are normally dry and therefore not susceptible to damage in any event.

Photo 35: Cleaning of solar modules



- 8.4.75. There may occasionally be small rutting caused by agricultural vehicles (for example quads) or vans used by engineers. Typical light impacts are illustrated in Photo 35. These indents will normally be levelled by the feet of grazing sheep, but if there are deeper ruts they could be repaired by a lightweight roller in the spring. The physical effects on agricultural land during operation are **negligible** magnitude on resources of **high** and **medium** sensitivity, resulting in **negligible** effects, which are **not significant**.

Photo 36: Example of minor ruts caused by vehicles



- 8.4.76. In the response to the **EIA Scoping Report (Appendix 2.1)** LQAS listed, as policy context, the DCPO letter of 1 March 2022. This letter references PPW and the requirement to give considerable weight to protecting BMV land. The letter advises that officials have

been instructed to “*monitor closely proposals that would involve the loss of BMV land*”. Where proposals involve the loss of more than 20 ha of BMV land, and therefore come before the Department, the Department will object unless other significant material considerations outweigh the need to protect such land.

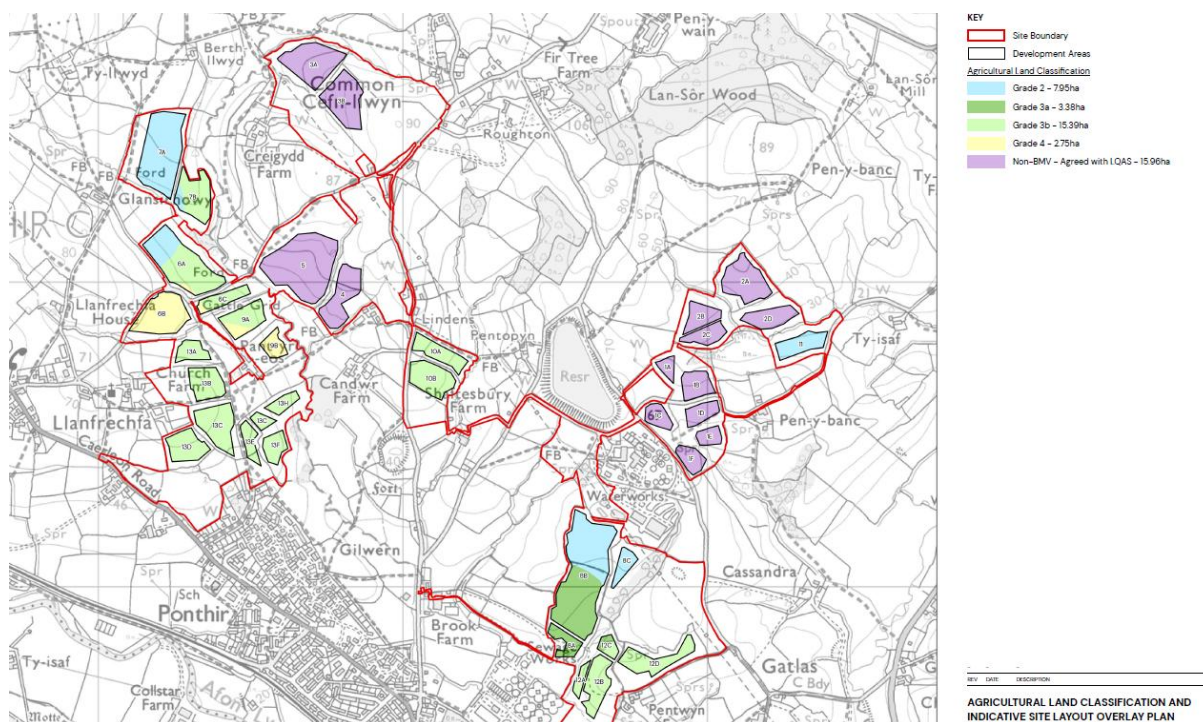
- 8.4.77. The quantum of land of BMV quality within the Site is 23.2 ha, excluding land for the temporary construction access. Of this, only 0.3 ha will be disturbed long-term temporarily, and 0.3 ha will be a permanent land-use change to woodland.
- 8.4.78. The Proposed Development will involve a total of 46.2 ha within fenced areas for solar panels and the onsite 132kv substation compounds, a total of 36.1% of the total application site area. Areas between the panel fences and the hedges will be managed for biodiversity gain, as set out on the **Indicative Landscape Strategy (Figure 5.5)**, and can also be grazed at appropriate times of the year.

Photo 37: Sheep grazing peripheral areas



- 8.4.79. Shown at **Figure 8.1 – Agricultural Land Classification and Indicative Site Layout Overlay Plan** is an overlay showing the fenced panel areas, collectively amounting to 11.3 ha of Grade 2 and 3a land, plus 34.1 ha of non-BMV land. This is reproduced at a smaller scale below.

Figure 8.20: Excerpt from Figure 8.1



- 8.4.80. The amount of BMV within the fenced areas is therefore 11.3 ha.
- 8.4.81. There is no conflict with the DCPO advisory letter as a result of the Proposed Development. The use of BMV land within the Proposed Development exceeds 20 ha (at 23.2 ha), but the loss of BMV land amounts to a long-term temporary use of only 0.3 ha of BMV land and a permanent change of use for woodland planting of 0.3 ha. There is no significant conflict with the policy of the advisory letter, therefore.
- 8.4.82. PPW12 does not specify between land loss and land use. In respect of land loss, the impact is negligible. In respect of land use, there will also be a limited change. Currently most of the land is used for grazing sheep and in part for making silage. During the operation phase the land will be capable of use for grazing of sheep. A grassland-based agricultural enterprise will continue, and therefore there will be very limited changes to the agricultural enterprises.
- 8.4.83. Planning policy does not determine what agricultural enterprise a landowner or occupier should operate. There will be no change of use from agricultural activity, albeit it will be in conjunction with solar power generation. The particular farming use, and food production and agricultural land use in general, is not part of policy in FW or PPW.
- 8.4.84. This has been confirmed recently in other DNS solar farm developments. Three recent decisions have concluded as follows on this topic:
- (i) DNS/3217391 at Llanfihangel Yn Nhwyn, at paragraph 328, the Inspector noted:

"Not farming the land to its full BMV potential, for example during the lifetime of the scheme, would not be contrary to planning policy. Nonetheless, the proposed

development would render that option impractical. The full potential of the BMV land would therefore not be conserved during the period that the solar farm was in place. Given the small area of land which could be farmed to its full, BMV value in this case, however, this is a minor failing. It does not undermine my conclusion that the proposed development would not harm the BMV resource and, in any case, would be consistent with PPW”;

- (ii) DNS/3252305 at Penpergym, at paragraph 275 the Inspector noted:

“Overall, because the proposal would be temporary and conditions would ensure that it should not degrade the quality of the land over its lifetime, I am satisfied that it would not result in significant permanent or irreversible loss of BMVAL. Consequently, in this particular case and based on the detailed evidence before me, I do not consider that the generalised guidance contained in paragraph 6.2.2 of TAN 6, which is not specific to solar farm developments, would be offended”;

- (iii) CAS-O3072-D7X6N7-DNS & S247 at Alleston, at paragraph 42 the Inspector noted:

“Whilst there is no policy requirement for such land to be farmed in any particular manner, the use of up to 8ha of BMVAL to its full potential for food production, would be compromised during the 40-year lifetime of the solar farm. However, mitigation measures secured by condition, should ensure that, in accordance with PPW, it is conserved as a finite source for the future. In this context and on this specific site, the proposal complies with and is supported by FW Policies 17 and 18 and Policy GN.4 of the LDP, which are the development plan policies most directly applicable to this renewable energy proposal of national significance”.

- 8.4.85. Accordingly it is concluded that there is no significant harm to land use, and that the change identified is not a change covered by policy. The impact is consequently negligible, because it retains an agricultural use, and the agricultural use and intensity of use are not a planning or environmental harm. Therefore the wider impacts are **negligible** magnitude, on interests of **low** sensitivity, resulting in **negligible** adverse effects, which are **not significant**.

Soils

- 8.4.86. The **outline Soil Management Plan** includes a section on soil management during the operational phase. This covers any repairs or damage, and grazing uses.
- 8.4.87. Therefore no physical works are required during the operational phase which will adversely affect agricultural land quality. The impacts are therefore of **negligible** magnitude, on resources of **medium** or **high** sensitivity, resulting in a **negligible** adverse effect, which is **not significant**.
- 8.4.88. During the operational phase the land will be managed with a grassland-based vegetation cover. There will be no requirement for heavy machinery to traffic soils during the operational phase. Accordingly, there will be no compacting of soils and a

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

- 8.4.89. The layout and design of panels enables grass to receive adequate light for growth, for water to reach all areas, and there will be no adverse effect on soils as a result of the placing of the panels.
- 8.4.90. Water 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 Photo 37, where gaps between panels can be seen and grass growth below the panels is good. The height of the panels does not result in shading affecting soils.

Photo 38: Panels array showing gaps between panels and between rows of panels



- 8.4.91. For the part of the Site that is in arable use (Parcels 3, 4 and 5) there will be improvements to the soils as a result of being removed from continuous arable use. These benefits will include:
- increased soil organic matter in the topsoil, storing more organic carbon and benefiting soil health;
 - increased earthworm activity as a result of increased organic matter content and reduced tillage;
 - reduced risk of wind and water erosion due to a dense vegetation cover.
- 8.4.92. The land will be managed including by grazing. This is a common and realistic land management activity, as shown in the example below.

Photo 39: Grass growth below and between arrays



- 8.4.93. The potential for there to be a need for soil management due to any repairs or damages is assessed in the **oSMP**. No significant adverse effects are likely.
- 8.4.94. Accordingly the overall effects of the operational phase on soils are assessed as being of **low** magnitude, on resources of **high** sensitivity, resulting in short-term, temporary **minor** adverse effect, which is **not significant**.

Farm businesses and food production

- 8.4.95. The effect of change on farm businesses will occur at the construction phase. The effects will continue throughout the operational phase (i.e. no further changes occur). This section considers possible effects in respect of:
- local farming activities;
 - agricultural output and food production;
 - the wider rural economy.
- 8.4.96. **Local Farming Activities.** There will, during operation, be the potential to graze sheep under and around the panels. There will be long-term limitations to the flexibility of agricultural use in that the production of silage or the grazing of cattle will not be possible, but continued agricultural use (including sheep grazing as occurs over most of the land at present) is possible. Purely in terms of agricultural activity the temporary impact on the five part-time farms will be **minor** on farms of Low sensitivity, resulting in long-term, temporary effects of **negligible** significance, which is **not significant**. The medium magnitude impact on the one full-time farm will result in a **minor** adverse effect, which is **not significant**.
- 8.4.97. **Agricultural Output.** There will not be a significant effect on agricultural output. Currently the Site is used mostly for producing winter forage (mostly silage), grazing cattle and grazing sheep. With the PV modules in place the solar farm will be used for grazing sheep. There will be an increase in land area managed for biodiversity, but the proposals for the Sustainable Farming Scheme for 2026 require 10% of all farms to be managed as suitable habitat, so this will be a change that will occur in any event.

- 8.4.98. The reduction in agricultural production will be limited. Only part of the Site is currently arable land. Neither planning policy nor financial incentives require or encourage any particular level of intensity of farming use. Current and future agricultural enterprise choices are for land owners and occupiers, and are not part of planning policy in FW, PPW or the local plan. There will be no significant change, and no conflict with policy. The impact is **negligible** and **not significant**.
- 8.4.99. **Economic Considerations.** The impact on the local rural/land-based economy will also be negligible. Much of the Site is currently grazed, and sheep grazing activities will continue and expand onto some areas used for arable. There will be no significant changes in terms of labour, and it is likely that overall the land management requirements will be for a greater labour input. There will be no significant changes, and no significant effects, for agricultural supply or related services.
- 8.4.100. Overall there will be a **negligible** magnitude of impact on the wider rural economy and food production, which is considered to be of **low** sensitivity, and will be a **negligible** adverse effect, which is **not significant**.

Summary of the Significance of the effect

- 8.4.101. There will be only **minor** or **negligible** adverse effects during the operational phase on agricultural land, soils, farm businesses and agricultural production, which are **not significant**.

Effects during Decommissioning

Sensitivity of the receptor

- 8.4.102. The sensitivity of the receptors will be unchanged for the decommissioning phase.

Magnitude of impact

- 8.4.103. The magnitude of the impacts are assessed as follows.

Agricultural land quality

- 8.4.104. Measures to mitigate potential effects on land and soil quality will be secured through good practice in handling soils. The principles of decommissioning are set out in the **oSMP**.
- 8.4.105. Where fixed infrastructure or cables are to be removed, they will be removed in suitable conditions. If cables are being removed the works will include careful removal of topsoil and subsoil, to be stored in segregated piles, followed by reinstatement. Fixed infrastructure bases will be removed, membranes removed, and the ground loosened and topsoil replaced.
- 8.4.106. The removal of the PV modules will involve the disassembly of the panels and framework, followed by mechanical removal of the piles. The soils across the PV module

area will then be loosened with normal agricultural machinery, and returned to the farmers in a condition suitable for continued agricultural use.

- 8.4.107. Once the 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.
- 8.4.108. Following decommissioning, the land will be returned to the landowners in a condition suitable for agricultural use.
- 8.4.109. The works will therefore involve a further temporary period of disturbance on agricultural land of high or medium sensitivity. The magnitude of impact will be **low** on resources of **high** or **medium** sensitivity, and the consequent effects will be **minor** adverse, which is **not significant**.

Soils

- 8.4.110. The potential impacts on soils from decommissioning will be similar to the potential effects from construction. The works will involve trafficking of the land with machinery, and physical disturbance of soil for the removal of cables, and the removal of bases and tracks. If these works are undertaken in suitable conditions the impacts will be short-term, temporary and **Low** in magnitude. The soils are of **high** and **medium** sensitivity, so the effects will be **minor** adverse, which is **not significant**.

Farm businesses

- 8.4.111. The effects on farm businesses of the decommissioning phase will be short-term and of low magnitude, for periods when grazing is not possible due to decommissioning activities. The impacts will be **low** magnitude on **low** sensitivity resources, resulting in **negligible** adverse effects, which is **not significant**.

Summary of the Significance of the effect

- 8.4.112. The effects on agricultural land, soils and farm businesses from decommissioning are therefore all assessed to be of **minor** adverse or **negligible** significance, which is **not significant**.

8.5. Mitigation, Enhancement and Residual Effects

Mitigation by Design

- 8.5.1. Both embedded and additional mitigation measures relevant to the assessment of agriculture and soils are summarised in **Table 8.17** below. Where relevant, measures have been identified that may result in enhancement of existing environmental conditions.

Table 8.17: Mitigation measures to be adopted as part of the Proposed Development

Mitigation measure	How the measure will be secured
Embedded mitigation	
Soil Management Plan	It is anticipated that this will be an approved document on the DNS consent.
Further mitigation	
No further mitigation is proposed.	

Additional Mitigation.

- 8.5.2. No additional mitigation is considered to be necessary.

Enhancements

- 8.5.3. No further enhancements are proposed.

8.6. Cumulative Effects

Cumulative Effects

- 8.6.1. The assessment of cumulative effects for agricultural land and soils has followed the methodology set out in **Chapter 4–EIA Assessment Scope & Methodology**. The specific projects, plans and activities scoped into the assessment of cumulative effects are set out in **Table 8.18**.
- 8.6.2. The other projects have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section have been selected from the information provided in **Chapter 4–: Environment Assessment Methodology EIA Assessment Scope & Methodology** as well as the information available on other projects.
- 8.6.3. The information is set out in **Table 8.18**.

Table 8.18: Assessment of Cumulative Effects

Number	Site	Description	Assessment
1	22/P/O446/OUT	Proposed Mental Health Specialist Inpatient Services Unit and associated highway, drainage and landscape infrastructure.	The site measures 4.22 ha, of which 1.44 ha were found to be of Subgrade 3a (BMV) by way of a ALC survey. When assessed in conjunction with the Proposed Development the total quantum of BMV lost (1.4 ha) will still be low magnitude.
2	DNS/3239190	Ground mounted photo voltaic solar farm and energy storage facility, together with associated equipment, infrastructure and ancillary works.	The site measures 59 ha, of which no land was found to be of BMV quality. 56.3 ha were found to be of Subgrade 3b, 1.3 ha of Grade 4 and 1.4 ha of non-agricultural land. Due to this there is no increased significant cumulative effect.
3	DNS/3276725	Wind farm of up to 13 turbines along with an improved site entrance, new and improved access tracks, crane hardstandings, control building and substation compound, electricity transformers, underground cabling, and drainage works.	The site measures approximately 376.6 ha, all of which is predicted to be of Grade 4 and Grade 5. As such no ALC survey has been undertaken for the site. Due to this there is no increased significant cumulative effect.

8.6.4. Only one scheme in the cumulative assessment involves BMV land, amounting to less than 2 ha, which would be lost permanently. The cumulative effect remains **minor**, which is **not significant**.

In-Combination Effects

- 8.6.5. There are no in-combination effects.

8.7. Summary

Introduction

- 8.7.1. This Chapter considers the potential significant adverse effects on agricultural land quality, soils and farm businesses, plus the wider rural economy.

Baseline Conditions

- 8.7.2. Just over 80% of the Site is non-BMV or non-agricultural land. Approximately 20% (just over 23 ha) is of BMV quality. The soils are generally clay loam or silty clay loam. Only 11.3 ha of BMV land lies within the fenced panel areas.
- 8.7.3. There are six farm businesses affected, five of which are part-time or let others graze the land. Only one farm crops land for arable production.

Likely Significant Effects

- 8.7.4. **Land Quality.** The land quality of the Site will not be adversely affected. A negligible area – 0.3 ha of BMV – will be disturbed long-term temporarily for tracks and bases, but this will be restored on decommissioning. A negligible area – 0.3 ha of BMV – will be planted to woodland and the land use will change.
- 8.7.5. **Soils** are susceptible to being damaged if moved when wet, but by following industry good practice these impacts can be avoided. Advice is set out in the **oSMP**.
- 8.7.6. **Farm Businesses** are likely to benefit from the inclusion of land into the Proposed Development. The proportion of some of the part-time farms included in the Proposed Development is substantial, but the effects (as these are part-time and generally let out) will be negligible. The one full-time farm unit will no longer be able to crop some land for arable purposes, but the effect is minor adverse.

Mitigation, Enhancement, Residual Effects

- 8.7.7. No further mitigation is required.

Cumulative Effects

- 8.7.8. None of the sites considered will, in combination with the Proposed Development, result in a significant adverse effect.

Conclusion

- 8.7.9. The Proposed Development is temporary and reversible. It will not result in any significant effects on land quality, soils or farm businesses.

8.7.10. The summary of effects is as provided in **Table 8.19**.

Table 8.19– Summary of Effects, Mitigation 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								
BMV land	Loss or damage	Temporary	High	Low	Regional	Minor	SMP	Minor
Non-BMV land	Loss or damage	Temporary	Medium	Low	Local	Minor	SMP	Minor
Soils	Disturbance	Temporary	High	Low	Local	Minor	SMP	Minor
Farm Businesses	Disturbance	Temporary	Low	Medium and Low	Local	Minor	–	Minor
Operation								
BMV Land	Loss or damage	Temporary	High	Negligible	Regional	Negligible	SMP	Negligible
Non-BMV land	Loss or damage	Temporary	Minor	Negligible	Local	Negligible	SMP	Negligible
Soils	Damage	Temporary	High	Negligible	Local	Negligible	SMP	Negligible

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Agricultural Circumstances

Farm Businesses	Economic effects	Temporary	Low	Low	Local	Negligible	-	Negligible
Wider effects	Economic effects	Temporary	Low	Negligible	Local	Negligible	-	Negligible
Decommissioning								
Agricultural land	Loss or damage	Temporary	High and medium	Low	Regional / local	Minor	SMP	Minor
Soils	Loss or damage	Temporary	High	Low	Local	Minor	SMP	Minor
Farm Businesses	Economic effect	Temporary	Low	Low	Local	Negligible	-	Negligible
Cumulative Effects								
BMV Land	Loss	Temporary	High	Low	Regional	Minor	-	Minor
In-Combination Effects								
None								

8.8. References

Welsh Government (2021), Agricultural Land Classification: predictive map, map 2

Welsh Government (2024), Planning Policy Wales Edition 12

Welsh Government (2021), Future Wales: the national plan 2040

Institute of Sustainability and Environmental Professionals (2022), A New Perspective on Land and Soils in Environmental Impact Assessment

Department of Environment, Food and Rural Affairs (2009), Construction Code of Practice for Sustainable Use of Soils on Construction Sites

The Institute of Quarrying (2021), Good Practice Guide for Handling Soils on Construction Sites

Ministry of Agriculture, Fisheries and Food (1988), Revised Guidelines and Criteria for grading the quality of agricultural land

Welsh Government (2025) Agricultural Land Classification of England and Wales: guidelines for grading the quality of agricultural land

