



Great Harmeston Solar Farm Assessment of Impacts on Agricultural Land





FINAL DRAFT

**GREAT HARMESTON
SOLAR FARM,
PEMBROKESHIRE**

**ASSESSMENT OF IMPACTS
ON AGRICULTURAL LAND**

March 2026

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1 INTRODUCTION

Background to this Report

- 1.1 Great Harmeston Solar Farm is a Development of National Significance (DNS) application to the Welsh Ministers (Planning and Environment Decisions Wales “PEDW”) for the proposed installation of a solar farm with a generating capacity of up to 65 megawatts (MW) (AC) and associated infrastructure.
- 1.2 The development proposes solar panels within a wider site of approximately 128 ha of mostly agricultural land south of Johnston, Pembrokeshire (the Site). This land is currently mostly farmed, with a mixture of grassland and arable farming.
- 1.3 A detailed Agricultural Land Classification (ALC) survey has been carried out. The ALC survey identifies that the site comprises a mixture of land quality, but with a majority of land of moderate (Subgrade 3b) or poor (Grade 4) quality. There are areas of very good (Grade 2) and good (Subgrade 3a) quality land, but the design has minimised the inclusion of the better quality land within the Site. Land of Grades 1, 2 and 3a in the ALC is defined in Planning Policy Wales (edition 12, 2024) as the “best and most versatile” agricultural land (BMV).
- 1.4 Future Wales: the National Plan 2040 (2021) sets out a positive approach to development of renewable energy. The National Plan sets out development management criteria for DNS applications, with no explicit reference to land quality beyond requiring “**the sustainable use of resources**”.
- 1.5 Planning Policy Wales (ed 12, 2024) requires considerable weight to be given to protecting BMV land from development because of its special importance. Such land should only be developed if there is an overriding need for the development.
- 1.6 The Minister for Climate Change wrote to Chief Planning Officers on 1st March 2022 (**Appendix KCC1**) and reminded them of policy in Future Wales, PPW and TAN 6. Her letter stated:
- “Should solar PV array applications on BMV application land come before the Department for Climate Change, the Department will object to the loss of BMV agricultural land unless other significant material considerations outweigh the need to protect such land in accordance with Welsh Government policy and guidance outlined above”.**

- 1.7 The Soil Policy and Agricultural Land Use Planning Unit (hereafter referred to as LUPU) of the Welsh Government commented on the pre-application consultation for this project on 2nd September 2025. Their response confirmed that they have validated the ALC survey. Their response went on to comment that:
- (i) LUPU disagrees with statements regarding soil impacts and reversibility, and is concerned about cumulative impacts;
 - (ii) the effects of the project on BMV agricultural land must be considered;
 - (iii) LUPU disagrees with the Applicant's statements about soil impacts and considers that significant impacts upon soils are likely.

Matters Addressed in This Report

- 1.8 This report considers the proposals in the context of planning policy and the need to protect soils and agricultural land resources. In the context of the letter from the Minister for Climate Change regarding the loss of BMV resource, this report focuses initially on the effect of the proposed development on the soils and land quality. This report needs to be read alongside the Planning Statement which sets out the overriding need for the development.
- 1.9 In particular this report considers whether or not the BMV resource will be adversely affected: whether it will be downgraded by the proposals or irreversibly developed, such that the resource will be "lost".
- 1.10 This report concludes that BMV land will not be lost, and nor will it be downgraded. Good practice to ensure this is outlined. It is extremely unlikely that an ALC grading would drop even if there was poor management. The resource is resilient and will not be "lost".
- 1.11 On the basis that the BMV resource is not lost, then the report considers the extent to which it can be used across the Site. The report considers the solar farm proposals and the effects on food production of the proposed development. It concludes that the effects are limited. There will be a small reduction in biofuel production, but an increase in sheep production. Land use policy and initiatives do not provide any preference over land management, enterprise type or intensity, and this change will not conflict with policy nor will it result in any measurable impacts on food production or local economics.
- 1.12 The report also takes account of the Institute of Sustainability and Environmental Professionals publication Solar PV on Agricultural Land: Essential Components of Environmental Assessments and Reports, published 14 January 2026.

Structure of the Report

1.13 The report is structured as follows:

- (i) **section 2** sets out planning policy and guidance in respect of the use of BMV agricultural land for agricultural use, and policy on renewable energy (solar) development;
- (ii) **section 3** describes the proposals, how the panels will be inserted and removed, and the effects of these activities on soil structure and agricultural land quality. The section considers the extent to which soils might be disturbed and whether the land quality might be affected, such that areas of BMV quality might be downgraded;
- (iii) **section 4** describes the operational phase;
- (iv) **section 5** describes the Site, the farming undertaken, and the agricultural land quality survey results;
- (v) **section 6** examines the implications for the BMV resource from construction and decommissioning and in particular the comments of LUPU;
- (vi) **section 7** reviews the position locally in terms of agricultural land quality. This section reviews the land quality of the site and the pattern of distribution of the ALC grades;
- (vii) **section 8** considers the potential use of land within the site and considers the fields containing BMV on a field-by-field basis;
- (viii) **section 9** considers the agricultural use of the proposed development for the duration of the scheme and the effects of this on the farm businesses, food production and overall farm economics;
- (ix) **section 10** reviews the potential effects on soils;
- (x) **section 11** sets out a consolidated response to the LUPU consultation;
- (xi) and the report ends in **section 12** with a summary and conclusions.

2 PLANNING POLICY AND GUIDANCE

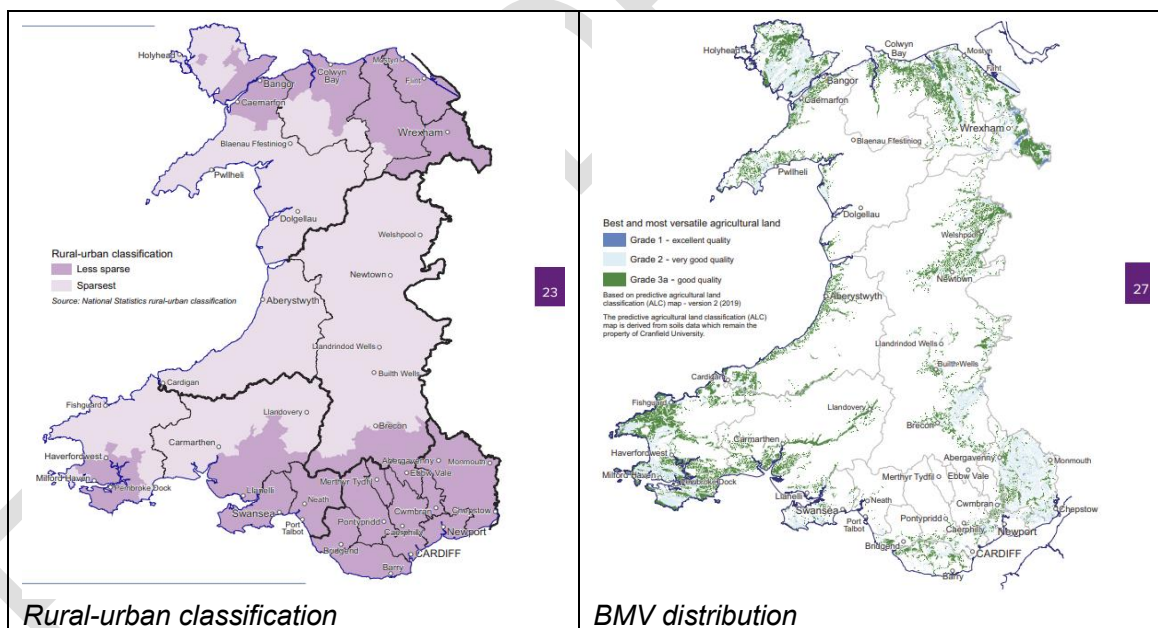
2.1 This section considers, in particular:

- Future Wales: The National Plan 2040 (2021) and its related documents;
- Planning Policy Wales, Edition 12 (2024) (PPWE12);
- Technical Advice Note 6 (2010) (TAN 6);
- the Welsh Government's Guidance Note (v2) (2021) on ALC and related documents and plans;
- the letter to Chief Planning Officers from the Minister for Climate Change (1st March 2022).

Future Wales: The National Plan 2040 (2021)

2.2 Future Wales recognises that productive land is a vital resource. The map on page 27 shows where the BMV agricultural land is predicted to be located. The distribution of BMV has a broad correlation with the “less sparse” population density areas map on page 23. The two maps are shown below.

Insert 1: Extracts from Future Wales



2.3 The “Future Wales Frequently Asked Questions” document confirms that Future Wales should be read as a whole and that individual policies should not be considered in isolation.

2.4 Future Wales does not contain a policy on agricultural land. In the section on rural areas, on page 70 (final paragraph) reference is made to the crucial role rural areas play in helping decarbonise Wales by providing suitable environments for different forms of

renewable energy. Policies 17 and 18 set out Future Wales' approach to renewable energy and its relationship with rural areas.

- 2.5 Policy 17 identifies that large-scale solar will not be permitted in National Parks or Areas of Outstanding Natural Beauty. Those areas are mapped on page 31 of Future Wales. There is no mention of BMV agricultural land in the policy.
- 2.6 Nor is BMV mentioned in Policy 18 on Developments of National Significance (DNS). Policy 18 notes that DNS development will be permitted subject to 11 criteria. These are, in brief:
- (1) no unacceptable landscape impact;
 - (2) no unacceptable visual impacts on nearby communities;
 - (3) no adverse effects on designated sites;
 - (4) no unacceptable effects on national nature conservation sites or protected species;
 - (5) the proposal includes biodiversity enhancement;
 - (6) no unacceptable impacts on protected built heritage assets;
 - (7) no unacceptable impacts such as shadow flicker, noise etc;
 - (8) no unacceptable impacts on defence facilities;
 - (9) no unacceptable impacts on the transport network;
 - (10) sustainable use of resources needed for or generated by the development;
 - (11) there are acceptable provisions relating to the decommissioning of the development.
- 2.7 Future Wales should be considered along with Planning Policy Wales, and accordingly BMV policy remains a relevant consideration. However Future Wales describes policy 18 as **“a decision-making framework for renewable and low carbon technologies”** (page 96). As noted, BMV agricultural land is not mentioned in this decision-making framework.
- 2.8 It also notes that **“the Welsh Government wishes to see as much renewable electricity generated and consumed as locally as possible”** (page 99). As shown in the comparison of BMV distribution and population density at Insert 1 above, the most populous areas are also those with the greatest proportion of BMVAL.

Planning Policy Wales (2024)

- 2.9 Planning Policy Wales (Edition 12, 2024) (PPW) defines the “Best and Most Versatile Agricultural Land” in paragraph 3.58 as land in Grades 1, 2 and 3a of the Agricultural Land Classification (MAFF, 1988). This, it advises, is a finite resource which should be conserved for the future.

- 2.10 This is not a block on development of such land, but it is made clear that “**considerable weight should be given to protecting such land from development because of its special importance**”. The advice in paragraph 3.59 continues by noting that such land “**should only be developed if there is an overriding need for the development, and either previously developed land or land in lower 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**”.
- 2.11 The last sentence of 3.59 states: “**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**”.
- 2.12 Paragraph 1.9 stresses that PPW should be read as a whole. It is explained that the word “should” reflects Welsh Government’s expectations of an efficient and effective planning system. Aspects of policy and their application to a particular development proposal could occur in several parts of the document.
- 2.13 Paragraph 5.9.10 identifies that local planning authorities should ensure development plan policies are supportive of renewable and low carbon energy development in all parts of Wales, and set out clearly the relevant local criteria against which proposals will be evaluated.
- 2.14 Paragraph 5.7.7 sets out that the benefits of low carbon energy is of “**paramount importance**”.
- 2.15 Accordingly the policy on protecting BMV agricultural land is one of the many considerations within PPW, which must be read as a whole.
- 2.16 It is also important to note that the agricultural use of the land, and therefore matters of food production and impacts on farm businesses, are not part of the sequential test set out in PPW 3.58 and 3.59. This was confirmed by the Welsh Government Department for Climate Change and Rural Affairs in a letter dated 17 November 2025 in connection with DNS/CAS-03072-D7X6N7, reproduced in **Appendix KCC2**.

TAN 6 (2010)

- 2.17 Technical Advice Note 6 “Planning for Sustainable Rural Communities” sets out further advice in section 6. TAN 6 is now 16 years old. Large scale solar installations were not being developed in 2010, therefore the guidance in TAN 6 was not when drafted aimed at development such as this one. In that context TAN 6 advises that “**once agricultural**

land is developed, even for “soft” uses such as golf courses, its return to agriculture as best and most versatile agricultural land is seldom practicable” (paragraph 6.2.2).

2.18 Paragraphs 6.2.6 to 6.2.9 advise on other relevant considerations, notably:

- effects of severance and fragmentation on farm structure;
- effects on buildings and fixed infrastructure;
- impacts on irrigation, where practised;
- wider effects, such as field underdrainage.

2.19 Annex B sets out the procedural requirements for consultation with the Welsh Government for development which “**would involve the loss of 20 hectares or more of Grades 1, 2 or 3a agricultural land, or a loss which is less than 20 ha but is likely to lead to further losses amounting cumulatively to 20 ha or more**” (paragraph B2).

WG Guidance Notes

2.20 The Welsh Government has produced a predictive ALC map and it is accompanied by a number of documents including a Guidance Note (version 2.1, May 2021). This refers to the predictive map and when field survey is required, which is where land is shown as potentially of Grades 1, 2 and 3a.

2.21 The “**ALC: Frequently Asked Questions**” (May 2021) document explains that “**normal agricultural management will rarely, if ever, affect the ALC grading of land**”. The ALC is based on long-term physical and chemical limitations, and current or historic agricultural management does not affect grade. “**ALC grade could potentially only be improved by very major and expensive interventions, well beyond the scope of normal agricultural works.**” The document is reproduced at **Appendix KCC3**.

2.22 It is noted that “**it is extremely unlikely that an ALC grading would drop because of neglect or poor agricultural management**”. This shows that, because the ALC is based on the potential of land and the soil resource interacting with other variables, there is a considerable degree of resilience to activity that would not affect ALC grade.

Local Policy

2.23 The Local Development Plan (2013) contains no particular policies relating to agricultural land.

Minister's Letter

- 2.24 The Minister for Climate Change wrote to Chief Planning Officers on 1st March 2022, as noted earlier. Her letter is set out at **Appendix KCC1**. She refers to the policies set out above, and emphasises that her department would object to the loss of BMV resources.

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- (vii) connection of the site to the National Grid, involving off-site cabling along verges to the public highway;
- (viii) commissioning and activation of the site.

3.3 This report focuses on both the construction and operational phases, where these involve access across or around the agricultural land, and sets out principles for decommissioning.

CEMP and Soil Management Plan

3.4 The solar farm can be installed, and dismantled, without damage to soils. It can be installed and dismantled without affecting agricultural land quality except for any areas of fixed infrastructure (in this case the substation and spares storage areas, in total about 0.7 ha). The success in not damaging soils or soil structure, however, depends upon following good practice.

3.5 An Outline Soil Resource Management Plan (OSRMP) has been prepared. A detailed SMP is expected to be required by condition. The OSRMP demonstrates how the development can avoid damaging soils, and directs the construction of different parts of the site to suitable times of year.

Construction Methodology

3.6 Panels are installed rapidly. The process involves marking out the grid on the grass and laying out the steel stanchions. This stage is non-intrusive. It does involve machinery carrying the legs, however, and should take place when soils are suitably dry.

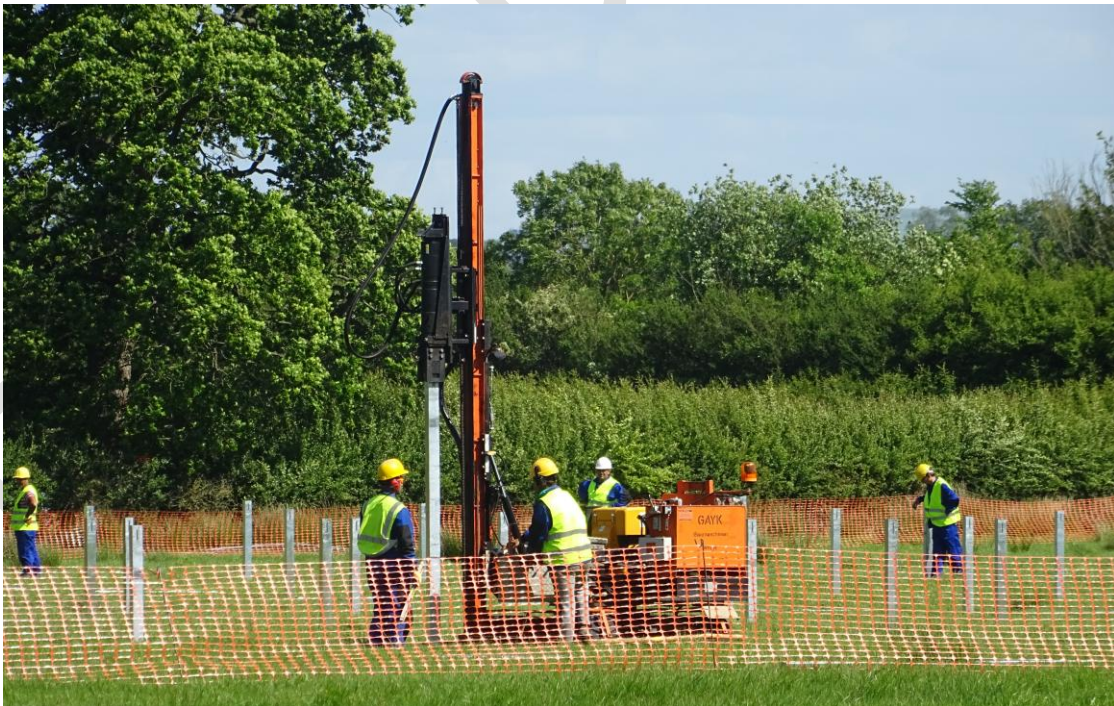
3.7 Typically the machinery used is an agricultural loadall or, as per the example below, a smaller loadall in this case with tracks to spread the weight.

Insert 3: Loadall Delivering Legs



3.8 A team then arrives to knock the stanchions / legs in. From operations we have observed it takes a little over a minute per pole to knock the pole into the ground and move the machine to the next pole¹. This operation is shown in the photograph below. This was inserting legs into a clay soil.

Insert 4: Inserting a Stanchion



¹ This observation was made on clay soils at the Purton Solar Farm, Wiltshire, in 2015. Ground conditions will inevitably affect installation speed.

3.9 Typically there will be two or more teams working simultaneously.

Insert 5: Team Installing Panels



3.10 The impact on the land and soils from installing legs is illustrated below.

Insert 6: Legs Installed (this at Bentham Farm, Purton, Summer 2015)



Insert 7: Legs being Installed (this at Tiln Farm, Retford, January 2023)



3.11 Whilst leg design varies, they are all lightweight with limited cross-sectional area. An example of legs is shown below, and a close-up of one into the ground, illustrating the minimal disturbance to soil that will result.

Inserts 8 and 9: Examples of Array Legs (Manor Farm, Llanvapley)



- 3.12 Once the panel legs have been installed, the lightweight framework is carried out. This usually arrives on a tractor-towed trailer, and the framework is lifted off by hand. It is bolted together by hand. No heavy or damaging machinery is required and there is no physical disturbance to the soils, as shown below.

Insert 10: Bolted-on Framework



- 3.13 The next stage is to bolt-on the individual PV array panels. These, too, are lightweight. They are brought out by tractor and trailer, and lifted off the trailer by hand and bolted to the framework. The following photograph shows how the process has resulted in no physical disturbance to the land.

Insert 11: Following the Bolting-on of the Panels



- 3.14 Therefore across the majority of the Site, where the Development involves only the installation of strings of solar PV arrays, there is minimal ground disturbance and limited vehicular trafficking. That trafficking is by vehicles no larger than normal agricultural machinery and mostly machinery that is considerably smaller.
- 3.15 There are occasions when the weather results in suboptimal conditions. The OSRMP sets out how soils should be handled and when work should cease, and a Construction Phase Soil Management Plan will be produced and operated.
- 3.16 Soil is a fairly resilient material and topsoil disturbance rarely affects the land quality. Land quality can be affected if there is deep compaction that cannot be rectified by normal agricultural machinery, as this may affect the drainage and hence wetness. Surface damage – often caused in wet harvests or when cutting maize on arable land for example – rarely alters the land grade.
- 3.17 The following series of photographs shows an installation that took place in Sussex in 2015. At the time the Government had announced that the grant funding was being cut for sites not operational by April, and as a result winter installation works were common. The panels were installed in winter, on a site with clayey soils and when ground conditions were generally poor. The soil was, however, easily restored following installation, as shown. The inclusion of this photograph is not to endorse working with wet soils, but to demonstrate their resilience to being restored without loss of function or quality.

Insert 12: Panels Installed in Poorer Conditions



Insert 13: Same Area Prepared for Seeding



- 3.18 The area recovered well and is shown below 7 years later. There was no evidence of any compaction or deterioration in land quality.

Insert 14: The Same Area 7 Years Later (a different row but the same site)



- 3.19 The panels are connected by cables that run along the underside of the panels, usually along the upper edge and out of range of sheep. No trenching is required except at the end of the row (or string). Typically around the end of each row a cable is buried, connecting each row to a circular circuit. Hence a short length usually runs from each row to the main circuit. This may run around the outside, or down the centre between rows.
- 3.20 The cabling along the length of the panels is hung underneath the panels and then, at the end of a row, it goes underground, as shown below.

Inserts 15 and 16: Cabling along Panels (Manor Farm, Llanvapley)



- 3.21 The construction of trenches to bury cables within the Site will involve digging out the soil to a suitable depth to bury cables. This would be a similar process to that involved in installing a new waterpipe around a farm. An open trench, with subsoil to one side and topsoil to the other, is shown below when the trench is open and subsequently when the trench has been restored. This results in no long-term disturbance to the soil profile and does not affect the ALC grade.

Inserts 17 and 18: Example of Cabling Being Installed (Purton)



- 3.22 The process can look as though it is damaging to soils, but the trench is narrow and is the only area affected. This is illustrated in the following photograph.

Insert 19: Cable Trenching, Central Row



3.23 The machine operator will be able to distinguish topsoil from subsoil, and place these in separate piles on excavation for return into the original order once the cable is laid.

3.24 These areas recover quickly and well. The following photograph shows cables going into the ground. The transformer to which the cables connect can be seen, but there is no evidence of any damage to soil or difference in growth above the cable route.

Insert 20: Example of Land Above Buried Cables, Monmouthshire



3.25 There will be modest areas where construction compounds need to be created. These will result in a construction-phase disturbance to soils, but the areas will be capable of full restoration, and to the same ALC grade.

3.26 Construction compounds are built by stripping topsoil and storing that in a bund on the edge of the site. A matting is then laid down, and stone imported and levelled, as shown below.

Insert 21: Newly-laid Construction Compound (Elsham-Lincoln Pipeline)



3.27 The matting prevents the stone from mixing with the subsoil, as shown below.

Insert 22: Matting



3.28 Topsoil will need to be stored in a bund, as shown below. If soils are still wet when moved, the bund should be no higher than 1m, but otherwise temporary bunds can be up to 3m in height. Advice on this is set out in the OSRMP and the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

Insert 23: Example Topsoil Storage Bund



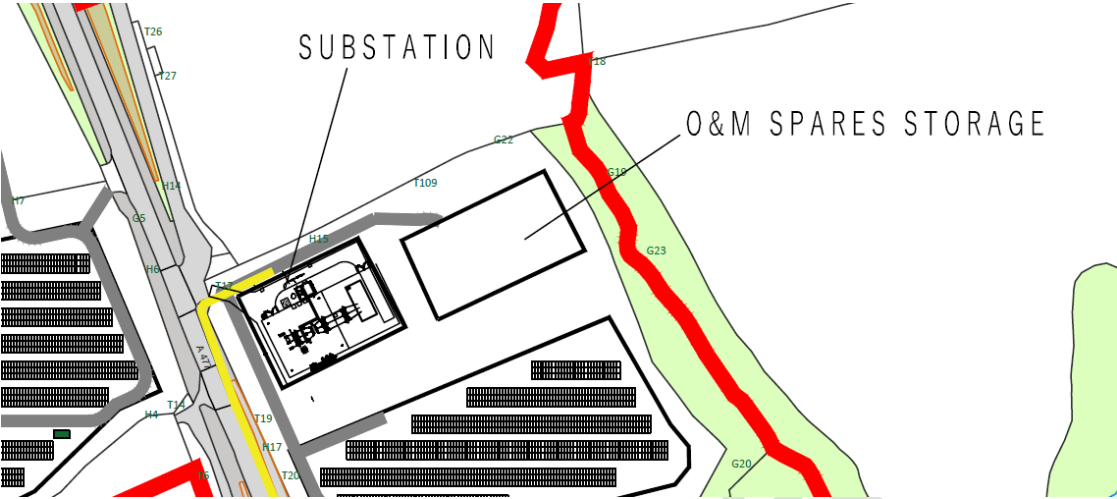
- 3.29 Tracks will need to be constructed around the Site. These are usually constructed at the outset. The construction process will involve removing the topsoil, which will be stored near to the track from where the soil was removed, in low (20 – 30cm high), managed bunds so that the soil can be replaced on decommissioning. These areas will be fully restorable to comparable ALC grade, and are not therefore permanently sealed over or downgraded.
- 3.30 There will be inverters and storage containers as part of the Development. These will normally stand on a stone base, which is stripped beforehand in the same way as the tracks, and which will be fully restored on decommissioning.
- 3.31 The placing of the inverters/containers is not significantly disruptive to soil. They normally involve only a small foundation point for the framework, plus a modest area of stone to control vegetation growth and for the operators. An example is shown below.

Insert 24: Typical Inverter Containers



3.32 A substation is proposed at the eastern edge of the Site. The proposed layout is shown on the insert below. The Substations and Operations and Maintenance Storage Compound and track amount to about 0.7 ha in total, rounded up to nearest 0.1 ha.

Insert 25: Proposed Substation



Insert 26: The Site for the Proposed Substation



3.33 The panel areas will all be fenced with deer fencing.

4 OPERATIONAL PHASE

Ongoing Land Management and Land Use

4.1 The land beneath and around the panels will be grassland. This will be managed for agricultural production and biodiversity enhancement, in accordance with management to be described in the Landscape and Environmental Management Plan (LEMP).

4.2 The management programme could include grazing by sheep. This is an entirely common and feasible management practice. The following three photographs of solar panels show sheep grazing around and under solar panels. However, the Council's Pre-Application response of 2/12/2025 Ecology Officer comments seek a non-grazing use.

Insert 27 - 29: Sheep Grazing (North of Caernarfon, Monmouthshire, Shropshire)



- 4.3 The management of the land management or farming operations around and under the panels will be, it is expected, the responsibility of the farmers under the direction of the solar farm operator.

Operational Management

- 4.4 There will be no increased effect on agricultural land quality during the operational phase.
- 4.5 During the operating period there will be no requirement for large or heavy machinery to access the land. Management and maintenance machinery will generally be small and light. Usually the panels will be cleaned annually. This is normally undertaken in spring or early summer, when ground conditions are suitable, because this is the best period to clean panels so that they maximise their solar intake.
- 4.6 Typically, machinery is no heavier than a small tractor, but agricultural contractors often use typical tractors, such as the example below.

Insert 30: Cleaning of Solar Arrays



Source: Lightsource bp

- 4.7 There may occasionally be small rutting caused by agricultural vehicles (e.g. quad bikes) or vans used by engineers. Typical light impacts are illustrated below. These will normally be levelled by grazing sheep, but if there are deeper ruts they could be repaired by a lightweight roller in the spring.

Insert 31: Ruts Caused by Vehicles



- 4.8 There may be occasional need for works of repair which might disturb soils. These will be infrequent. If possible any works requiring soils to be moved should be timed for the summer period, following the guidance in the OSMP. Any trenching, whether carried out in ideal conditions or not, looks unsightly initially, but rapidly recovers and is indistinguishable once grass cover has returned. These effects will be of negligible magnitude.

Insert 32: Trench During Wet Period



- 4.9 Therefore, there are no physical works required during the operational phase which will adversely affect soils or agricultural land quality.

4.10 The ISEP Document Solar PV on Agricultural Land (2025) identified potential pollutants from solar panels. It is noted on page 11 that there is little available evidence on long-term effects at the present time. Modern panels are not made from the chemicals listed on page 12. There is no evidence from existing panels of any harm to soil properties or vegetation growth.

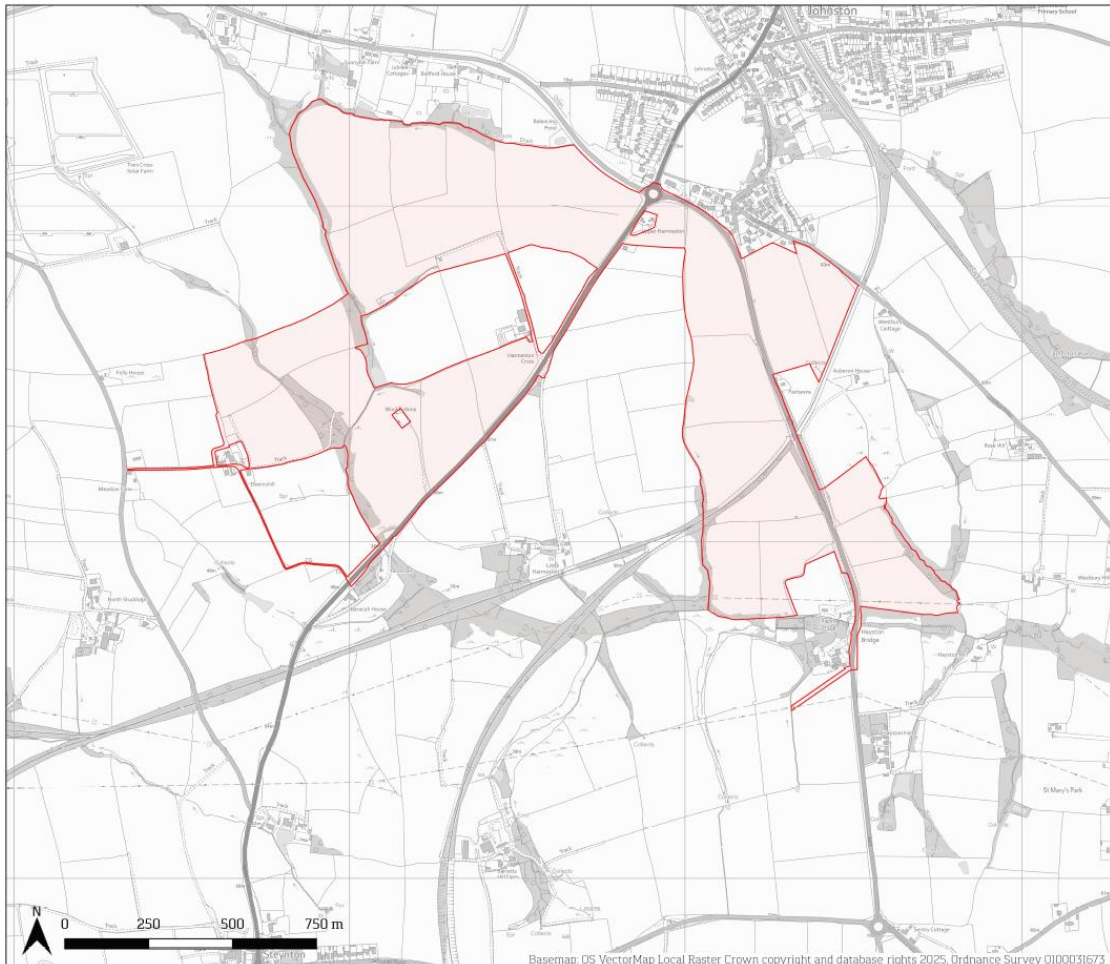
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5 THE SITE, ITS LAND QUALITY AND LAND USE

The Site

- 5.1 The Site comprises agricultural land to the south of Johnston. It is shown on the following plan.

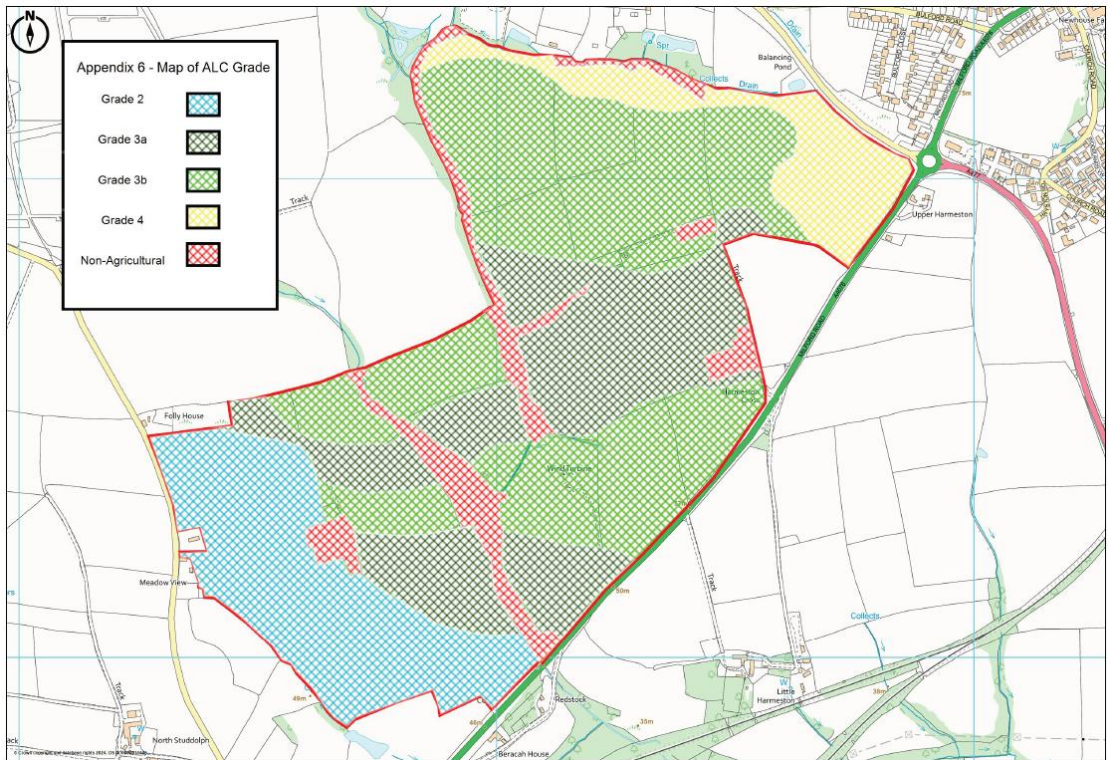
Insert 33: The Site Edged Red



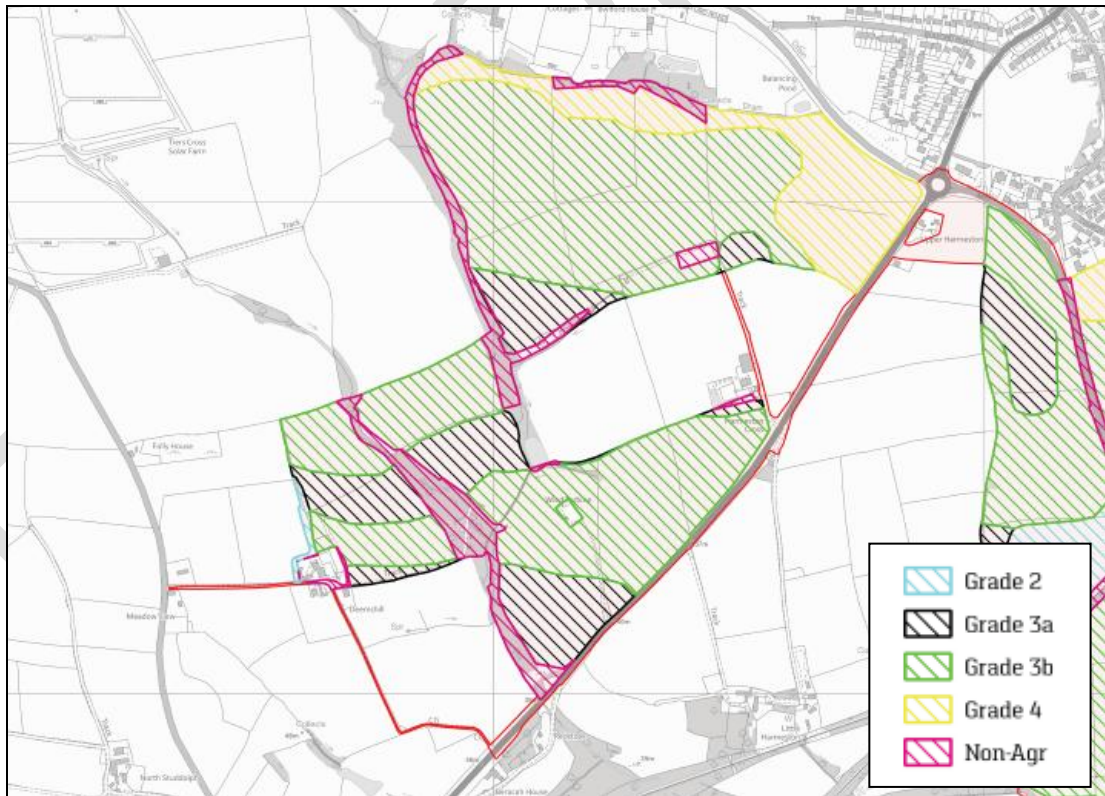
Land Quality

- 5.2 The land quality has been determined by Amet Property Ltd. Their surveys covered a larger area than the Site and, as compared below, it can be seen that in determining the area for the panels, the larger area of Grade 2 to the west, and the block of mostly Subgrade 3a in the centre of the western area, have been excluded.

Insert 34: ALC of Western Area (larger area surveyed)

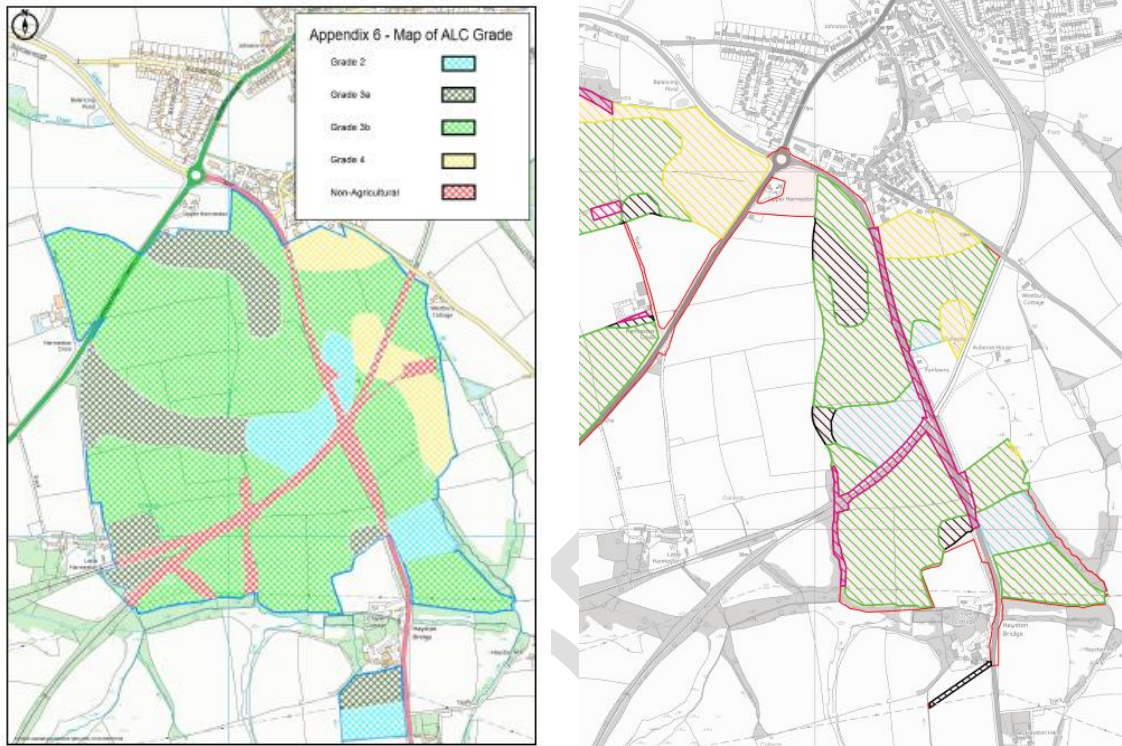


Insert 35: ALC of the Site



5.3 The eastern part of the Site comprises mostly Subgrade 3b with smaller patches of Grades 2, 3a and 4. The wider area surveyed and the ALC of the Site are compared below.

Inserts 36 and 37: ALC of the Eastern Area (larger area and Site)



5.4 The two ALC plans have been amalgamated into a single ALC map, which is reproduced in **Appendix KCC4**. The results for the Site are set out in Table 1.

Table 1: ALC Results (rounded to nearest 0.1 ha)

ALC Grade	Area (ha)	Proportion (%)
2 Very good	6.7	5.2
3a Good	16.4	12.8
3b Moderate	74.4	57.9
4 Poor	13.5	10.5
NA Non-agricultural	9.4	7.3
Urban and not surveyed	8.2	6.3
Total	128.6	100.0

5.5 A selection of photographs of the Site are shown below.

Insert 38: Location of Photographs

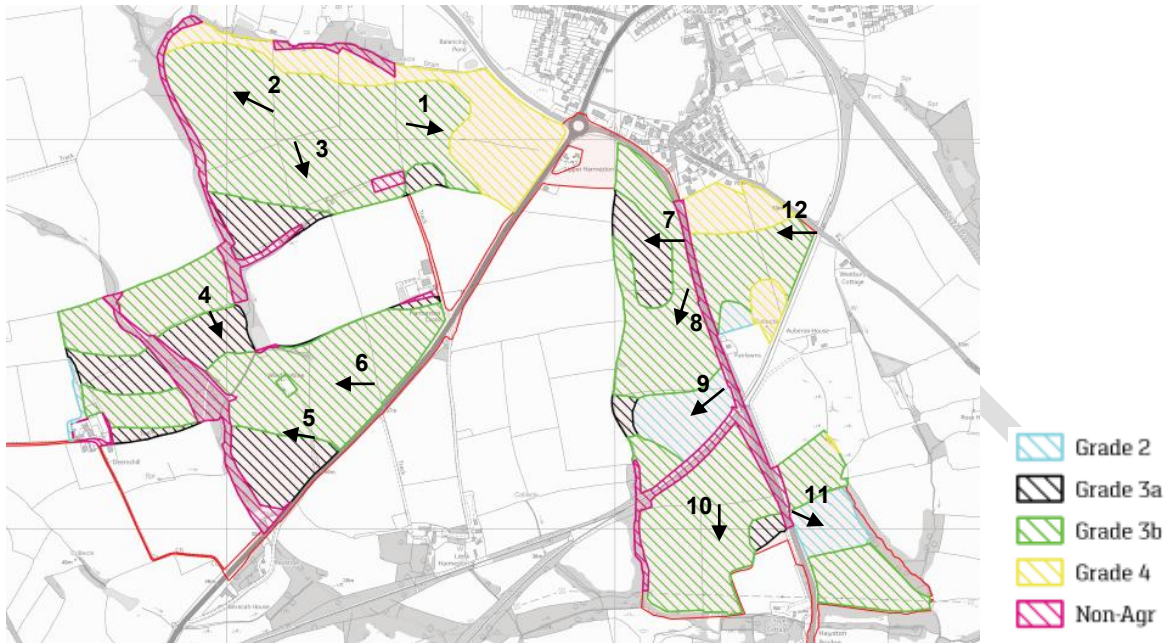


Photo 1: Grassland, Grades 3b and 4



Photo 2: Arable Land (Subgrade 3b)



Photo 3: Arable Land (Subgrade 3b)



Photo 4: Permanent Grassland, Subgrade 3a



Photo 5: Subgrade 3a (left) and Subgrade 3b (right)



Photo 6: Subgrade 3b Grassland



Photo 7: Subgrade 3a and 3b Grassland



Photo 8: Subgrade 3b Arable Land



Photo 9: Grade 2 Grassland



Photo 10: Subgrade 3b Permanent Pasture



Photo 11: Grade 2 and Subgrade 3b Grassland



Photo 12: Mixed Subgrade 3b and Grade 4



Farming Circumstances

- 5.6 The western part of the Site is part of Deemshill Farm. This is part of a holding extending to about 135 ha. The farm enterprise is comprised of two holdings, Deemshill Farm and Harmeston Cross Farm, which lie either side of the watercourse. The holding is farmed with a further 170 ha in the locality.
- 5.7 The farm grows cereals and grass for silage. A neighbouring farmer grows potatoes on parts of the farm on a 7 year rotation, and some cattle are grazed. Sheep are grazed over winter on a tack arrangement.
- 5.8 The eastern part of the Site is occupied by four different tenants. The north-eastern two fields are held on a short-term arrangement by a farm business that operates over approximately 800 ha from about 20 miles away. The field to the north and west of the A477 is grass ley grown for silage and grazing by a local farmer, and is held on a short-term arrangement. The fields to the southeast, which will include the substation, are occupied on a short-term basis for grazing and periodically cereals, by another local farmer.

- 5.9 Five fields are occupied on a secure agricultural tenancy as part of Lower Hayston Farm, which is based to the south. This is an 80 ha beef and sheep farm, which also grows some cereals and stubble turnips.

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6 ASSESSING THE MATTERS RAISED BY LUPU

6.1 This report has:

- set out the policy basis. Land quality does not form part of the DNS policy but is covered in PPW;
- described the construction process, which is generally only lightly disturbing of land;
- described the operational phase, which has no adverse effects on land quality or soils;
- and described the land quality and land use of the Site.

6.2 This report now reviews the potential effects on agricultural land and soils, and takes account of the comments raised by LUPU, in the following sections:

- section 7 considers land quality in the area and the efforts made to minimise the use of BMV in the design;
- section 8 considers the potential for adverse effects on land quality and reviews DNS and appeal decision on this matter;
- section 9 reviews the land use and economic implications, to assess what the impacts mean for food production and security;
- section 10 considers the effects on soils and the implications;
- section 11 specifically considers the matters raised by LUPU.

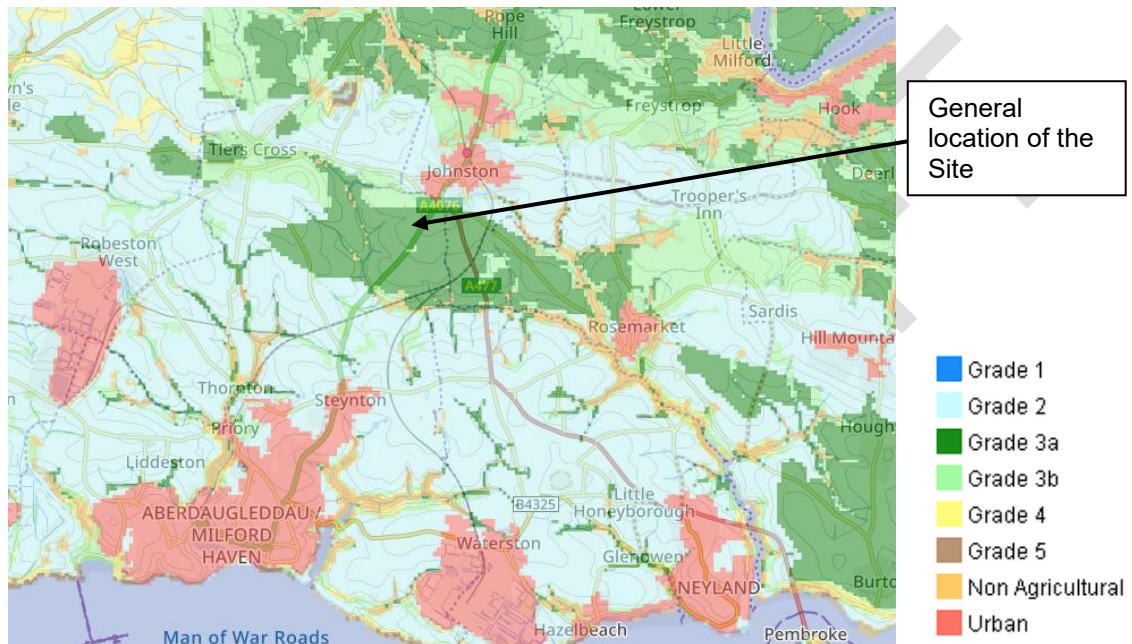
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7 LAND QUALITY IN THE DESIGN

Published Land Quality

- 7.1 The Predictive ALC map identifies that much of the wider area is predicted to be of BMV quality, including the Site. In the area between Johnston and Milford Haven, the Site lies in the poorest quality land available.

Insert 39: Predictive ALC Extract



- 7.2 As an authority, Pembrokeshire has a high proportion of land of BMV quality, based on the predictive ALC maps, compared to the national average. It is predicted that 32.7% of the county is BMV, compared to the national average of 15.5%.

Table 2: Proportion of Land by ALC Grade

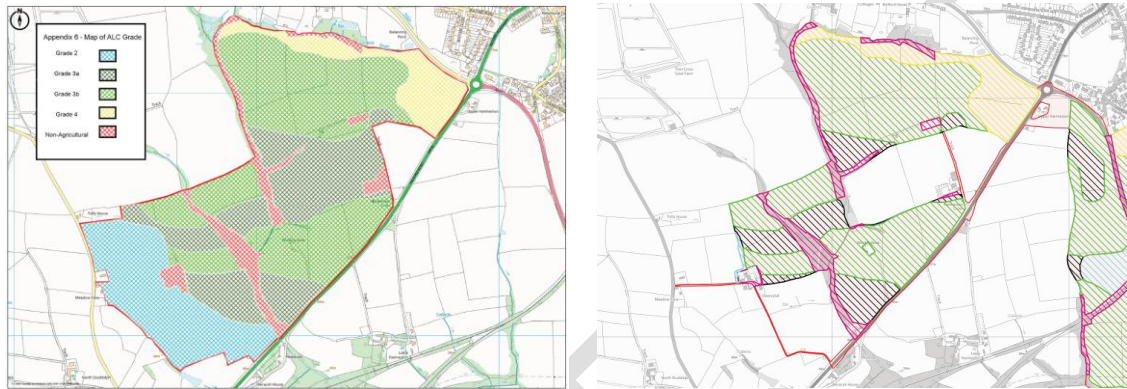
ALC Grade	Pembrokeshire	Wales
1 Excellent	0.0	0.2
2 Very good	8.9	6.1
3a Good	23.8	9.2
3b Moderate	42.4	23.5
4 Poor	7.1	19.9
5 Very poor	4.9	22.2
Non-agricultural	9.2	14.8
Urban	3.7	4.1
Total	100.0	100.0

Design Considerations

7.3 As set out in section 5, land quality of a wider area was surveyed. The ALC identified that most of the Site is a mix of Subgrades 3a and 3b with patches of Grade 2 and Grade 4.

7.4 As can be seen from comparing Inserts 34 and 35, reproduced in smaller size below for ease of reference, the panel selection has taken account of land quality and has avoided using the larger areas of Grade 2 and Subgrade 3a.

Inserts 40 and 41: ALC Survey Area and ALC of Site



7.5 The Site now includes 23.1 ha of land of BMV quality. This exceeds the threshold for consultation with Welsh Government LUPU.

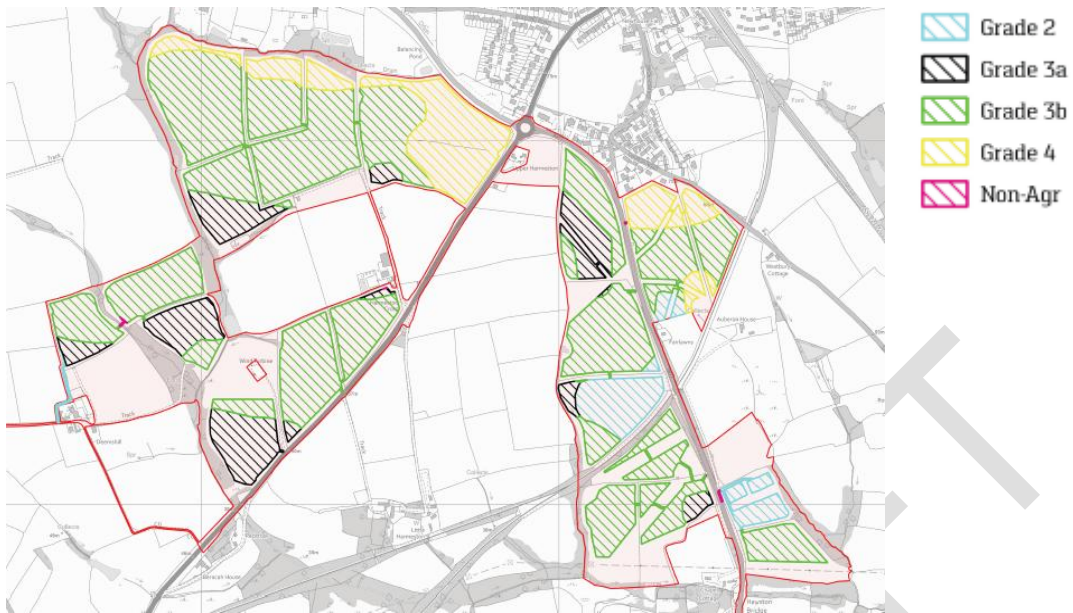
7.6 The area for panels, up to the security fencing, is smaller than this. As set out on the plan at **Appendix KCC5**, reproduced in smaller scale below, the areas within the panel fencing are as follows.

Table 3: ALC Results, Panel Area (rounded to nearest 0.1 ha)

ALC Grade	Area (ha)	Proportion (%)
2 Very good	4.9	6
3a Good	10.9	14
3b Moderate	50.1	65
4 Poor	10.6	14
Non-agricultural	0.1	1
Total	76.6	100

7.7 This distribution is shown on the plan below.

Insert 42: ALC Grading of Panel Areas

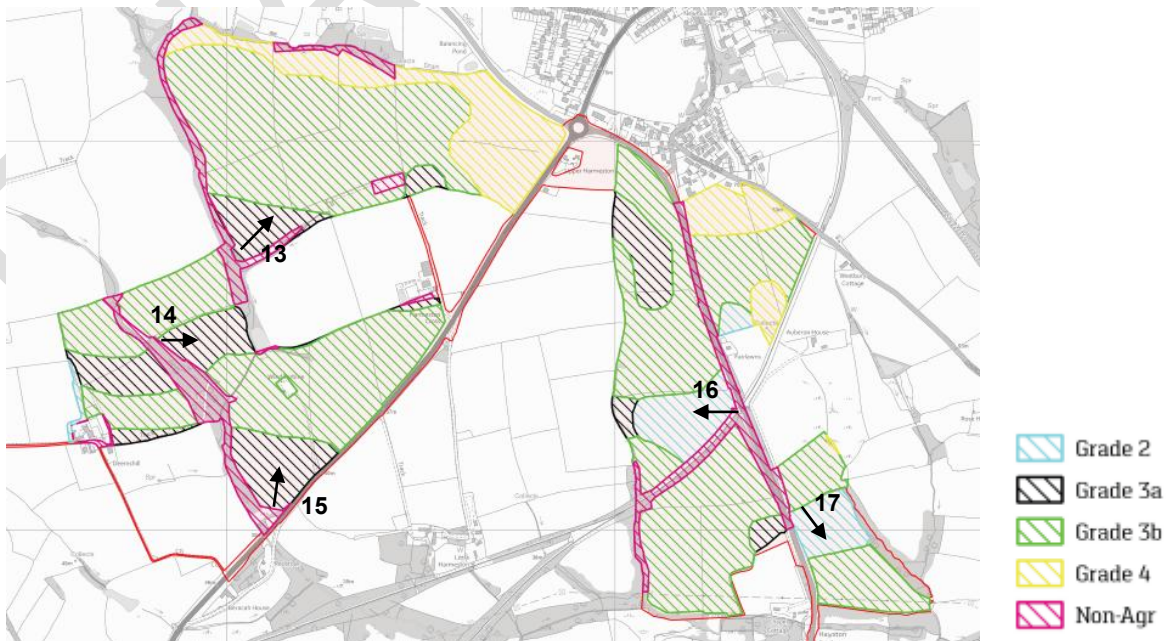


7.8 As set out on the plan in **Appendix KCC4**, the area of land of BMV quality within the areas for panels or fixed infrastructure will include:

- 4.9 ha of Grade 2;
- 10.9 ha of Subgrade 3a;
- a total of 15.8 ha of land of BMV quality.

7.9 Each of the main BMV areas are considered in the following sections, with photographs as shown below.

Insert 43: Location of Photographs



- 7.10 Part of an arable field at the northwestern part of the Site is Subgrade 3a. This comprises about half of a field, mixed in with poorer quality land. The BMV land is not capable of being farmed any differently to the rest of the field.

Photo 13: Looking NE Over Subgrade 3a towards 3b



- 7.11 The field included which is all Subgrade 3a is a permanent pasture field, and so far as the farmer can remember has never been ploughed.

Photo 14: Subgrade 3a Field



- 7.12 Photo 15 shows a grassland field which is a mixture of Subgrades 3a and 3b. There is no on-the-ground distinction between the grades, and this is farmed as a single field.

Photo 15: Mixed Subgrades 3a and 3b Field



- 7.13 One field of mostly Grade 2 is included. This is in long-term ley, as shown below, with areas of Subgrade 3a and 3b at the western end. Access to the field is from the road to

the north. It does not make any particular agricultural sense to leave this field out of the proposed panel area, isolated by road from other farmland.

Photo 16: Mostly Grade 2 Field



- 7.14 The substation is proposed in a location suitable for the point of connection, and the Grade 2 forms only a part of the field. Consideration was given to locating the substation elsewhere, but this is a well-screened field and well placed for connections.

Photo 17: Substation on Grade 2 Land



Conclusions

- 7.15 Accordingly it is concluded that:
- from a wider land quality perspective the general location was the poorest on the predictive ALC in the general area;
 - ALC surveys were carried out of a wider area, and where feasible higher quality land was not included in the layout.
- 7.16 The use of BMV has therefore been minimised by design.

8 IS LAND LOST OR DOWNGRADED?

8.1 This section considers:

- construction;
- operation;
- decommissioning.

Construction

8.2 The construction process was described in section 3.

8.3 For the majority of the installation works there is minimal disturbance to soils. This includes the insertion of the panel legs and the fencing both of which are simply pushed into the ground, as described in section 3. This operation does not remove or disturb soil, and so does not affect soil or land quality.

8.4 The narrow cable trenches that run from the strings of panels to the transformers involve narrow trenches, similar to field drainage pipe widths, and do not adversely affect land quality if reinstated in reverse order.

8.5 Land disturbance for temporary construction compounds is short term and does not affect land quality. The works involve removing topsoil only, which is stored and then reinstated, as described in section 3.

8.6 The access tracks involve the removal of topsoil, which will be stored for restoration on decommissioning. These areas involve long-term storage, adjacent to the track, so that topsoil can be pulled back mechanically on decommissioning.

8.7 The substation and operations and maintenance compound are proposed on Grade 2 land, as this is the closest place to the Point of Connection. The operations and maintenance compound will involve only topsoil removal, similar to the construction compound area, but the substation works will be more extensive. It is assumed that the substation area will not be capable of restoration back to Grade 2.

8.8 Table 3 below shows the area disturbed long term for the construction through to decommissioning by ALC grade. This is based on the following dimension assumptions:

- width of track maximum 4.0 m disturbed;
- area of transformers 50 sqm each.

Table 4: ALC Land Disturbed (rounded up to the nearest 0.1 ha)

Works	Area by ALC Grade (ha)				
	2	3a	3b	4	Total
Tracks	0.2	0.3	1.5	0.6	2.6
Transformers	0.1	0.1	0.3	0.1	0.6
Substation	0.3	0	0	0	0.3
O and M Compound	0.4	0	0	0	0.4
Total	1.0	0.4	1.8	0.7	3.9

- 8.9 The works will therefore disturb 3.6 ha temporarily and 0.3 ha permanently (substation). Of the areas disturbed:
- 1.4 ha is BMV;
 - 2.5 ha is non BMV.

- 8.10 Only 0.3 ha of land, of Grade 2 quality, will be lost (ie permanently or irreversibly), for the substation.

Operation

- 8.11 There is no adverse effect on agricultural land quality during the operational phase.
- 8.12 Planning policy seeks to conserve the use, but not to insist on the BMVAL being used. That must be right, because as the ALC: Frequently Asked Questions (May 2021) explains, (copy reproduced at **Appendix KCC3**):
- “the current land use does not affect the grade or longer-term agricultural potential”;
 - “the ALC grade describes what the land is potentially capable of, not what it is currently used for”;
 - “the current or historical agricultural management, or intensity of use, does not affect the ALC grade”.
- 8.13 It is, the guide notes, “**extremely unlikely that an ALC grading would drop because of neglect or poor agricultural management**”. Therefore even if the land was poorly managed, the ALC grade would not be affected.

Decommissioning

- 8.14 Decommissioning works will not affect ALC grade.

8.15 So far as I am aware, no solar farms have been dismantled yet, but the removal of the legs should be a straightforward operation. As shown in the photo below, the steels have holes in them for cabling, but which can also be used to insert a hook. A mechanical bucket can then simply lift the legs back out of the soil. The small hole left will simply fill in naturally, as it does when you pull out a fence post or stake.

Insert 44: Legs



Conclusion

8.16 Therefore it is concluded that:

- 0.3 ha of Grade 2 (BMV) will be lost to the substation;
- 1.1 ha of BMV and 2.5 ha of non-BMV will be disturbed but can be fully restored on decommissioning.

Decisions on Whether Land is “Lost”

8.17 Subject to appropriate land management, during the construction, operation and decommissioning phases, there will be no adverse effects on land quality. Land will not be lost and all areas, except for the substation area, can all be fully restored.

8.18 This is generally accepted in DNS applications recently, as per the decisions below:

- (i) in the Inspectors report for the DNS scheme at St Asaph (DNS/3247619) the Inspector made the following comments. The Inspector stated, inter alia, that “**I am therefore satisfied that the technical details necessary to minimise the risk of damage to the soil resource and the likelihood of permanent loss of BMVAL could be delivered by the construction Method Statement, the outline and detailed Decommissioning Method Statement and the Soil Management Plan, secured by way of conditions**” (para 310). She went on to conclude

“Nevertheless, because the proposal would be temporary and the proposed mitigation would ensure that it would not degrade the quality of the land over the time it would be in place, I find that it would not result in any irreversible or permanent loss of agricultural land” (para 314).

- (ii) in the Inspector’s report for the DNS scheme at Llanfihangel-yn-Nhowyn, Anglesey (DNS/3217391) the Inspector commented in para 322 that **“in this case, as a result of the attention given to the matter and the safeguarding conditions which would be imposed, I do not consider that the quality of the BMV land would be significantly reduced”**. She went on to conclude that **“I have found that the BMV value would be retained and/or restored during construction, operation and when the proposal was decommissioned subject to the recommended conditions. These further two considerations are significant and weigh heavily in support of my decision on BMV” (para 327)**. She went on to conclude that **“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” (para 328);**
- (iii) in the Inspector’s report for the DNS scheme at Penpergwn, Monmouthshire (DNS/3252305) the Inspector concluded that **“I am satisfied that the construction and decommissioning details and practices necessary to minimise the risk of significant damage to soils, and possible permanent loss of BMVAL, could be delivered and secured by means of suitable conditions” (para 271)**. He went on to conclude **“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” (para 275);**
- (iv) In the Inspector’s report for the DNS scheme at Alaw Môn, Ynys Mon (DNS/327472) the Inspector commented that **“In this case the evidence indicates that the erection and decommissioning of the arrays given the technique adopted which involves driving the metal supports into the ground can be undertaken with negligible soil disturbance. Controlling the construction activity to avoid wet periods and the other measures detailed in the application would protect the quality of the land on the vast majority of the site. The engineering operations and soil disturbance to provide the BESS and create tracks would have an impact that would require more work to reverse. However, even if the**

associated mitigation measures were not wholly successful the impact on the extent of BMVAL would be modest in relation to the scale of development” (para 156).

Conclusion: is land lost or downgraded?

- 8.19 A small area, 0.3 ha for the substation, will be lost. Otherwise a modest area (1.1 ha of BMV) will be disturbed for tracks etc, but will be restored fully on decommissioning. Beyond the 0.4 ha for the substation, the land will not be lost or downgraded.

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9 ECONOMIC AND LAND USE IMPLICATIONS

Current Land Use

- 9.1 As described in section 5, the land is currently used for a mix of agricultural enterprises. Mostly the land is grassland or ley grassland used for producing silage or grazing. Some of the land is used for growing cereals. On rotation, so varying year to year and some years none at all, some of the Site is used for growing potatoes. Some of the Site is used for growing maize for animal feed.
- 9.2 Grazing includes cattle and sheep, and some of the land is used to graze sheep in the winter on tack.

Proposed Land Use

- 9.3 Once the panels are in place the potential for arable cropping (cereals, maize and potatoes) will be curtailed or lost for the duration of the operational phase. The potential to use the grassland for cutting hay or silage, in and around the panels, will be lost for the duration of the operation phase. The potential to graze cattle in and around the panel areas will similarly be restricted.

Does Reducing Intensity of Use Affect ALC Grade?

- 9.4 Reducing the intensity of land use or grazing does not affect the land quality. This is made clear in Frequently Asked Questions (**Appendix KCC3**), where the question is: can land be high grade if it is not cropped or used for grazing? The answer is “**the current land use does not affect the land grade or longer term agricultural potential of land**”.

Does Planning Policy Seek to Maintain Intensive Use of Land?

- 9.5 Planning policy, and wider agricultural policy, does not seek to see BMV agricultural land farmed intensively or as arable land. Policy is in place to conserve the resource. Policy is not in place to require agricultural land, or BMV land, to be farmed in any particular way. There may come a time when food supply is short and we need to reconsider the priorities for our land and conserving BMVAL ensures that it is there should it be needed.
- 9.6 We are not at that point. The need to tackle climate change is paramount. The BMV policy is not harmed if the land is not farmed intensively or for arable use.
- 9.7 As described in section 2 and as confirmed in the Welsh Government’s letter of 17 November 2025 (**Appendix KCC2**), current and future agricultural use of land (and therefore food production and local economic considerations) are not part of the sequential approach to the use of BMV land in PPW 3.58 and 3.59.

- 9.8 Planning policy does not constrain the non-agricultural use of land of subgrades 3b, 4 or 5 either. The use of agricultural land per se is not a constraint to solar development.
- 9.9 By good management the soil resource will not experience any short or long-term harm. The BMV quality will not be affected. The resource will not be “lost”. Hence planning policy in the PPW is not harmed. There is detailed evidence to show this is achievable.
- 9.10 The reduced level of intensity of grazing through the life of the scheme will not affect the BMV status. It will not harm policy, which makes no requirement for land to be farmed at any level of intensity, even BMV. On the contrary, lower intensity grazing with no inorganic fertilisers, no ploughing and less grazing pressure will help meet the objectives for sustainable land management that the Welsh Government is considering.

Quantifying the Effect

- 9.11 It is difficult to quantify the effect. Farming enterprise performance is influenced by a wide range of factors, weather, management, world prices, diseases and personal choice, and with livestock the price paid when buying or achieved when selling animals. The following table uses a standard budgeting book, the Nix Farm Management Pocketbook, (extracts at **Appendix KCC6**) and compares the Gross Margin for average and high performance enterprises for cereal and sheep grazing, as the two uses most prevalent across the site.
- 9.12 Sheep gross margins are influenced by many factors, including lambing percentage and feed costs, which are unrelated to grass growth, and therefore the economic difference stated is greater than could be attributed realistically to better grass growth alone.

Table 5: Gross Margin Analysis

Enterprise	Average (£/ha)	High (£/ha)	Difference (£/ha)
Winter wheat	988	1,210	222
Lowland breeding sheep	904	1,409	505
Average	946	1,310	364

- 9.13 The economic benefits of the 23.1 ha of BMV within the Site, or alternatively the 15.8 ha of BMV within the panel areas, can be estimated. For simplicity the average of the two land uses is used for the comparison (to nearest £1,000):
 - gross margin average difference 23.1 ha BMV: £8,400;
 - gross margin average difference 15.8 ha BMV: £5,800.
- 9.14 This is not significant in the context of the local or Welsh agricultural industry.

10 THE EFFECTS ON SOILS

Effect on Soils

- 10.1 There will be potential for beneficial effects on soil health and quality.
- 10.2 The majority of land within the Site is currently arable land or improved grassland fertilised with inorganic fertiliser, as well as spread with farmyard manure and liquid slurry. The land will be sown to grassland and managed, including potentially by being grazed with sheep, for the duration of the operation phase. This is expected to have a positive benefit for the soils.
- 10.3 Soil is an important resource. It is estimated by the Environment Agency (EA) that the UK's soils store about 10 billion tonnes of carbon, equal to about 80 years of greenhouse gas emissions, but that an estimated 4 million hectares are at risk of compaction and 2 million ha are at risk of erosion. Intensive agriculture has caused arable soils to lose 40 – 60% of their organic carbon².
- 10.4 The EA's report notes that significant decreases in erosion risk occur when fields change from winter cereal use to permanent grassland. Organic matter in soils acts like a sponge and can hold 20 times its weight in water. In the British Society of Soil Science note³ they identify that "**significant long-term land use change (eg. conversion of arable land to grassland or woodland) has by far the biggest impact on soil organic carbon (SOC)**", and that soils with a higher rate of SOC are less prone to runoff and erosion, have greater water infiltration and retention, increased biological activity and improved nutrient supply.
- 10.5 Overall, therefore, for much of the land within the Site, where arable soils will go into long-term grassland land coverage, there will be a significant benefit for soils. This will be a temporary benefit, however, in that the benefits would potentially be reduced or lost if arable farming activities recommence following decommissioning.
- 10.6 In respect of adverse effects, there will be no requirement for heavy machinery to traffic soils during the operation phase except during periods of ad hoc replacement of infrastructure. Accordingly, there will be no compacting of soils and the combination of

² Environment Agency (2023) Summary of the State of the Environment: Soils

³ British Society of Soil Science (2022) '*Benefitting from Soil Management in Development and Construction*'.

increasing organic matter levels and lack of machinery activity will allow a natural enhancement of the soil. There will be no adverse impacts, therefore.

- 10.7 Water run-off from PV panels will reach the ground under the Solar PV Arrays. PV panels come in sections and water drains down between these sections, not only at the lower edge, as shown below. Soils will not be harmed during the operation phase due to lack of moisture. This can be seen in the inserts below, where gaps between PV panels can be seen and grass growth below the panels is good.

Insert 45: Solar PV Arrays showing Gaps Between PV Panels



Insert 46: Grass Growth Below and Between Solar PV Arrays



- 10.8 There is therefore the potential for improvements in one or more soil functions. These are beneficial impacts. They are, however, temporary and could be reversed once soils are returned to arable cropping following decommissioning. Any adverse effects on soils during the operation phase will be negligible.

11 LUPU CONCERNS

Concerns

- 11.1 As set out in section 1.7 the LUPU comment at pre-application stage are:
- (i) LUPU is concerned about impacts on soils and reversibility, and considers impacts on soils are likely;
 - (ii) LUPU considers that the effects on BMV agricultural land need to be considered.

Soil Effects

- 11.2 The LUPU concern regarding effects on soils is not explained further. There is no reference to any scientific research or other publication to identify the source of the concern.
- 11.3 As set out in section 8 the concern about significant, or any, adverse effects on soils or land quality has not been shared by the Inspectors at the four DNS applications from which comments have been quoted. LUPU were invited to participate in open hearings for all four, but only participated in two (St Asaph and Alaw Mon).
- 11.4 The LUPU concerns may have arisen as a result of the relative youth of solar farms. The technology is fairly recent, and there are few solar farms more than 10-15 years old.
- 11.5 The ISEP publication “Solar PV on Agricultural Land” (published January 2026) may go some way to assuage such concerns. The publication refers to a report published for the Welsh Government in 2023. The ISEP report notes:
- “This considers soil compaction, benefits of carbon capture and soil disturbance on decommissioning through the removal of anchors. However, the full impacts of solar PV are not yet understood. For example, the installation of structures supporting solar panels might cause subsoil compaction, but in the absence of any decommissioning studies it is not possible to determine the nature or significance of this potential impact. Also, it is possible that the operational maintenance of solar panels might lead to repeated replacements and upgrades which increase mechanised activities in and around solar arrays”.**
- 11.6 The two points of concern both relate to the same risk: deep compaction from construction and decommissioning activities. The 2023 ADAS report recognises that compaction has to be significant to result in land quality downgrading, and that with good soil management there should not be any adverse effect on land quality.

- 11.7 As noted in the ISEP publication, there is no evidence of chemical leakage.
- 11.8 The risks of broken panels from exceptional storms is noted, as is the potential for these to be more frequent. Such storms are increasing because of the effects of climate change, and the primary driver for increasing solar power is to help tackle climate change.
- 11.9 Overall there is no evidence to indicate that soils will be likely to be adversely affected, and importantly that any adverse effects would be significant.

Effects on BMV Need to be Considered

- 11.10 This is agreed, and these potential effects have been considered in the report.

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12 SUMMARY AND CONCLUSIONS

- 12.1 Agricultural land quality has been taken into account carefully in the site selection and layout. The pre-application comments of the Welsh Government LUPU have been considered.
- 12.2 Future Wales: The National Plan 2040 sets out policy to help decarbonise Wales including by increasing renewable energy. Policy 18 sets out the approach to developments of national significance. Agricultural land quality is not included in the qualifying criteria.
- 12.3 Based on the provisional ALC maps, which show most of the area as Grade 2, the Site lies in an area predicted to be the lowest quality within the area to which connection to the grid is possible, with the Site shown mostly as subgrade 3a.
- 12.4 Detailed ALC survey has identified a mix from Grade 2 to Grade 4. The survey covered a wider area than is proposed for panels, and in the design process the larger areas of Grade 2 and subgrade 3a have been removed from the areas proposed for panels.
- 12.5 The Site includes a total of 23.1 ha of land of BMV quality, but this is contained in about 11 different patches, mixed with poorer quality land. Within the areas proposed for panels, only 15.8 ha of BMV is included.
- 12.6 The areas of BMV are, with one exception, generally small areas within larger fields, and exploiting the land differently to the wider, non-BMV field, would not be feasible. They are of limited agricultural benefit.
- 12.7 Importantly, and as has been accepted in a number of DNS applications, the land quality will not be lost. The land quality is disturbed only in generally small areas for tracks and small bases for transformer containers. Collectively, with of the order of 1,000 m of track on land of BMV quality, about 0.7 ha of BMV will be disturbed, but this can all be restored back to comparable ALC grade at decommissioning.
- 12.8 Approximately 0.4 ha of BMV will be disturbed temporarily for the maintenance depot, and 0.3 ha will be irreversibly affected by the substation.
- 12.9 The “loss” of BMV therefore amounts to 0.3 ha, a negligible amount.

12.10 In terms of land use, the use of land for agriculture is not controlled or required. Active use of BMV land is not part of policy in PPW. The implications are in any event limited.

12.11 Overall the proposals do not conflict with policy.

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APPENDIX KCC1

**Minister for Climate Change Letter to
Chief Planning Officers (1st March 2022)**

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Julie James AS/MS
Y Gweinidog Newid Hinsawdd
Minister for Climate Change



Llywodraeth Cymru
Welsh Government

Ein cyf/Our ref

To: Chief Planning Officers

1 March 2022

Dear Chief Planning Officers

Planning Policy Wales (PPW) paragraphs 3.58 and 3.59 outlines national policy towards safeguarding Wales' Best and Most Versatile (BMV) agricultural land.

Future Wales, the National Plan 2040, identifies BMV agricultural land as a national natural resource under Policy 9.

Further guidance is provided in Technical Advice Note (TAN) 6, including the consultation arrangements with the Welsh Government included at Annex B*; and, Practice Guidance: Planning Implications of Renewable and Low Carbon Energy).

Specifically PPW states that:-

'.....in development plan policies and development management decisions **considerable weight** should be given to protecting such [BMV] 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.

The purpose of this letter is to clarify that in accordance with Welsh Government policy outlined above, where BMV land is identified within a proposed solar PV array development, considerable weight should be given to protecting such land from development, because of its special importance, and unless other significant material considerations indicate otherwise it will be necessary to refuse permission. I have instructed officials to monitor closely proposals that would involve the loss of BMV land.

Local Planning Authorities (LPA's) are required to consult with the Welsh Government before granting planning permission for any proposals which do not accord with the Development Plan and would involve the loss (both permanent and temporary) of 20 hectares or more of BMV land. This includes losses which are less than 20 hectares but likely to lead to further losses amounting cumulatively to 20 hectares or more (Article 14 (1) of the Town and Country Planning (Development Management Procedure) (Wales) Order 2012/801 imposes this requirement).

Canolfan Cyswllt Cyntaf / First Point of Contact Centre:
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CF99 1SN

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Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

Whilst LPA's are not required to consult with the Welsh Government on planning applications which do not 'trigger' the statutory requirement as set out in Annex B, paragraph B2, any loss of BMV land may be a material consideration in the determination of planning applications.

For planning applications which do not 'trigger' the statutory requirement, as set in in Annex B, paragraph B2, the Welsh Government may take the initiative in commenting on planning applications as set out under Annex B, paragraph B5.

Should solar PV array applications on BMV agricultural land come before the Department for Climate Change, the Department will object to the loss of BMV agricultural land unless other significant material considerations outweigh the need to protect such land in accordance with Welsh Government policy and guidance outlined above.

When considering the search sequence and in development plan policies and development management decisions it is important to have access to accurate land quality information. The freely available [Predictive Agricultural Land Classification \(ALC\) Map 2](#) (version 2, 2019) published by Welsh Government identifies BMV land locations. Further guidance on its use and the need for ALC surveys can be found here - [Agricultural land classification: predictive map guidance | GOV.WALES](#).

ALC surveys are complex and the reports technical in nature and the Welsh Government therefore offers a free ALC report validation service which we would encourage LPAs to utilise. All consultations can be emailed to the Land Quality Advisory Service: LQAS@gov.wales

Yours sincerely



Julie James AS/MS
Y Gweinidog Newid Hinsawdd
Minister for Climate Change

* TAN6 Annex B Reference - Article 10 of the GDPO 1995 was revoked by the Town and Country Planning (Development Management Procedure) (Wales) Order 2012/801 and replaced by article 14(1) of this Order. References to SEED are now replaced by [Land Quality Advice Service](#).

APPENDIX KCC2

Welsh Government DCCRA Letter 17

November 2025

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Soil, Peatland & Agricultural Land Use Planning Unit.
Uned Pridd, Mawndir a Cynllunio Defnydd Tir Amaethyddol.

Yr Adran dros Newid Hinsawdd a Materion Gwledig /
Department for Climate Change and Rural Affairs.



Llywodraeth Cymru
Welsh Government

Ref: DNS/CAS-03072-D7X6N7

Rhys Rigby
Infrastructure Case Work Officer
Planning and Environment Decisions Wales
Crown Buildings
Cathays Park
Cardiff
CF10 3NQ

By Email: PEDW.Infrastructure@gov.wales

17th of November 2025.

Dear Rhys Rigby,

Re: The Developments of National Significance (Wales) Regulations 2016 – Proposed Alleston Solar Farm, Pembrokeshire (DNS/CAS-03072-D7X6N7). Response to proposed Topic Based Hearing Sessions - Best and Most Versatile Agricultural Land.

I refer to your letters of the 15th of August and 12th of November, regarding a Hearing Session to examine Best and Most Versatile Agricultural Land (BMVAL). The Department has carefully considered the topic-based questions for discussion and advises it will rely upon representations made to date and will not be attending Hearing.

The Department is grateful for the invitation to participate in the upcoming Hearing; however, it considers there to be sufficient information available to come to a view without a dedicated session.

There is one matter of ambiguity relating to Topic Session Matter 3: “*The present and likely future agricultural use of the land, including impact on farm businesses (with and without the proposed development)*”.

To remove any ambiguity over the Department’s position, *the present and likely future agricultural use of the land* is not a part of the sequential test as set out in PPW 3.58 and 3.59. Policy does not require decision makers to determine on a case-by-case basis the present and likely future agricultural use for a particular parcel of BMVAL.

Welsh Ministers’ Decision Letter¹ on DNS/3274702 (DL74) supports this view: “*Also, whilst the BMVAL within the application site is not being used to its productive potential at the moment, the Agricultural Land Classification grade describes what the land is potentially capable of, not what it is currently used for*”.

¹ <https://planningcasework.service.gov.wales/case/CAS-01311-C4L3C4>

Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

Yours sincerely

Mr RJ Cooke
Head of the Soil, Peatland & Agricultural Land Use Planning Unit
Landscapes, Nature & Forestry Division
Department for Climate Change & Rural Affairs
Welsh Government
[REDACTED]

APPENDIX KCC3
Welsh Government's Frequently Asked
Questions (May 2021)

FINAL DRAFT

Agricultural Land Classification

Frequently Asked Questions

May 2021.



Llywodraeth Cymru
Welsh Government

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General Background Questions

What is the ALC system?

The Agricultural Land Classification (ALC) system provides a method for assessing the quality of farmland in England and Wales. The ALC system classifies land into five grades, with 1 being the best and 5 being the worst and Grade 3 subdivided into Subgrades 3a and 3b. The current grading methodology is described in [The Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land \(MAFF 1988\)](#) sometimes referred to as 'The Blue Book'.

What is agricultural land?

Agricultural land is land which is capable of being used for agricultural purposes (e.g. cropping). The current use of the land does not affect the grade or agricultural potential of the land. Where the potential for agriculture has been irreversibly lost (e.g. through housing development) the land should no longer be classed as agricultural. For planning purposes, it is recommended that the Local Planning Authority is contacted to confirm the status of the land. Also see: [Can land be high grade if it is not cropped or is used for grazing?](#)

What is ALC used for?

The ALC is used to grade the quality of agricultural land so that informed decisions can be made over its future use within the planning system. The planning systems in England and Wales seek to conserve the 'Best and Most Versatile (BMV) agricultural land. Government policies in **Wales** with regard to BMV land can be found on the Welsh Government ALC webpages at: [Welsh Government Web Topic - Agricultural Land Classification](#) BMV policies in **England** are set out in the National Planning Policy Framework.

What is Best and Most Versatile agricultural land?

National planning policy defines the Best and Most Versatile agricultural land as land within grades 1, 2 and 3a. This is good to excellent quality land which can best deliver the food and non-food crops for the future.

How does the Agricultural Land Classification system grade land?

The criteria for grading are based on the long term physical limitations of land for agricultural use, such as **climate** (temperature, rainfall, aspect, exposure and frost risk), **site** (gradient, micro-relief and flood risk) **and soil** (texture, structure, depth and stoniness, and also chemical properties which cannot be corrected), and interactions between these factors such as soil wetness, droughtiness and erosion. Field survey to obtain site and soil data is required. The current grading methodology is described in: [The Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land \(MAFF 1988\)](#)

What do the different grades mean?

Generalised Description of the Agricultural Land Classification Grades

Grade & standard colour notations	Description of agricultural land	Detail
1	Excellent quality	No or very minor limitations on agricultural use. Wide range of agricultural and horticultural crops can be grown. High yielding and consistent.
2	Very good	Minor Limitations on crop yield, cultivations or harvesting. Wide range of crops but limitations on demanding crops (e.g. winter harvested veg). Yield high but lower than Grade 1.
3 (subdivided)	Good to moderate	Moderate limitations on crop choice, timing and type of cultivation, harvesting or level of yield. Yields lower and more variable than Grade 2.
3a	Good	Moderate to high yields of narrow range of arable crops (e.g. cereals), or moderate yields of grass, oilseed rape, potatoes, sugar beet and less demanding horticultural crops.
3b	Moderate	Moderate yields of cereals, grass and lower yields other crops. High yields of grass for grazing/ harvesting.
4	Poor	Severe limitations which restrict range and/or level of yields. Mostly grass and occasional arable (cereals and forage), but highly variable yields. Very droughty arable land included.
5	Very poor	Severe limitations which restrict use to permanent pasture or rough grazing except for pioneering forage crops.

A full description of the grades can be found in [Appendix 1](#).

Can land be high grade if it is not cropped or is used for grazing?

The current land use does not affect the grade or longer term agricultural potential of the land. Land use is an economic and management choice of the land manager. The ALC grade describes what the land is potentially capable of, not what it is currently used for.

Can the ALC grading be changed by farming practices?

Normal agricultural land management will rarely, if ever, affect the ALC grading of land. The grading is based on the long term physical and chemical limitations of land for agricultural use. The current or historic agricultural management, or intensity of use, does not affect the ALC grade. ALC grading could potentially only be improved by very major and expensive interventions, well beyond the scope of normal agricultural works. Examples could include major new drainage schemes, new flood defence systems or infilling / levelling of highly uneven land. It is extremely unlikely that an ALC grading would drop because of neglect or poor agricultural management.

Will fertilizer improve the grade?

Applications of fertiliser or lime are part of the normal management of agricultural land and do not affect the grade. Normal fertiliser levels in the soil have no bearing on ALC grade. Chemical limitations in ALC relate to major long term problems that cannot easily be remediated. These can include extreme acidity, saline environments and presence of toxic elements.

What can I grow on my land? (Crop suitability)

The suitability of land for certain crops is determined by a variety of factors. The ALC Grade of the land doesn't determine what can be grown, but indicates the type of crops that are generally suited to land of that quality and versatility. Typical crops are given in Appendix 1.

Are land values determined by ALC grade?

The ALC system was developed to inform land use planning decisions. The use of the ALC system for land valuation has never been intended and should not be used for this purpose.

Grade and Map Questions

What is the grade of my land?

The only way to accurately determine the agricultural grade of land is by way of a detailed field survey in accordance with the current ALC 1988 guidelines. [What does a detailed field survey involve?](#)

In **Wales**, the Welsh Government holds detailed field survey information for selected areas and a predictive map which can be found at <http://lle.gov.wales/map/alc2>. For further information please contact LQAS@gov.wales.

The most up-to-date information on ALC Grades in **England** can be found on www.Magic.gov.uk/ (Landscape tab). Detailed field surveys (Post 1988 ALC layer on the Magic website) are available for selected areas. Also see: What about strategic maps showing the likely occurrence of best and most versatile land mentioned in [TIN049](#)?

Why do different maps show different grades for the same area?

ALC assessments became more field based and site specific from 1976, partly due to limitations of the Provisional mapping. On 1 January 1989, the current system of ALC grading was introduced: (*The Revised guidelines and criteria for grading the quality of agricultural land*: MAFF 1988). The guidelines provide the most definitive ALC grading and normally supersede any earlier surveys. In some areas there will be several different levels of detail of ALC data. Soils are variable and the grade of the land can vary over small distances. The ability to map this variation depends on the scale of the survey and the associated scale of mapping. The most detailed survey will usually represent the most definitive grading.

What are the 'Revised Guidelines'?

The ALC was devised and introduced in the 1960s and Technical Report 11 (MAFF, 1966: Technical Report 11, Agricultural Land Classification of England and Wales) outlined the national system. Following a review of the system, criteria for the sub-division of Grade 3 (3a, 3b & 3c) were published in 1976 and Technical Report 11/1 (MAFF, 1976: Technical Report 11/1, Agricultural Land Classification of England and Wales). The definition and identification of Sub-grades within Grade 3) outlined the updated.

The new and most up-to-date guidance was issued in 1988 "*The Revised guidelines and criteria for grading the quality of agricultural land*". This was implemented from 1 January 1989. The 1988 Revised guidelines were developed and tested with the aim of updating the system without changing the original concepts. This recognises two subgrades within in Grade 3: Subgrade 3a and Subgrade 3b, the latter being a combination of the previous Subgrades 3b and 3c. Consequently, modern ALC surveys are sometimes referred to as 'post 1988' or post revision. Any surveys carried out using the old guidelines (sometimes referred to as pre 1988 surveys or pre revision) would need to be reassessed under the current criteria.

Survey Related Questions

There is no detailed survey of my land, is a field survey required?

It depends why you want to know the grade of your land. For a planning purpose you should contact your local planning authority for advice.

What does a detailed field survey involve?

ALC surveys are undertaken, according to the published [Guidelines](#) by field surveyors using hand held augers to examine soils to a depth of 1.2 metres. This usually consists of one boring per hectare, supplemented by digging occasional small pits (usually by hand) to inspect the soil profile at representative locations to provide more detailed information about soil conditions to depths up to 1.2 metres. Information obtained by these methods is combined with climatic and other data to produce an ALC map and report, which will normally include individual soil profile and pit descriptions, and written explanations to support the grading applied. ALC maps are normally produced on an Ordnance Survey base at varying scales from 1:10,000 for detailed work to 1:50 000 for reconnaissance survey. It is important that ALC surveys are completed by an experienced ALC surveyor to ensure that the evidence is accurate and robust to inform planning decisions.

Can you recommend an ALC surveyor?

The Institute of Professional Soil Scientists (the professional body of the British Society of Soil Science) maintains a register of competent soil surveyors who have experience of carrying out ALC surveys. www.soils.org.uk. Other professional bodies may also maintain lists of their members who undertake ALC work. It is important that ALC surveys are completed by an experienced ALC surveyor to ensure that the evidence is accurate and robust to inform planning decisions.

Is urban land subject to ALC surveys?

Urban land may be shown on ALC survey maps. It will normally not be surveyed because the land has relatively little potential for return to agricultural use. The full definition of urban and other non-agricultural categories in the ALC system can be found in Appendix 1. You should contact your local planning authority for advice on whether an ALC survey is required to support a planning application.

Does the Welsh Government carry out ALC (detailed field) surveys?

Yes. The Welsh Government does carry out detailed Agricultural Land Classification (detailed field) surveys. These surveys are undertaken largely in response to requests from Local Planning Authorities for individual sites or areas at the urban edge which are being considered for development. The Welsh Government also holds copies of detailed individual Agricultural Land Classification (ALC) surveys carried out by them, as well as the former Welsh Office or Welsh Assembly Government. In addition the Welsh Government also provides a site survey validation service for Local Planning Authorities providing a technical assessment of submitted reports and enables them to fully consider land quality in the decision making process.

Does Natural England carry out ALC surveys?

Natural England provides advice to Local Planning Authorities on ALC matters, but does not carry out ALC field surveys. Natural England holds copies of detailed individual Agricultural Land Classification (ALC) surveys carried out by the former Ministry of Agriculture, Fisheries and Food until the late 1990s. These surveys were undertaken largely in response to requests from Local Planning Authorities for individual sites or areas at the urban edge which were to be considered for development; not all agricultural land was surveyed at the time. There is no longer a national programme to survey all areas in detail and since the late 1990's, the Government no longer undertakes detailed field surveys itself. Specialist consultants are engaged by developers, Local Planning Authorities, landowners and others

to carry out detailed Agricultural Land Classification surveys for local plans and other development proposals.

What sampling density should I use in my ALC field survey?

There is no prescribed guidance on the sample density of field surveys; however, most experienced ALC surveyors use an average density of 1 sample point per hectare (carried out on the Ordnance Survey 100m grid). Soil pits are also useful to obtain further information about soil structure, porosity and stone content, rock layers etc. to enable confirmation of the grading found on site. The number of soil pits is difficult to specify in advance of starting field survey work. In general, one soil pit is dug for each of the main grades or soil types on the site, though not necessarily for each map unit, but it should be left to the professional judgement of the surveyor as to the appropriate minimum number required.

Surveys at this detailed level can also enable an assessment of the soil resources in line with the [Defra Code of Practice for the Sustainable Use of Soils on Construction Sites](#) and will allow users to present the land quality case to public inquiry level if required.

Depending upon the type of development, location, scale, purpose of the survey, availability of existing ALC data etc., less detailed surveys (or sometimes more detailed) surveys may be undertaken, but expert advice must be sought from a soil scientist or other practitioner experienced in undertaking ALC survey work. All data captured in ALC surveys is done to the same standard (i.e. standard recording of soil colour, texture etc. plus pits). The only difference in a less detailed survey is the grid spacing, not the quality or detail of data capture at the points examined.

It is important that ALC surveys are completed by an experienced ALC surveyor to ensure that the evidence is accurate and robust to inform planning decisions. The British Society of Soil Scientists run training courses and has a competency scheme, *Working with Soil*, covering aspects of soil survey and the ALC system.

What climate data is used for ALC?

The definitive climatic data used for assessing the overall climatic limitation (and for the wetness and droughtiness limitations) are obtained from a series of grid point datasets compiled specifically for ALC (Meteorological Office 1989: Climatological Data for Agricultural Land Classification). They provide long term average values of the required variables on a 5km grid covering the whole of England and Wales. These variables are interpolated for the location (grid reference) and altitude for intermediate sites.

I am a consultant/soil scientist undertaking a detailed ALC site survey and the land benefits from irrigation. Should I be taking this into account in my grading assessment?

No. The advice that irrigation should be removed from the ALC assessment was expressed in a consultation on the ALC system in 1996.

APPENDIX 1: AGRICULTURAL LAND CLASSIFICATION (ALC)

Descriptions of the Grades and Subgrades

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics. The grading guidance and cut-offs for limitation factors in the MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land enable land to be ranked in accordance with these general descriptions.

Descriptions are also given of other land categories which may be used on ALC maps.

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/ airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland. Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (e.g. polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

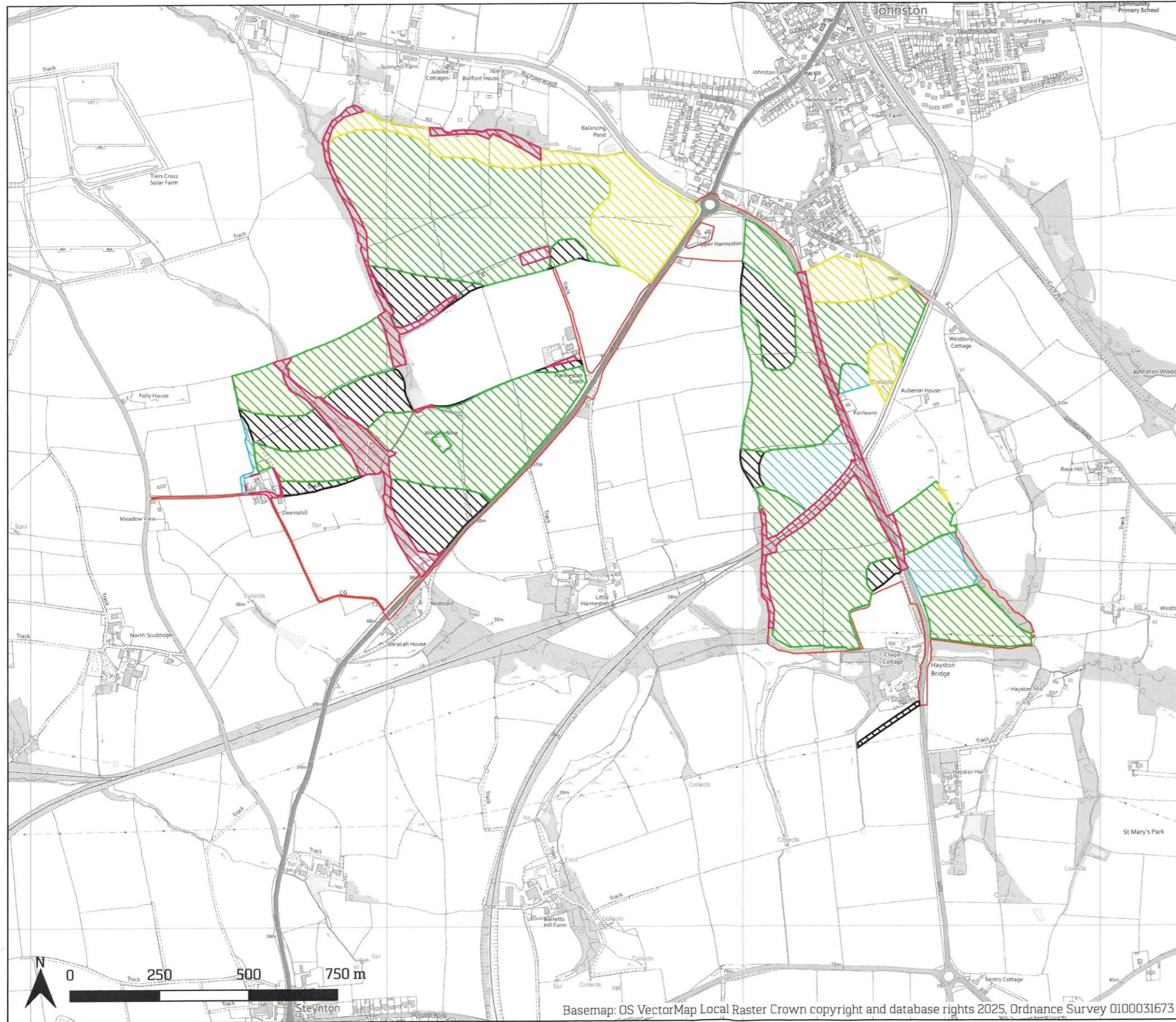
Land not surveyed

Agricultural land which has not been surveyed. Where the land use includes more than one of the above land cover types, e.g. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

Source: Section 2: [MAFF \(1988\) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land.](#)

APPENDIX KCC4
Combined ALC Map

FINAL DRAFT



Draft ALC Calculation -A3L (Overview)
 Map Projection: EPSG:27700 Scale: 1:10000 @ A3
 Map Centre Coordinates : 192586 ,209169

Project: Great Harmeston Solar PV & BESS
Location: Land on west of Milford Road A4076 in Harmeston Cross, Land north east of Deemshill and Land in east and west of A477 Fairlawns

Legend

	Red Line Boundary (PLNG Scpng - 128.57 Ha)
	Grade 2 - 6.66 Ha
	Grade 3a - 16.39 Ha
	Grade 3b - 74.38 Ha
	Grade 4 - 13.53 Ha
	Non-Agr - 9.39 Ha

Notes:
 Redline Boundary for Planning 128.57 Ha is taken into account for estimating the ALC extent.
 Based in the above the total amount of BMV land is 23.05 Ha (6.66[G2] + 16.39[G3A]) and 17.9% of 128.57 Ha Redline Boundary or 19.6% of 117.85 Ha of ALC surveyed Area within Redline Boundary

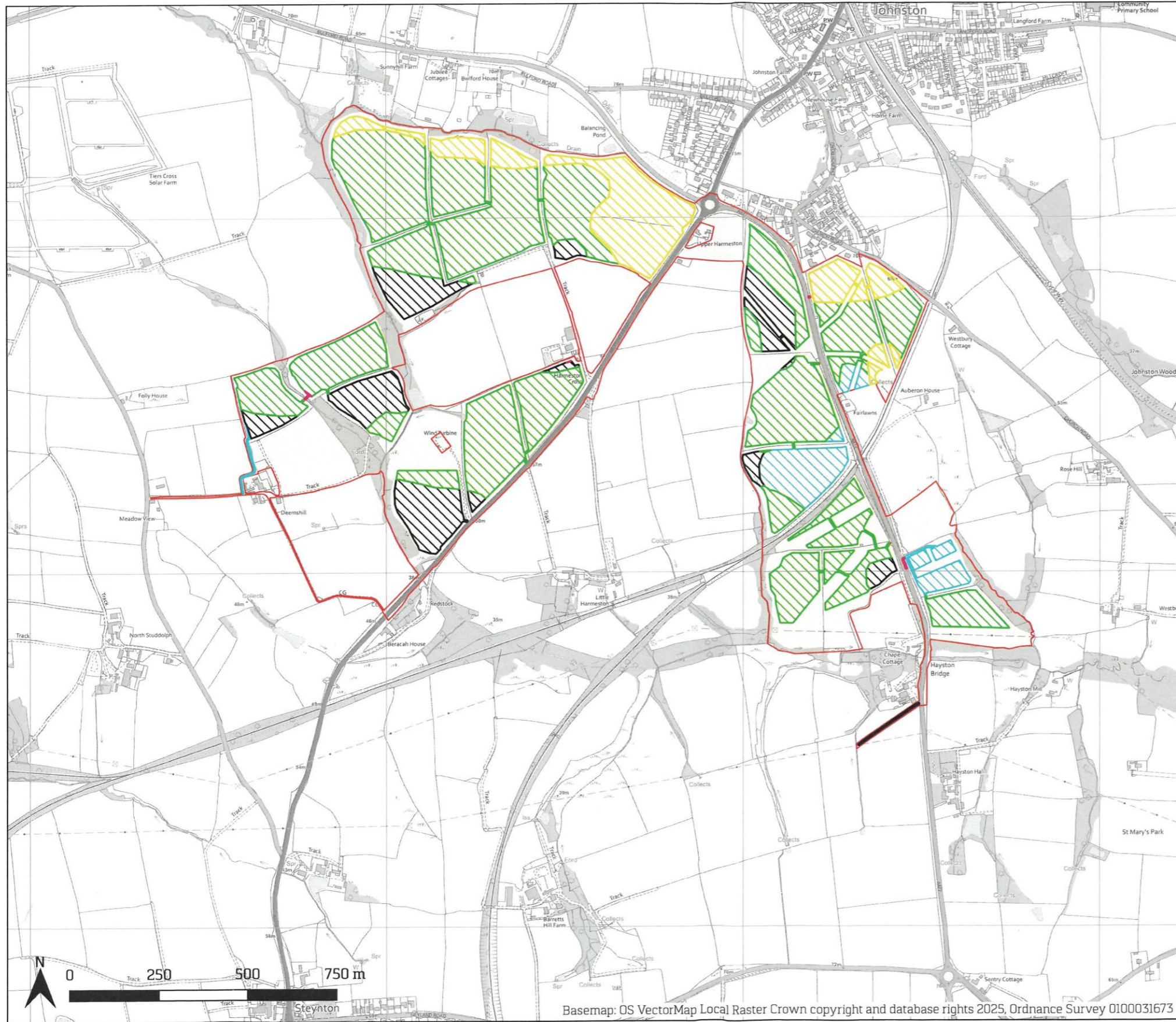


Created by & on: Yogi Murthi & 06/01/2026
 Version: 6

Basemap: OS VectorMap Local Raster Crown copyright and database rights 2025, Ordnance Survey 0100031673

APPENDIX KCC5
ALC Map of Panel Areas

FINAL DRAFT



Draft ALC Calculation -A3L (Overview)

Map Projection: EPSG:27700 Scale: 1:10000 @ A3
 Map Centre Coordinates : 192586 ,209169

Project: Great Harmeston Solar PV & BESS
Location: Land on west of Milford Road A4076 in Harmeston Cross, Land north east of Deemshill and Land in east and west of A477 Fairlawns

Legend

- Red Line Boundary (PLNG Scpng - 128.57 Ha)
- Grade 2 - 4.92 Ha
- Grade 3a - 10.93 Ha
- Grade 3b - 50.05 Ha
- Grade 4 - 10.55 Ha
- Non-Agr - 0.04 Ha

Notes:
 Redline Boundary for Planning 128.57 Ha is taken into account for estimating the ALC extent .
 Based in the above the total amount of BMV land is 15.9 Ha (4.92[G2] + 10.93[G3A]) and 12.3% of 128.57 Ha Redline Boundary or 13.4% of 117.85 Ha of ALC surveyed Area within Redline Boundary

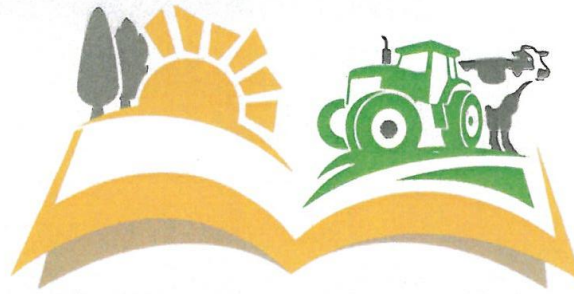


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 Version: 5a

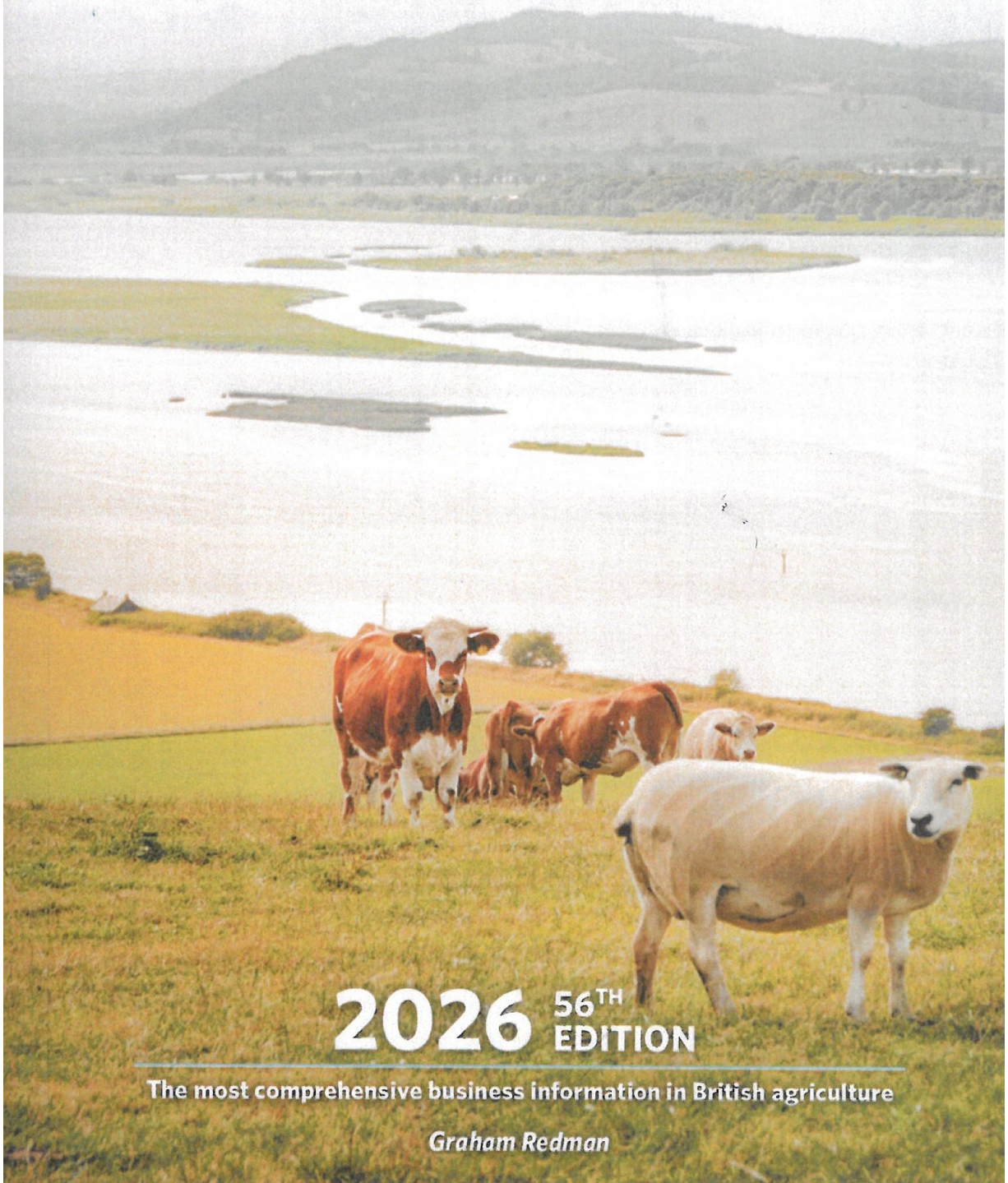
Basemap: OS VectorMap Local Raster Crown copyright and database rights 2025, Ordnance Survey 0100031673

APPENDIX KCC6
Extracts from the Nix Farm
Management Pocketbook

FINAL DRAFT



NIX FARM MANAGEMENT POCKETBOOK



2026 56TH
EDITION

The most comprehensive business information in British agriculture

Graham Redman

WHEAT

Feed Winter Wheat

Production level	Low	Average	High	
Yield: t/ha (t/ac)	7.0 (2.8)	8.2 (3.3)	9.4 (3.8)	
	£/ha (ac)	£/ha (ac)	£/ha (ac)	£/t
Grain at £185/t	1,295 (524)	1,517 (614)	1,739 (704)	
Straw in Swath	150 (61)	150 (61)	150 (61)	
Total Output	1,445 (585)	1,667 (675)	1,889 (765)	203
Variable Costs £/ha (£/ac):				
Seed.....		81 (33)		10
Fertiliser.....		297 (120)		36
Sprays.....		301 (122)		37
Total Variable Costs		679 (275)		83
Gross Margin £/ha (ac)	766 (310)	988 (400)	1,210 (490)	120

Fertiliser Basis 8.2t/ha				Seed:		Sprays £/ha:	
Nutrient	Kg/t	Kg/Ha	£/Ha	£/t C2	£510	Herbicides	£131
N	23	190	£187	Kg/Ha	175	Fungicides	£115
P	7.0	57	£60	% HSS	30%	Insecticides	£4
K	10.5	86	£49	£/t HSS	£353	PGRs	£19
						Other	£33

1. *Yields.* The average yield is for all winter feed wheat, i.e. all varieties and 1st and subsequent wheats. See over for First and Second Wheats. The whole wheat yield including feed and milling, winter and spring crops is 8.06t/ha (10-year average Defra). The table below offers a weighted estimate of yield variations according to wheat type based on a national 10-year average yield of 8.06t/ha. Percentages compare yield categories with 'all wheat'. These yields are used in the gross margins.

Calculation of spread of 'average yields depending on wheat type –

t/ha	Yield					
	Adjustment	Winter	1st WW	2nd WW	spring	Total
Total	100%	8.14	8.27	7.49		8.06
Feed	101%	8.22	8.35	7.57		8.14
Bread	93%	7.57	7.69	6.97	5.92	7.49
Biscuit	99%	8.06	8.19	7.42		7.98

2. *Straw* is sold in the swath. Assume half the baled value is swath value £70/tonne at 4.2t/Ha winter and 3.8t/ha spring wheat (rounded up).
3. *Seed* is costed with a single purpose dressing. Up to a third of growers require additional seed treatments, specifically to suppress BYDV. This can add £175/t of seed (£31/ha) or more. This has not been added in the gross margins.
4. This schedule does not account for severe *grass weed infestations* such as Black Grass or Sterile Brome. Costs associated with managing such problems can amount to up to £200/hectare additional agrochemical costs. Yield losses increase as infestation rises:

SHEEP

*Spring Lambing Flocks**Lowland Spring Lambing per Ewe (selling lambs off grass)*

Performance Level	Low	Average	High
£/Ewe	£	£	£
Lamb sales per ewe	148	180	211
Wool	1	1	1
Less Ewe and Ram Depreciation	17	17	17
Output	132	164	195
Variable Costs:			
Concentrate (Ewe and Lamb)	32	19	11
Vet & Med		15	
Miscellaneous		17	
Variable Costs (ex. forage)	64	52	44
Gross Margin £/Ewe, (ex. Forage)	69	112	152
Number of Ewes with lambs per Ha.	8	9	10
Forage Variable Costs £/Ewe	13	12	11
Gross Margin £/Ewe	55	100	141
Gross Margin £/Forage Ha (Acre)	444	904	1409
	(179)	(366)	(570)

Rearing Performance Data

<i>Lambing Stats</i>	Low	Average	High
Ewes in Lamb	92%	95%	97%
Lambing Percentage	160%	175%	190%
Lambs born per 100 ewes	147	166	184
Young Lamb Deaths	8%	6%	5%
Older Lamb Deaths	4.5%	4.0%	3.5%
Total Lamb Losses	13%	10%	9%
Lambs sold per 100 ewes put to ram	129	150	169
<i>Value of Lamb £/Lamb</i>	115	120	125
Finished Lamb Sales		65% @ £112.896	
Store Sales		10% @ £95	
Breeding Lamb Price		25% @ £150	

These performance figures are assumed for flocks of mature ewes, i.e. shearlings and older. Where ewe-lambs or mainly shearlings are included in flock performance adjustment needs to be made. The breed will have a large effect on performance data.

1. *Lamb Sales.* Prices for lambs sold for slaughter are for 2026. Average sale liveweight of 42kg, averaging £5.60/kg deadweight.



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