Green Hill Solar Farm
EN010170

Farming Report

Prepared by: Kernon Countryside

Date: May 2025

Document Reference: APP/GH7.27

APFP Regulation 5(2)(q)

FINAL DRAFT

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VOLUME 1: TEXT

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Authorised By APK 05/25

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1 INTRODUCTION

1.1 The Green Hill Solar Farm project is the proposed development of a solar farm across nine separate sites (the Scheme), connecting in via a cable network to a substation broadly central to the Scheme, at Grendon substation.

1.2 The development falls into the category of a Nationally Significant Infrastructure Project (NSIP), and is governed by the Planning Act 2008 and the National Policy Statements for Energy.

1.3 This Farming Report sets out an assessment of the likely effects of the proposed works on agricultural land, soils and farm businesses. It reviews the relevant planning policy and reviews relevant decisions from other NSIP and Planning Appeals to assist in determining the effects.

1.4 In particular this report considers:

(i) the relevant planning policy governing solar development (section 2);
(ii) the land quality identified across the site and the results in the wider context (section 3);
(iii) the construction process, and the likely effects, and the conclusions of similar developments nationwide (section 4);
(iv) an assessment of the effects on agricultural land (section 5);
(v) Land Loss and Land Use (section 6);
(vi) the potential effects on soils, temporarily or permanently (section 7);
(vii) the potential effects on farm businesses (section 8);
(viii) the wider economic and food production implications (section 9); and
(ix) ends with conclusions (section 10).

2 RELEVANT PLANNING POLICY AND GUIDANCE

National Policy Statements

2.1 The **Overarching National Policy Statement for Energy (EN-1)** (January 2024) Paragraph 5.11.4 notes that "*development of land will affect soil resources, including physical loss of and damage to soil resources, through land contamination and structural damage. Indirect impacts may also arise from the changes in the local water regime, organic matter content, soil biodiversity, and soil process*". Paragraph 5.11.12 notes that "*applicants should seek to minimise impacts on the best and most versatile agricultural land identified as land in Grades 1, 2 and 3a of the Agricultural Land Classification and preferably use land in areas of poorer quality (Grades 3b, 4 and 5)*".

2.2 The **National Policy Statement for Renewable Energy Infrastructure (EN-3)** (January 2024) sets out at 1.1.1 that **"***there is an urgent need for new electricity generating capacity to meet our energy objectives*". Paragraph 1.1.2 notes that "*electricity generation from renewable sources is an essential element of the transition to net zero and meeting our statutory targets*". The document then sets out the specific guidance for different technologies, with section 2.10 covering "Solar Photovoltaic Generation".

2.3 Paragraph 2.10.29 is set under the subtitle of "factors influencing site selection and design". It advises that while land type should not be a predominating factor in determining the suitability of the site's location, applicants should, where possible, use non-agricultural land. Where the use of agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land. 2.10.30 confirms that solar farm development is not prohibited on BMV land.

2.4 Other guidance in NPS EN-3 includes:

- 2.10.31 recognising that agricultural land may need to be used;
- 2.10.32 encouraging continued agricultural use and/or co-location with functions such as storage to maximise efficient land use;
- 2.10.68 recognises that solar panels can be decommissioned easily;
- 2.10.89 recognises the potential that solar farms have to increase biodiversity;
- 2.10.127 advises on minimising the effect on soil resources.

NPPF

2.5 The National Planning Policy Framework (NPPF) (December 2024) sets out at paragraph 187 (b) that the economic and other benefits of the best and most versatile agricultural land should be recognised. It does not set any prohibition on the use, or loss, of such land. Paragraph 187 and the related footnote 65 are set in the context of plan making. They are therefore aimed at local planning authorities and are not directly relevant for decision making. They require plans to allocate land with the least environmental effect, where consistent with other policies and Framework. Footnote 65 states that **"where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality"**.

Guidance

2.6 The threshold for consultation with Natural England is where there will be a loss of more than 20 ha of BMV agricultural land (as set out in Schedule 4, paragraph (y) of the Town and Country Planning (Development Management Procedure) (England) Order 2015) (DMP Order).

2.7 There is no definition of what is meant by "loss" in the DMP Order. The IEMA Guide "A New Perspective on Land and Soil in Environmental Impact Assessment" (February 2022) defines impacts for EIA purposes as "*permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading)* …" (Table 3, page 49). The IEMA Guide notes that this can include "*effects from temporary developments*", which is defined as follows: "*temporary developments can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils*".

2.8 The Planning Practice Guidance suite from 2015, in the section on "Renewable and Low-carbon energy", advises at 5-013-20150327 that factors a local planning authority will need to consider will include whether the proposed use of agricultural land has been shown to be necessary and poorer quality land has been used in preference, and the proposed use allows for continued agricultural use. The PPG cross-refers to a Written Ministerial Statement (WMS) of 25 March 2015. It is noted that this guidance is now ten years old and it is noted in the Clean Power 2030 Action Plan, at the bottom of page 56, that this will be updated in 2025.

WMS

2.9 The Secretary of State for Energy Security and Net Zero's WMS "Solar and Protecting our Food Security and Best and Most Versatile (BMV) Land"[1] notes in the first paragraph that food security is an essential part of national security and confirms the commitment to maintain the current level of food we produce. The second paragraph sets out concerns about energy security and prices and summarises the Government's position of racing ahead with the deployment of renewable energy, especially solar.

2.10 The WMS explains that "*even in the most ambitious scenarios [solar] would still occupy less than 1% of agricultural land*". The Minister had clearly considered the potential impact on agricultural land and land use of delivering the Government's objectives for renewable energy by solar. In that context, the second paragraph of the WMS confirms that the Government is racing ahead with deployment of renewable energy.

2.11 The WMS re-states the Government's position in respect of the use of BMV land. It does not amend the national policy, nor does it alter the weight to be given to the use of BMV land. Nor does it set out a food-producing policy.

Government Statement

2.12 On 18th July 2024 the Secretary of State made a Statement in the House of Commons under the title of "Clean Energy Superpower Mission". This reported, inter alia, that "*credible external estimates suggest that ground-mounted solar used just 0.1% of our land in 2022. The biggest threat to nature and food security and to our rural communities is not solar panels or onshore wind: it is the climate crisis, which threatens our best farmland, food production and the livelihoods of farmers*".

Food Security Report 2024

2.13 On 11th December 2024 the Government published the UK Food Security Report 2024. This analyses land use change. From the paragraph at the top of the third page the analysis is as follows:

> "*Looking ahead, based on current government policy framework for incentivising types of land use, it is expected that there will be increases in land use change from agricultural land to other uses. These uses include woodlands, grasslands, and restored peatland, as well as some being devoted to economic infrastructure like energy and housing. The impact this will have on food production will be affected by the kind of land being taken out of production. For instance, the impact is negligible if it is unproductive land which is taken. It is plausible that with continued growth in output*

[1] Issued 15th May 2024 by Claire Coutinho MP under the previous Government.

and conducive market conditions, that food production levels could be maintained or moderately increased alongside the land use change required to meet our Net Zero and Environment Act targets and commitments. However, analysis projecting decades into the future involves significant uncertainties. The government is due to publish a land use framework to guide land managers on the balance of opportunities and risks"**.**

2.14 A consultation preceding the Land Use Framework was published in late January 2025. The land use analysis from that document is reproduced in **Appendix KCC1**. The analysis shows that across the UK 85% of the Utilised Agricultural Area is used for animal feed or animal production (see page 12 of 36). The expectation is that 19% of England's total agricultural land may need to change use or management by 2050 (see page 15 of 36).

2.15 The Government is committed to conserving and managing 30% of the UK's land for biodiversity targets (see page 24 of 36). Overall, as set out at the top of page 16 of 36:

"*The Government is committed to maintaining food production. Our assessment is that, based on historical trends of productivity improvement, and supported by new and emerging innovations, the impact of these land use changes on domestic food production will be offset by productivity improvements. We expect that recent trends of increased productivity from agricultural land will continue. Working in partnership, Government will put in place a policy environment to support those changes*".

2.16 Page 27 of 36 notes that "*we need to build new homes and clean energy, water infrastructure and transport infrastructure at scale and at pace*".

3 AGRICULTURAL LAND QUALITY

3.1 This section considers:

(i) the land classification system;

(ii) land quality in context, from published information; and

(iii) the results of field surveys.

The Land Quality System

3.2 Agricultural land is measured under a system of Agricultural Land Classification (ALC). This grades land based on the long-term physical limitations of land for agricultural use, including climate (temperature, rainfall, aspect, exposure and frost risk), site (gradient, micro-relief and flood risk) and soil (texture, structure, depth and stoniness) criteria, and the interactions between these factors determining soil wetness, droughtiness and utility. The system is described in Natural England's Technical Information Note TIN049 (2012) (**Appendix KCC2**). The full description of each of the grades, from the MAFF ALC Methodology (1988), is reproduced in **Appendix KCC3**.

3.3 Land is divided into five grades, 1 to 5. Grade 3 is divided into two subgrades. Land falling into ALC Grades 1, 2 and Subgrade 3a is the **"***best and most versatile***"** (BMV) (as defined in the NPS EN-1 at 5.11.12 and in the National Planning Policy Framework (2024), Annex 2). Natural England estimate that 42% of agricultural land in England is of BMV quality (see TIN049).

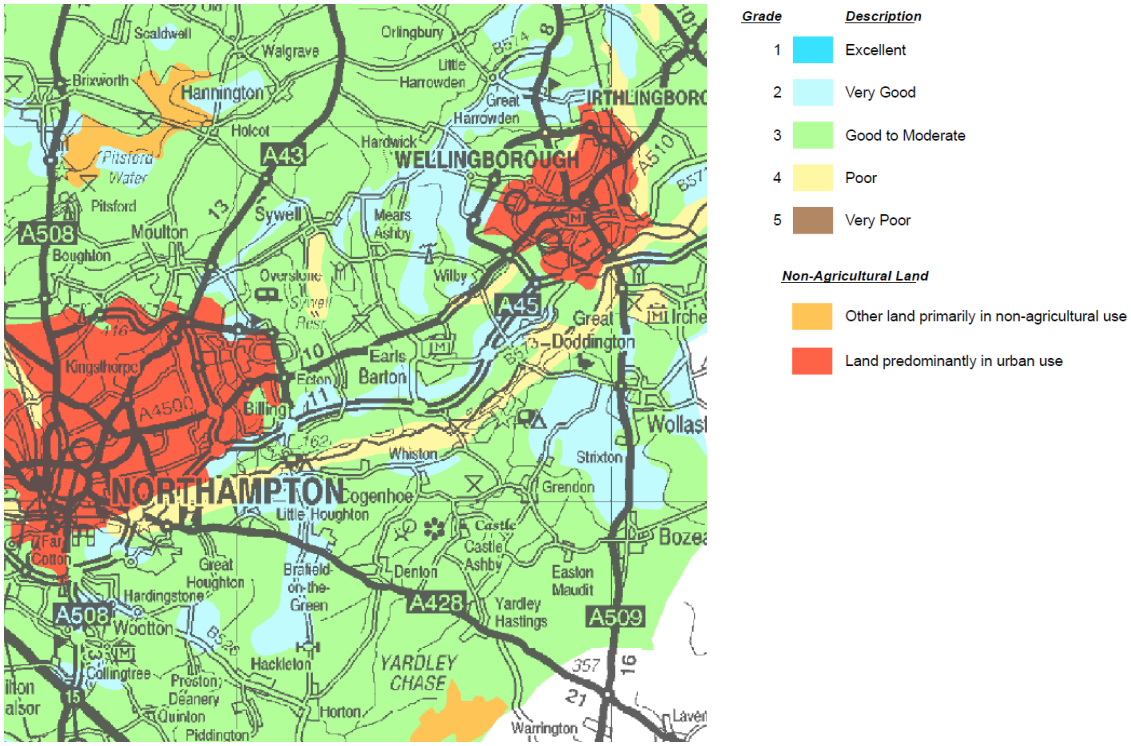
Published Information

3.4 Between 1967 and 1974 the Ministry of Agriculture, Fisheries and Food (MAFF) published provisional ALC maps, at a scale of 1 inch to 1 mile. These maps were published before Grade 3 was divided into subgrades, and before the ALC methodology was amended in 1988. The original maps are no longer available, but the information is still published at a scale of 1:250,000 and has since been digitised.

3.5 As set out in TIN049, these maps are for strategic purposes only. They are not for use in assessment of individual fields.

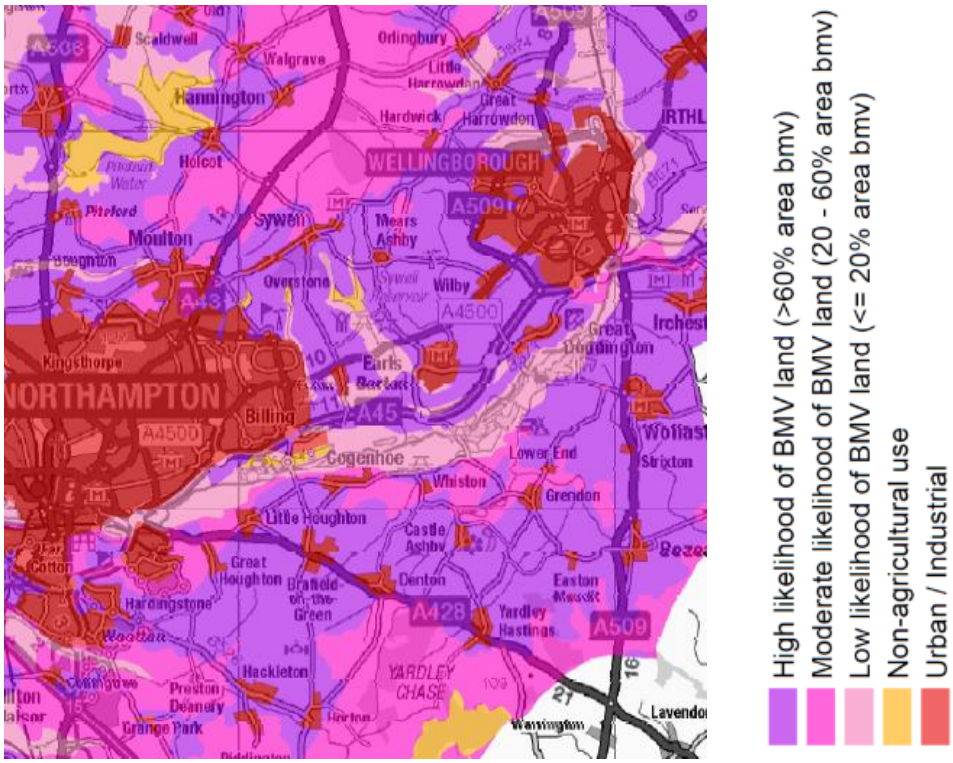
3.6 The following extract identifies that the wider area is shown mostly as Grade 3 with areas of Grade 2 and some Grade 4.

Insert 1: Extract from the Provisional ALC



3.7 In 2017 Natural England produced 1:250,000 maps showing the Likelihood of BMV. These divided England into three categories, based on an estimated percentage of land expected to be of BMV quality. These identify that the majority of the area is expected to be of moderate (20 – 60% BMV) or high (>60% BMV) likelihood.

Insert 2: Extract from the Likelihood of BMV Map



3.8 Based on the published provisional ALC maps, Northamptonshire County ALC results are shown below compared to the figures for England.

Table 1: Provisional ALC Statistics

ALC Grade	England		Northamptonshire	
	Areas (ha)	Proportion (%)	Areas (ha)	Proportion (%)
Grade 1	354,562	3.1	0	0
Grade 2	1,848,874	16.2	19,992	9.1
Grade 3	6,290,210	55.0	192,891	87.4
Grade 4	1,839,581	16.1	7,755	3.5
Grade 5	1,100,305	9.6	0	0
Total	11,433,532	100.0	220,638	100.0

3.9 In TIN049 Natural England estimate that, under the 1988 methodology, approximately 21% of England is Grades 1 and 2, and 21% is Subgrade 3a. There are large areas of England where land quality is poorer and this will mean that in those parts of the country where there are no significant climatic or site (eg slope) limitations, the percentage of BMV is expected to be much higher.

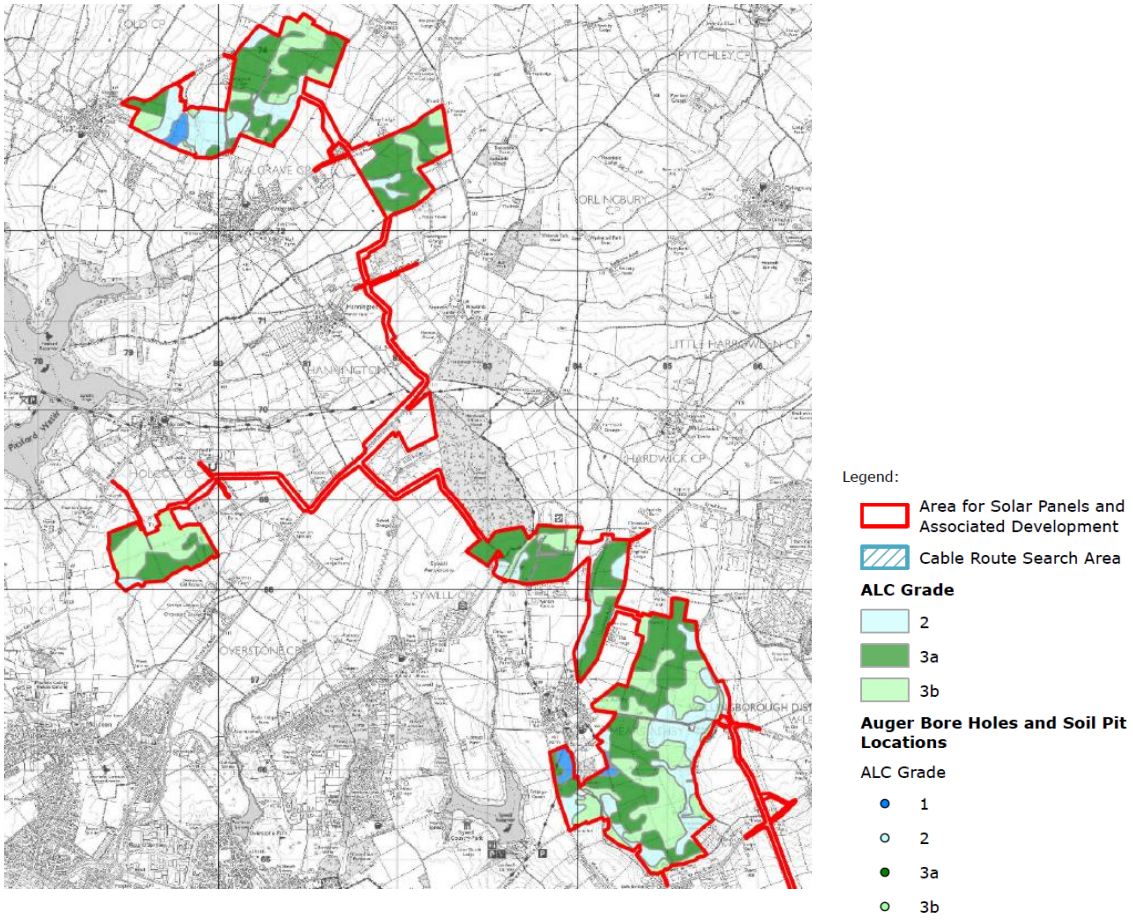
3.10 As shown on the Likelihood of BMV maps, this is one such area.

ALC Survey Results

3.11 An ALC survey has been undertaken by Arcadis. They have surveyed 1,404 hectares (ha) of land. The survey has been carried out at a detailed level of one auger sample per hectare, on a regular 100m grid to avoid any surveyor bias.

3.12 The results are set out on the plans reproduced in **Appendix KCC4**. They are also shown on the excerpts from the composite ALC plan, as below.

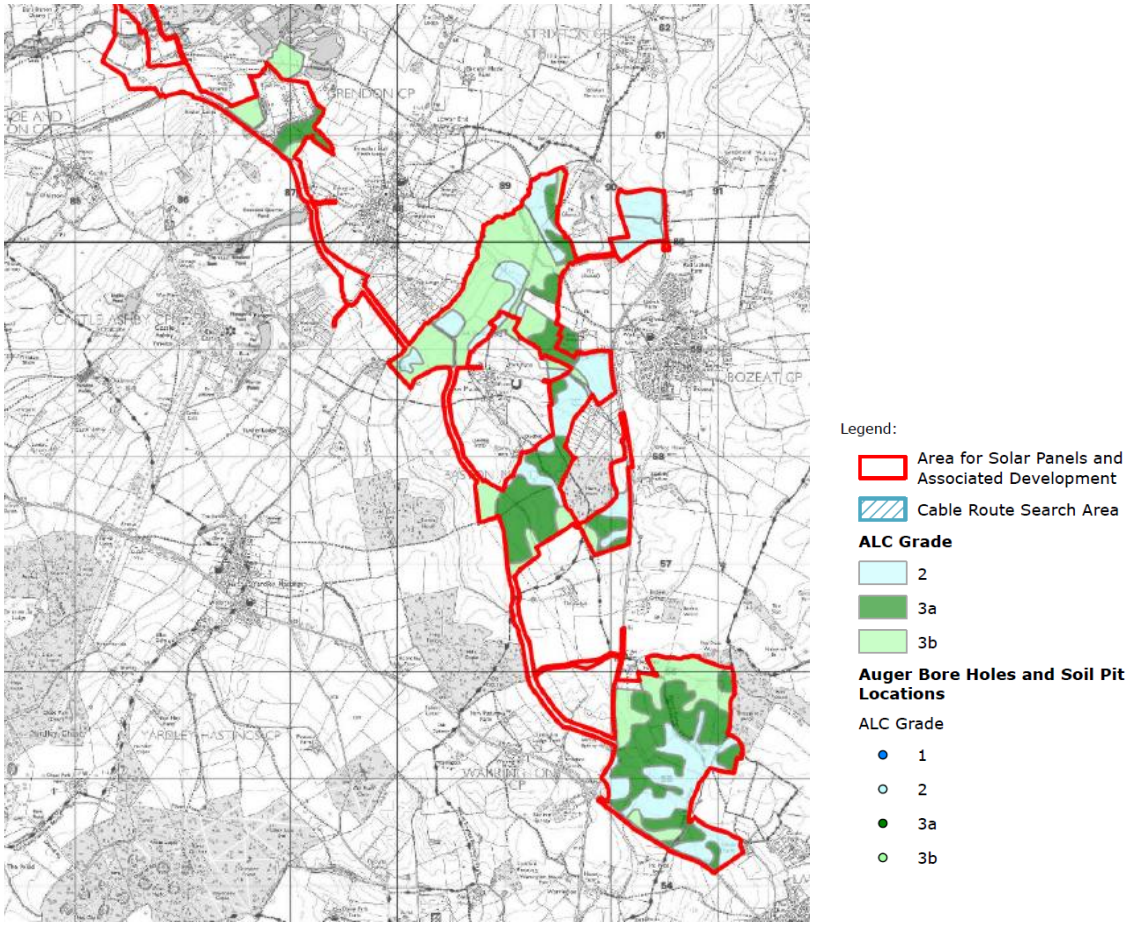
Insert 3: ALC Results for the Northern Part of the Site



3.13 The northern parcels have been classified as a mixture of Grades 2, 3a and 3b, with generally a fairly complex pattern.

3.14 A similarly-complex pattern has been identified for the southern part of the Site, shown on Insert 4.

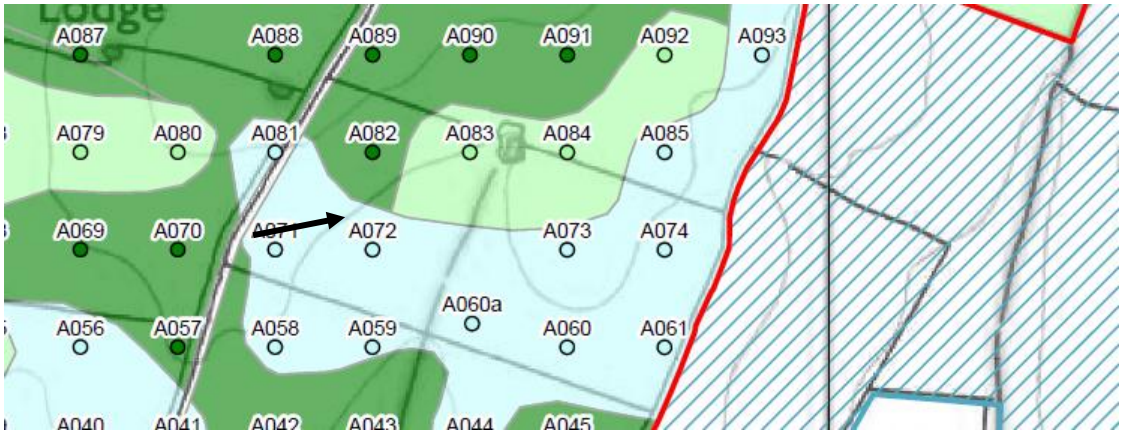
Insert 4: ALC Results for the Southern Part of the Site



3.15 These patterns are often indistinguishable on the ground. For example, the following photograph looks eastwards across a field containing ALC Grades 2, 3a and 3b, as shown on the Insert.

Photo 1: Looking Eastwards (part of Green Hill A)

Insert 5: Location of Photo (part of Site A)



3.16 The overall ALC results for the areas surveyed are provided in Table 2.

Table 2: ALC Results

Grade	Description	Area (ha)	Proportion (%)
1	Excellent	14	1.2
2	Very good	294	25.4
3a	Good	469	40.5
3b	Moderate	382	32.9
4	Poor	0	0
5	Very poor	0	0
Total		**1,159**	**100.0**

3.17 The results have identified that 67% of the area surveyed for ALC, which is the PV Sites but excluding the Cable Route Corridor (CRC), is of BMV quality.

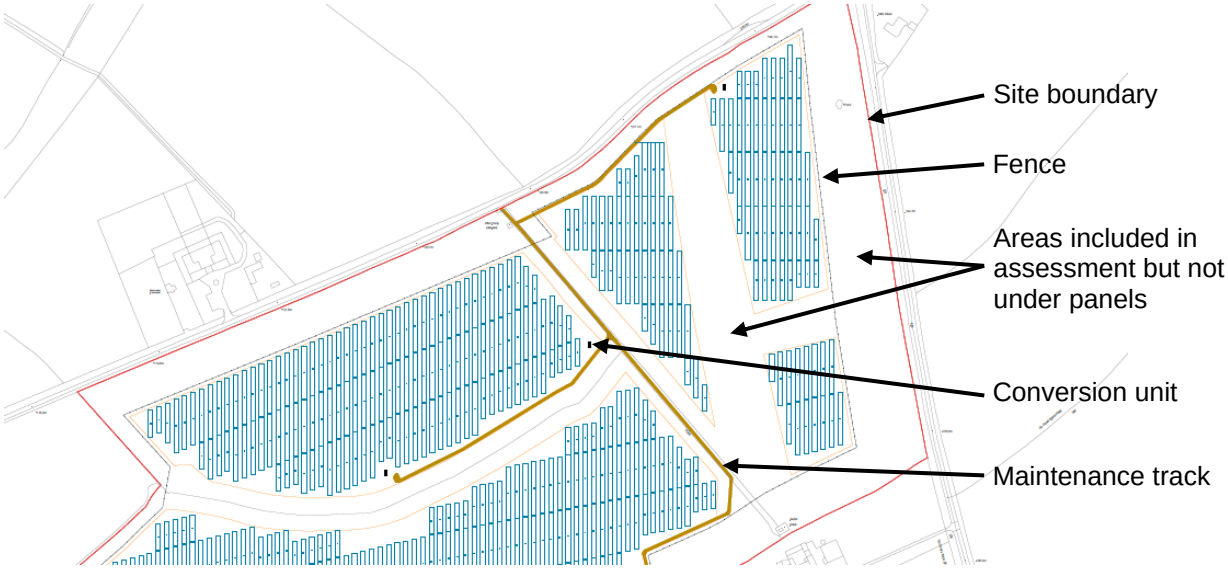
4 THE CONSTRUCTION PROCESS AND EFFECTS

4.1 This section focuses on the proposals as they may affect agricultural land, focusing on the physical effects of construction.

The Site Layout

4.2 The site layout will differ from site to site. To provide an illustrative example of how the Solar PV Arrays part of a site is likely to be laid out, an excerpt from the illustrative layout of Green Hill A.2 is shown below and labelled, explaining some of the features and factors assessed in this section and section 5.

Insert 6: Excerpt from Green Hill A2



Stages of Construction

4.3 This report now describes the construction process, with the installation of the solar PV arrays considered first, then the fixed infrastructure including tracks, battery containers and the construction compounds. Photographs are used to illustrate the stages, but it should be remembered that the panel designs and machinery used/construction techniques may vary from those in the photographs.

Solar PV Arrays

4.4 The solar PV arrays are typically installed in five key stages. Trenching works may be undertaken before step (iv) depending on the contractor's preferred way of working:

(i) marking out;
(ii) piling-in of legs;
(iii) bolting together of frames;
(iv) bolting-on of panels; and
(v) cabling and trenching.

4.5 Marking-out is done on foot and is not damaging to soils, as shown below. Small pegs are inserted to identify the position for the legs.

Photo 2: Marking Out in Progress

4.6 The installation of the legs and the framework and panels is carried out rapidly. The process involves laying out the steel stanchions on the ground in the locations marked. This stage is non-intrusive. It does involve machinery transporting the legs, however, and should ideally take place when soils are suitably dry. Typically, a tractor and farm trailers are used to transport the legs to the fields, then each leg is lifted off by hand.

4.7 A team then arrives to knock the stanchions/legs in. This uses a lightweight machine to pneumatically knock the pole into the ground. This operation is shown illustratively on the photograph below. This was inserting legs into a clay soil. The Proposed Development is for both fixed and tracker systems secured on taller stanchions/legs than those in the photograph below, but similar machinery is likely to be used.

Photo 3: Legs Being Installed

4.8 The design varies between sites, but the limited impact of installing legs on the underlying land is illustrated below, where the lack of soil disturbance or vehicle damage on dry soils is clear. The legs in the photograph are smaller, but the photograph shows the lack of disturbance at the point the legs go into the ground, which will not change between taller or

shorter legs. In some parts of the Site, concrete feet may be required, which would cause no soil disturbance.

Photo 4: Legs Being Installed (this is at Tiln Farm, Retford, in January 2023)

4.9 It is necessary to connect electric cables between the panels and to run the cables back to the substation. This involves trenches, dug with a machine. Immediately after digging these works look disruptive to the soil. As they are excavated the topsoil and subsoil are separated, as shown below.

Photo 5: Trenching in Progress

4.10 The installation of cables is one of the few operations relating to the Solar PV Arrays that involves digging whereby the soil structure could potentially be affected. The trenches within the site are usually narrow, but soil does have to be dug up to install the cable. In the UK, utility operators have been burying services (water, oil, gas, telecoms) for many years. In areas where there is a clear subsoil and topsoil distinction, the topsoil should be placed on one side of the trench, and the subsoil on the other. Then once the cable has been laid the subsoil can be added back first, then the topsoil second, to reinstate the soil structure to its original order and state. There are field drains under agricultural fields across the

country that have been installed in a similar manner, and which have not affected the ALC grade.

4.11 The process will be governed by the guidance in the outline SMP, including mitigation works. Overall the panel installation and cable connections will not result in adverse effects on soils or agricultural land quality.

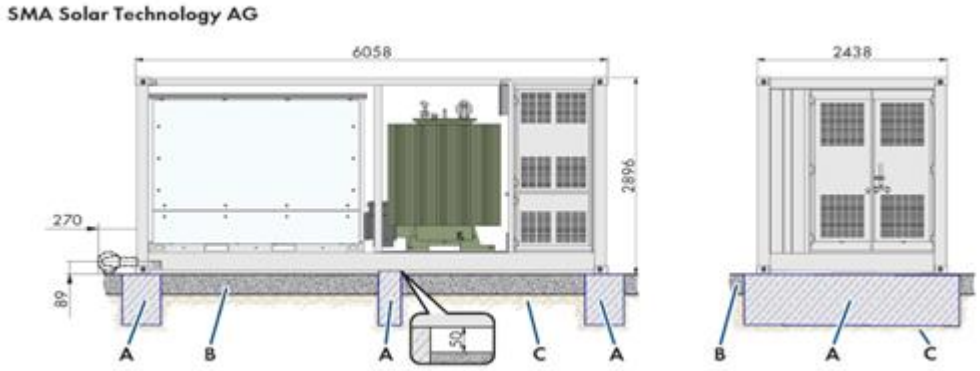
Infrastructure and Fixed Equipment

4.12 The internal tracks are expected to involve only shallow excavation. An example, from a solar farm close to the Site, is shown below, together with an example from Sussex.

Photos 6 and 7: Examples of Access Tracks

4.13 Conversion units and inverters will be required. These would involve shallow concrete pads or would sit atop the soil. The design of a typical inverter unit is shown below.

Insert 7: Typical Inverter Unit



Fencing and Cameras

4.14 Fencing proposed is mostly typical deer fencing, as shown below, together with a camera pole.

Photo 8: Typical Fencing and CCTV Pole

Temporary Construction Compounds

4.15 Construction compounds are temporary works, and will be restored towards the end of construction and the area then returned to farmland or used for panels. A typical construction compound is shown below.

4.16 This can be fully restored. An example of a newly-constructed construction compound, showing the temporary soil storage, is shown below.

Photo 9: Example of Newly Built Construction Compound

4.17 These stone and matting areas are removed, the ground loosened, and the topsoil replaced on decommissioning of the construction compound towards the end of the construction phase.

5 ASSESSMENT OF THE EFFECTS ON AGRICULTURAL LAND

5.1 This section of the report considers:

(i) the effects of construction and the areas involved;

(ii) the effects of operation; and

(iii) the effects of decommissioning.

Construction Effects

5.2 The insertion of metal legs will not affect the soil structure and it will not affect agricultural land quality as graded under the ALC. Therefore, for the majority of the site area, there is no potential for an adverse effect on the ALC resource, irrespective of ALC grade.

5.3 There is the potential for localised damage to soil structure from machinery, if this is used on the land when soils are wet. The risk of damage is not dissimilar to the damage if farmers were to cross the land in tractors when wet, and can normally be rectified easily with minor cultivation (eg harrowing). However, such short-term damage can be avoided by following good practice. Damage from normal farming machinery might affect soil structure but it will not affect ALC grading. An example is shown below.

Photo 10: Example of Field Ruts

5.4 By adherence to a good Soil Management Plan, there will be no significant problems. An outline SMP is submitted with the DCO application. Early installation of the tracks is the single biggest way to reduce the risk of soil damage, as this provides a hard base for the multi-trip haul routes around the site.

5.5 If there is any localised problem, the type of machinery involved in restoration is shown below. This shows farming and horticultural versions.

Inserts 8 - 11: Type of Machinery Involved

5.6 If there are any areas where there has been localised damage to the soils due to vehicle passage, for example, a low wet area within a field which despite best efforts could not be avoided, this should be made good and reseeded at the end of the installation stage. This is not uncommon: most farmers will have times when they have to travel around the farm in a tractor in conditions where the tyres make deep impacts. This can happen during harvest time, for example, especially of late crops or in very wet harvest seasons. Whilst this is avoided so far as possible, it occurs and the effects are made good when conditions are suitable.

5.7 The ground surface should be generally levelled prior to any seeding or reseeding.

5.8 Examples of areas that have been cultivated following the installation of panels, are shown below. These are the main vehicle trafficking routes. As can be seen, the area under and mostly between the panels, is not damaged.

Photos 11 and 12: Localised Repairs

5.9 The principal part of the installation and decommissioning phases where soil is physically disturbed is for the trenching operations. Installing water pipes, field drains etc is an established farming practice and can be done without affecting agricultural use or land grade. By following good practice and putting soils back in the same profile order as they were at the start, there will be no loss of land and no effect on the ALC grade.

5.10 Even if (and this will not happen if good practice is followed) the trenching was done poorly and the soil profile was altered, the extent of the damage would be over a width of about 0.3m. ALC surveys record one sample point every 100m, so a thin strip of disturbed soils would not be recorded and would not alter the ALC grade of the wider field.

5.11 All parts of the Scheme will be decommissioned. Some areas are disturbed in construction and will not be restored until decommissioning. These areas are the earthworks for the fixed infrastructure, and amount to about 21.2 ha. This is an approximation broken down as shown in Table 3.

5.12 This is estimated as follows, including the land affected by tracks, inverters and the substation. The area, by ALC grade, is shown below.

Table 3: Area in ha Used for Tracks, Inverters and Substations

ALC Grade	Area in ha (rounded nearest 0.1ha)	
	Tracks and Inverters/Containers and Conversion Units	**Substations and BESS**
1	<0.1	0
2	2.7	0.8
3a	4.3	3.5
3b	3.5	9.0
Total	**10.5**	**13.3**

5.13 The BMV land affected by infrastructure is for the tracks principally. Tracks around fields are common, and do not generally limit the use of the wider field for farming operations. Consequently, whilst the tracks will be removed and restored on decommissioning, the installation of tracks on farms is not limiting on the wider land, and in many cases is permitted development for land in agricultural use, subject to prior approval as to siting. This is not, in practical terms, a significant impact or loss.

Impact of Operational Phase

5.14 The use of the land under and around the panels will be for grassland. The use of permanent grassland for grazing or mechanically managed will not affect ALC grade.

5.15 As set out on page 2 of TIN049 (**Appendix KCC2**) "**the current agricultural use, or intensity of use, does not affect ALC grade**".

Decommissioning

5.16 Given the length of time before decommissioning it is likely that the 1988 ALC methodology will have been amended by then. Climate change may have altered the seasons and rainfall patterns. Prior to decommissioning the works required will need to be reviewed.

5.17 The objective is to remove panels and restore all fixed infrastructure areas to return the land to the same ALC grade and condition as it was when the construction phase commenced. A qualified soil scientist should advise prior to decommissioning time. The effects of climate change in 60 years' time may mean that a methodology, applicable in 2025, is no longer applicable and needs to be revised.

5.18 Once the panels have been unbolted and removed, the framework will then be a series of legs, as shown below.

Photos 13 and 14: The Framework

5.19 These will be removed by low-ground pressure machines, in a reverse operation to the installation. These machines will provide a pneumatic tug-tug-tug vertically upwards. This will break the seal between soil and leg, and once that surface tension is released the leg will come out easily.

5.20 The legs will be loaded onto trailers and removed. Where concrete feet have been used, these will be removed from the Site. Any light compaction will be loosened.

5.21 There will be no significant damage to the soils, and no significant compaction.

5.22 Where cables need to be removed, this is likely to need a trench to be dug. This will be done mostly with either a mini digger or a trenching machine. The topsoil and subsoil will be removed and stored in separate piles, and replaced in reverse order.

5.23 Once the trench has been backfilled it can be left for cultivation with the rest of the field post removal of panels.

5.24 Switchgear, transformers and conversion units will need to be removed.

5.25 Low ground pressure vehicles, and cranes, will be needed to lift the decommissioned units onto trailers, and removed from the Sites.

5.26 Any concrete bases will need to be broken up. This will most likely involve breaking with a pneumatic drill to crack the concrete, after which it can be dug up and loaded onto trailers and removed.

5.27 The ground beneath the base may then benefit from being subsoiled, to break any compaction. This can be done by standard tractor-mounted equipment, such as the following examples. Compaction will not have occurred at a depth that will have affected land quality. The works described are typical agricultural activities.

Inserts 12 and 13: Example of Tractor Mounted Equipment

5.28 The tracks will be the last fixed infrastructure removed. The tracks will have been used for vehicle travel during the decommissioning stage. The tracks will also be used for removal of material from the tracks themselves, which will be removed from the furthest point first.

5.29 The stone will be removed and any matting removed. The base will then be loosened by subsoiler or deep tine cultivators, depending on specific advice given by the soil expert at the time following and analysis of soil compaction and condition.

5.30 Topsoil from the storage bunds will then be returned and spread to the depth removed (typically 10-15cm). The area will then be cultivated, probably in combination with the whole of each field.

5.31 Fences and gates will be removed in suitable conditions, after the panels have been removed. This will involve a tractor and trailer. The CCTV cabling is shallow buried and will probably pull out without the need for trenching, but if required trenches will be dug, as described above, and replaced in order once the cables have been removed.

5.32 The fields will then be handed back to the farmers.

6 LAND LOSS AND LAND USE CONSIDERATIONS

Land Loss Considerations

6.1 The common opinion following analysis is that the installation of a solar farm does not result in land loss. The land under and around the panels is not affected by sealing or by downgrading. Agricultural use can continue and the panels can be removed leaving the current ALC grade unchanged.

6.2 The process of installing the solar PV arrays is not generally disturbing to land, as described in section 5. The legs make little impact and do not involve any movement of soil. They do not alter land quality.

6.3 The installing of legs is not dissimilar to the installation of frameworks for numerous farming activities, such as polytunnels, hops, orchards and vineyards, as the examples below show.

Photos 15 - 18: Other Agricultural Activities

6.4 Only in the areas where there is removal of soil, to create bases for the tracks and inverters, is there the potential for agricultural land quality to be affected. These areas are limited to 21.2 ha of land, as detailed below.

Table 4: Area Disturbed by ALC Grade

ALC Grade	Area in ha (rounded nearest 0.1ha)	
	Tracks and Inverters/Containers and Conversion Units	**Substations and BESS**
1	<0.1	0
2	2.7	0.8
3a	4.3	3.5
3b	3.5	9.0
Total	**10.5**	**13.3**

6.5 These areas are all capable of restoration to comparable grade at the decommissioning phase. Their "loss", therefore, is temporary and for the duration of the operational phase only. It is not a permanent loss. It is also only a small area.

Decisions on Land Loss

6.6 There is widespread recognition that across the great majority of the solar farm site land is not "lost" in these circumstances, as per the following recent planning decisions, selected from a wide choice of appeals relating to planning applications under the Town and Country Planning Act 2008:

(i) in the planning appeal decision on 27th June 2023 for land south of the Leeming Bar substation, the Inspector considered whether or not land was Grade 2 or Subgrade 3b. In her decision (APP/G2713/W/23/3315877) the inspector noted that agricultural use could continue during the operational phase (para 20). She concluded in paragraph 25 as follows:

"*As such, the proposal would not result in either the temporary or permanent loss of BMV land as the land would continue to be used for some agricultural purposes whilst also being used to produce solar energy. Nor would the proposal be detrimental to the soil quality, so a return to arable production at a later date would still be possible*";

(ii) in the decision on land west of Thaxted of 18th December 2023 (APP/C1570/W/23/3319421), which involved 55 ha of BMV, the Inspector was clear that the land would not be adversely affected except for areas of tracks and fixed infrastructure, and any woodland planting that is not removed at decommissioning. The Inspector noted in paragraph 112:

"*Accordingly, I am satisfied that the agricultural land quality of the majority of the BMV on the site would not be harmed and the loss of production from the site would*

not cause notable harm to food security. Any permanent loss of BMV would be small and not significant";

(iii) in the decision for a 47MW solar farm at Little Cheveney Farm, Marden, dated 5th February 2024 (APP/U2235/W/23/3321094), a site containing 47% BMV, the Inspector noted the preference to use poorer quality land (paragraph 46), and that the land would not be lost but would retain some grazing use (paragraph 50). He noted the benefits for soil and concluded that the temporary loss of some BMV was of limited weight (paragraph 51);

(iv) in the decision at Kemberton, Telford, dated 22nd February 2024 (APP/L3245/W/23/3329815), the Inspector noted that the piling "*would cause minimal disturbance to the soil and the quality of the land*" (which in that case was 29% Subgrade 3a) (paragraph 52). Overall he was satisfied that there would be no temporary or permanent loss of BMV (paragraph 54) and overall there was no conflict with the development plan or Framework (paragraph 60);

(v) in the decision at Great Wymondley, dated 11th March 2024 (APP/X1925/V/23/3323321), the Secretary of State agreed with his Inspector on a site of 85 ha of wholly BMV quality (Grades 2 and 3a) that BMV land would not be adversely affected (IR 12.57) and could be farmed, and that there was no policy to require land to be farmed in a particular way (IR 12.57);

(vi) in the decision at Penhale Moor, dated 18th July 2024 (APP/D0840/W/23/3334658). the Inspector concluded in paragraph 30 that "*the proposal would not lead to either the temporary or permanent loss of agricultural land*";

(vii) in the decision at Burcot Farm, dated 4th March 2025 (APP/Q3115/A/24/3350890), a site that is wholly BMV, the Inspector concluded in paragraph 32 that "*overall the proposal would not result in either the temporary or permanent loss of BMV land for agriculture*".

Land Use Considerations

6.7 Having concluded that the land will not be lost, and that agricultural land will not be downgraded, this report now considers the extent to which policy prevents the use of BMV land for solar farm installations. If the resource is not lost, then the assessment becomes a land use consideration instead.

6.8 Policy has long set out a preference for using poorer quality land to that of a higher quality That is not, however, a bar to the use of BMV land. Further, as explained above, in the

case of solar farms the BMV land is not lost. In reality this is a land-use decision rather than a decision about the protection of the BMV asset.

6.9 BMV land is common across much of lowland England. This is reviewed in detail in section 9.

6.10 Planning policy in NPS EN-3 does not preclude the use of BMV. Policy requires planning policies and decisions to "recognise" the economic and other benefits of BMV land. It does not prohibit its loss, and far less dictates its active agricultural use.

Decisions on Land Use

6.11 Four recent NSIP projects have reviewed the effects on agricultural land and the implications. Four recent decisions in the East Midlands/Eastern England area have concluded as follows:

(i) EN010127 Mallard Pass Solar Farm. There are 360 ha of BMV within the Order Limits. In the Secretary of State's decision letter of 12th July 2024 he reviewed (in isolation and in combination) the impacts on food production (sections 4.87 to 4.103). In 4.100 he concludes as follows:

"*The Secretary of State also notes that the Applicant considered the possible effects of other solar projects across Lincolnshire and Rutland and estimated that the projects, including the Proposed Development, include approximately 2,114ha of BMV land which would represent around 0.5% of the BMV land across Lincolnshire and Rutland. The Secretary of State agrees with the ExA that the impact of the Proposed Development in relation to food production in the national context is negligible*".

(ii) EN010133 Cottam Solar Project. The quantum of BMV in this project was modest, but the decision is relevant because of the analysis of the impact of food production. In the Secretary of State's decision of 5th September 2024 he concluded that the loss of arable production from the 1,160 ha site is a negative impact but "*should be classed as "little negative weight" rather than "significant negative weight" in recognition of the point that, whilst the use of arable farmland exceeds NPPF guidance, it is in line with the 2024 NPS*";

(iii) EN010123 Heckington Fen Solar Park. This site was approved by the Secretary of State, in line with the recommendation, on 24th January 2025. The site includes 257 ha of BMV, just under half the site. The Secretary of State's key conclusion on food related matters is at 4.51 where he concludes that "*In agreement with the ExA, the Secretary of State considers that the above factors mean that the Proposed Development will cause only minor adverse effects to land use and soil. The Secretary of State ascribes land use and soils a little negative weight in the planning balance*";

(iv) EN010132 West Burton Energy Park, consented on 24th January 2025. The Secretary of State recorded the ExA's conclusion that the removal of a large area of agricultural land from arable food production was contrary to the provisions of footnote 62 of the NPPF. [It is noted that the food considerations in footnote 62 were removed when the NPPF was revised in December 2024.] In paragraph 4.268 the "*Secretary of State considers the fixed-term, reversible loss of land for food production is a negative impact of the Proposed Development, but the impact is small when considered against the total agricultural land available for food production in Lincolnshire*". Overall, as per paragraph 4.273, "*the Secretary of State agrees with the ExA and ascribes little negative weight to soils and agriculture in the planning balance*".

Conclusion

6.12 Policy requires that the use of BMV land be recognised and justified. Planning decisions have generally concluded that, except for generally small areas such as the fixed infrastructure in this Proposed Development, the land quality is not affected.

6.13 By adherence to good practices and a Soil Management Plan, those areas affected for fixed infrastructure should also be capable of restoration back to the land quality that existed before construction commenced.

7 SOIL CONSIDERATIONS

7.1 Soil is an important resource, and the installation of a solar farm needs to take account of the underlying resource. As described in section 4, the land and soil is not generally disturbed by the installation process.

The Soil Resource

7.2 The soil is described in the ALC report. The land use is mostly arable. The benefits from conversion from arable to grassland are widely recognised.

Effects on Soils

7.3 The benefits to soils from being rested from continual arable use are many.

7.4 The land will be in grassland, and it is expected to be managed by grazing of sheep or mechanically. This is common practice, and entirely feasible.

7.5 What we know about soils in the UK is that continual arable production, as is practised on the Site, is generally not good for soils, and that conversion to grassland is generally good for soils and the biological functions they support. Conversion of arable land to grassland receives funding under the Countryside Stewardship Scheme and under the replacement Sustainable Farming Incentive.

7.6 Some of the known harms and benefits are summarised below:

(i) soil is an important natural capital resource, but our understanding of soils is hindered by a lack of data. In the Environment Agency's "Summary of the State of the Environment: Soil" report of January 2023[2], they note that UK soils currently store about 10 billion tonnes of carbon, equal to 80 years of annual greenhouse gas emissions.

(ii) the report notes that soil biodiversity and the many biological processes and soil functions that it supports "*are thought to be under threat*". The statistics are stark:

- almost 4 million hectares of soil are at risk of compaction;
- over 2 million hectares of soil are at risk of erosion;
- intensive agriculture has caused arable soils to lose about 40 to 60% of their organic carbon.

[2] Research and analysis: Summary of the state of the environment: soils, Environment Agency (26 January 2023)

(iii) the state of soil biology is poorly researched, but the report identifies that intensive agriculture reduces soil biodiversity. A recent study identified 42% of fields may be overworked, as evidenced by an absence or rarity of earthworms. It is noted that "*tillage had a negative impact on earthworm populations, and organic matter management did not mitigate tillage impacts*" (page 11).

(iv) the UK Food Security Report 2021 also notes that, whilst grain is generally the most efficient form of production in terms of calories per hectare, it has a significant environmental impact "*due to the lack of biodiversity in conventional grain fields, damage to soil through ploughing, environmental harms caused by fertilisers and pesticides, and the oil use embedded in fertilisers and field operations*".

(v) the Environment Agency "State of the Environment: soil" report notes that bare soils, reduced hedgerows and increased field sizes mean that, in England and Wales, an estimated 2.9 million tonnes of topsoil is lost to erosion every year. Erosion regularly exceeds the rate of formation of new soils (which is at about 1 tonne per hectare per year) on many soils, with 40% of arable soils at risk, especially lighter soils on hillslopes and peats in upland areas. "*Significant decreases in erosion risk occurred when fields changed from winter cereal use to permanent grassland*", the EA reported. Management practices in arable land can make a big difference, but the constant vegetation cover of grassland reduces erosion significantly.

(vi) organic matter in soil acts like a sponge and can hold up to 20 times its weight in water. Most arable soils have lost 40 to 60% of their organic carbon[3]. The British Society of Soil Science record (Science Note: Soil Carbon, BSSS (2021)) the declining state of soil carbon (soil organic carbon and soil inorganic carbon) and note that the greatest and most rapid soil carbon gains can be achieved through land use change, eg converting arable land to grassland. Sustainable soil management practices are needed for all soils.

(vii) the role of soil organic carbon in soils is complex, as described in the British Society of Soil Science Note "Soil Carbon" (2021). As described under the heading "Soil Carbon Functions" on page 4, "*a soil with a greater SOC content has a more stable structure, is less prone to runoff and erosion, has greater water infiltration and retention, increased biological activity and improved nutrient supply compared to the same soils with a smaller SOC content. Even small increases in SOC can markedly influence and improve these properties*".

(viii) it is noted in that same report at the top of page 5 that "*Significant long-term land use change (e.g. conversion of arable land to grassland or woodland) has by far the biggest*

[2] EA, ibid, page 8.

impact on SOC, but is unrealistic on a large scale because of the continued need to meet food security challenges".

(ix) biodiversity across farms is also in a poor state. The 2019 State of Nature Report (The State of Nature 2019, The State of Nature Partnership (2019)) recorded increases and decreases in different species, but overall a decline in the abundance and distribution of the UK's species since 1970, continuing a trend started hundreds of years earlier. The House of Commons Environmental Audit Committee (House of Commons Environmental Audit Committee: Biodiversity in the UK, bloom or bust?, First report of session 2021-22 (23 June 2021)) recorded this in stark terms. The Summary started as follows: "*the world is witnessing a colossal decline in global biodiversity*".

7.7 These benefits are recorded in the decisions of the Inspector's at Leeming Bar and Thaxted referred to earlier (6.6 (i) and (ii)). They are also recognised in the sector-specific National Policy Statement for Renewable Energy Infrastructure (EN-3, adopted 17th January 2024) at paragraph 2.10.89, which notes that "*solar farms have the potential to increase the biodiversity value of a site, especially if the land was previously intensively managed*".

7.8 The benefits have been recognised by the Secretary of State and Inspectors in appeal decisions. A few references are:

(i) in the decision on the Nationally Significant Infrastructure Project at Little Crow, Lincolnshire, dated 5th April 2022, which included 36.6 ha of Subgrade 3a, the Secretary of State agreed with his Inspector that the effect would be "*medium term, reversible, local in extent and of negligible significance during the operational phase with a moderate beneficial effect for the quality of soils because intensive cropping would be replaced with the growing of grass*" (para 4.50) (reference EN010101);

(ii) in the appeal decision for a solar farm at Bramley, Hampshire, dated 13th February 2023 (APP/H1705/W/22/3304561), the inspector, noting that 53% of the site was of BMV, noted (paragraph 58) "*The agricultural land would not be permanently or irreversibly lost, particularly as pasture grazing would occur between the solar panels. This would allow the land to recover from intensive use, and the soil condition and structure to improve. The use of the soils for grassland under solar panels should serve to improve soil health and biodiversity and the proposed LEMP, which could be secured by a condition attached to any grant of planning permission, includes measures to improve biodiversity of the land under and around the panels*";

(iii) in the planning appeal decision on 27th June 2023 for land south of the Leeming Bar substation (APP/G2713/W/23/3315877) the inspector noted "*I am satisfied from the evidence before me that resting the land from intensive agriculture would be likely to*

improve soil health by increasing the organic matter in the soil and improving soil structure and drainage, even if a return to arable farming would then start to reverse this improvement" (paragraph 21);

(iv) in the decision for a 47MW solar farm at Little Cheveney Farm, Marden, dated 5th February 2024 (APP/U2235/W/23/3321094), a site containing 47% BMV, the Inspector noted the benefits for soil, commenting in paragraph 51 that "*there is nothing to contradict the Appellant's evidence that the land would benefit from a change in the nature of its use – essentially that a 'rest' from intensive arable production would enhance land quality*" (note: this is soil quality, not ALC grade).

Conclusion

7.9 By adhering to good practice, soils will not be damaged during the installation process. Any damage that does occur is readily rectifiable.

7.10 Long term the soil will benefit from being in grassland.

8 EFFECTS ON FARM BUSINESSES

8.1 The Sites are occupied under a mixture of owned, rented or contract-farmed arrangements.

8.2 The Sites are divided into nine sites and farmed by nine different farm businesses, as follows.

Table 5: Farm Business Occupation

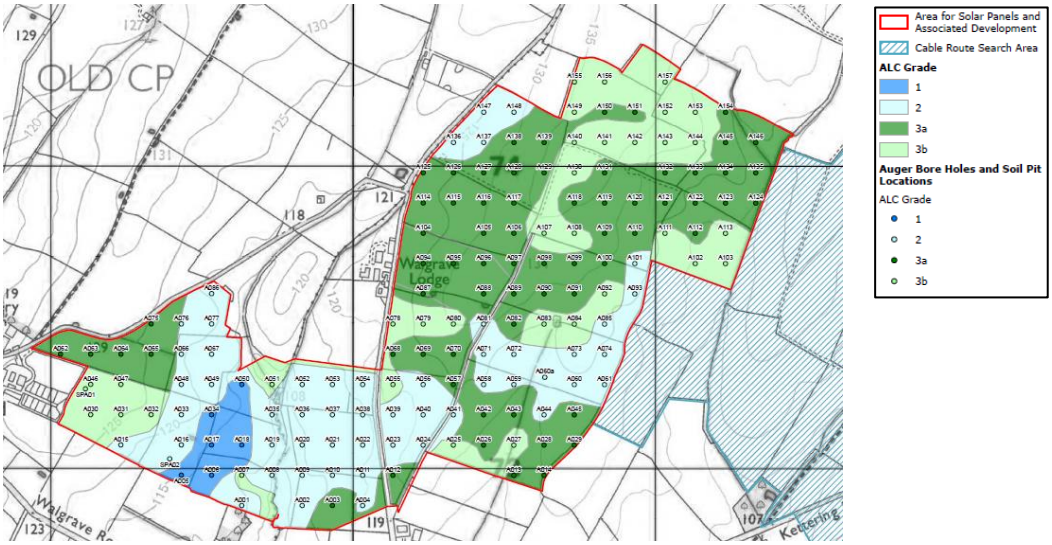
Farm	Relevant Green Hill site	Total Farmed (ha) (including the sites and other land operated by the farm business)
1	A	1,200
2	A.2	400
3	B (in two ownerships)	1,500
4	C, D, Part of E	800
5	Part of E	Non-secure
6	Part of F (F1)	Non-secure
7	Part of F (F2)	570
8	G and part of F (F3)	1,000
9	BESS	180

8.3 Short farm reports and an assessment of the proposals for each of these businesses are provided in **Appendix KCC5**. The following provides a summary of the farming enterprises involved.

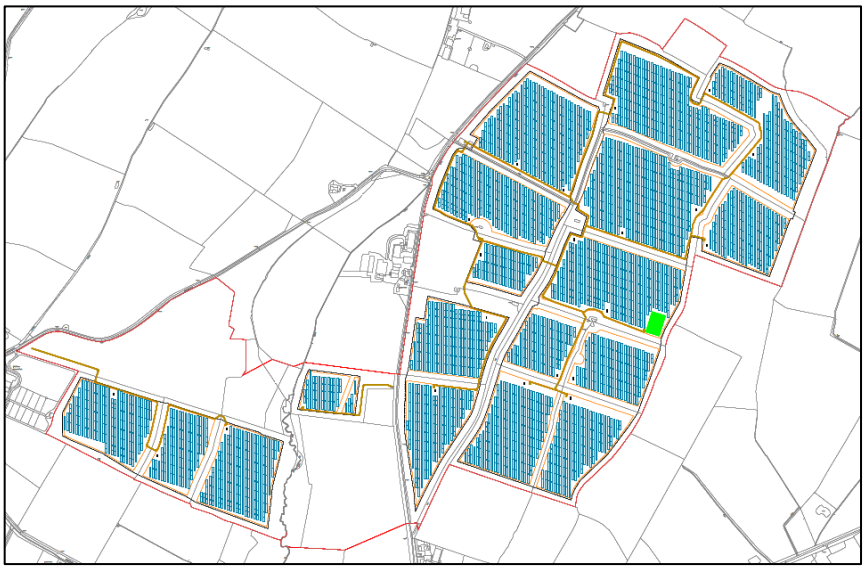
8.4 **Farm 1.** Farm 1 farms all of Green Hill A. The farm beyond Green Hill A extends in total to 1,200 ha, of which 320 ha is owned. In addition, the farm contract bales a further 400 ha of straw. The farm operates a combineable-crop arable rotation. There is farm diversification, a small beef herd and some grazing of sheep.

8.5 The proposed location of the panels avoids much of the Grade 2 land within Green Hill A, as shown on the comparison below.

Insert 14: ALC Green Hill 1



Insert 15: Proposed Panel Distribution



8.6 The effect of the Proposed Development will be a reduction in farmed area of about 15%, but with the potential for sheep grazing to offset reduced arable areas. A substantial farmed area of over 1,000 ha remains.

8.7 Typical views across Farm 1 are shown below, with further photographs in the Farm Report in **Appendix KCC5**.

Photo 19: Part of Green Hill A

8.8 **Farm 2.** This farm operates arable enterprises across Green Hill A.2. The land is a bare block of land, owned by a mixed-tenure farm from about 10 miles away. The block amounts to about 16% of the farmed area, leaving a holding of over 330 ha. There will be no severance and no significant adverse effects. A typical view over Green Hill A.2 is shown below.

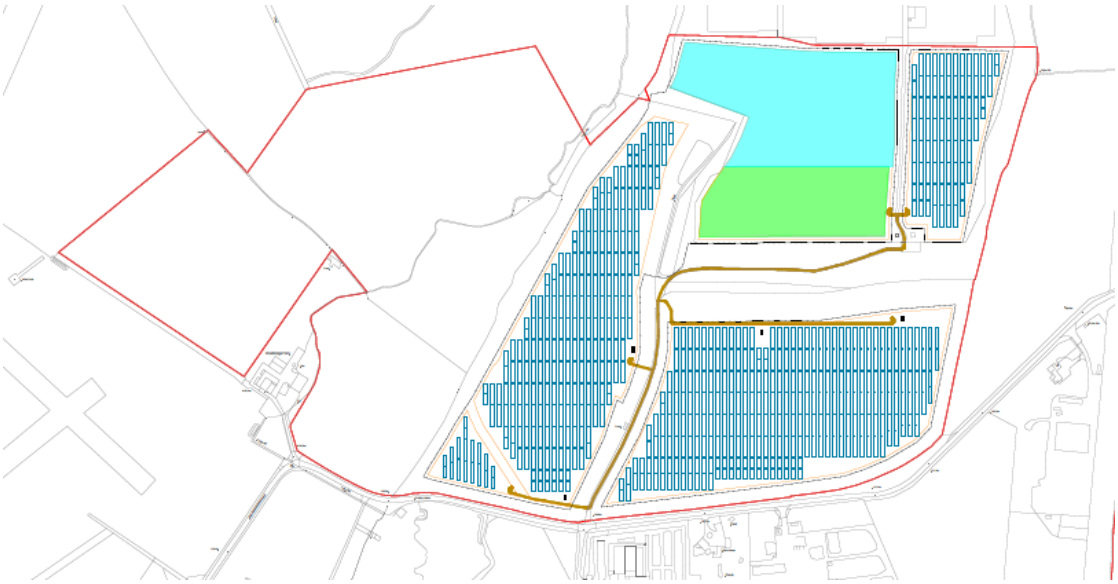
Photo 20: Looking West over Green Hill A.2

8.9 **Farm 3** occupies arable and grassland of Green Hill B. Green Hill B is in two different ownerships. The land is occupied by a substantial farming enterprise that owns, rents and contract farms about 1500 ha. There will be only a small, about 5%, reduction in the area farmed. A view over the arable land of Green Hill B is shown below.

Photo 21: South West Field in Green Hill B

8.10 **Farm 4** owns Green Hill C and farms Green Hill D and part of Green Hill E. Green Hill C adjoins an existing solar farm, and is the location for a proposed 400kV substation and BESS, as shown below.

Insert 16: Illustrative Layout Proposals for Green Hill *C (including BESS)*



8.11 Green Hill D comprises a series of arable fields accessed off Highfield Road. Solar PV Arrays are proposed in part of these, as set out in **Appendix KCC5**. Green Hill E is also rented, and is all arable land. A typical view of this is shown below.

Photo 22: Part of Green Hill E

8.12 The collective effect of the Scheme will be the reduction in arable farmed area of about 39% of the farm, which is a significant proportion. The farm is, however, able to continue and will remain a substantial agricultural unit of almost 490 ha, and will have income from the solar and potential from grazing sheep.

8.13 **Farm 5** tenants the western part of Green Hill E, as shown below, compared to the ALC plan. The land affected is only a proportion of the farm.

Inserts 17 and 18: Part of Green Hill E

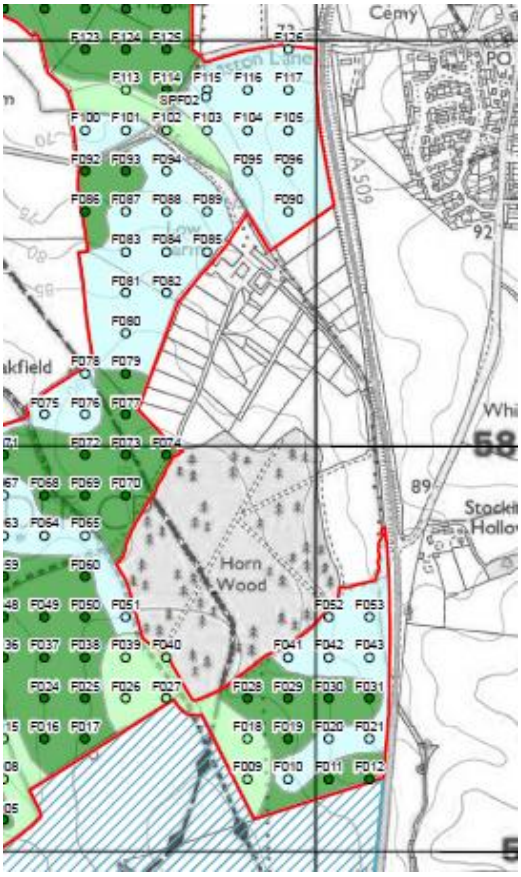
8.14 Panels are proposed on only part of the holding, and are not proposed on the Grade 1 field. A view across the western field, looking south east, is shown below.

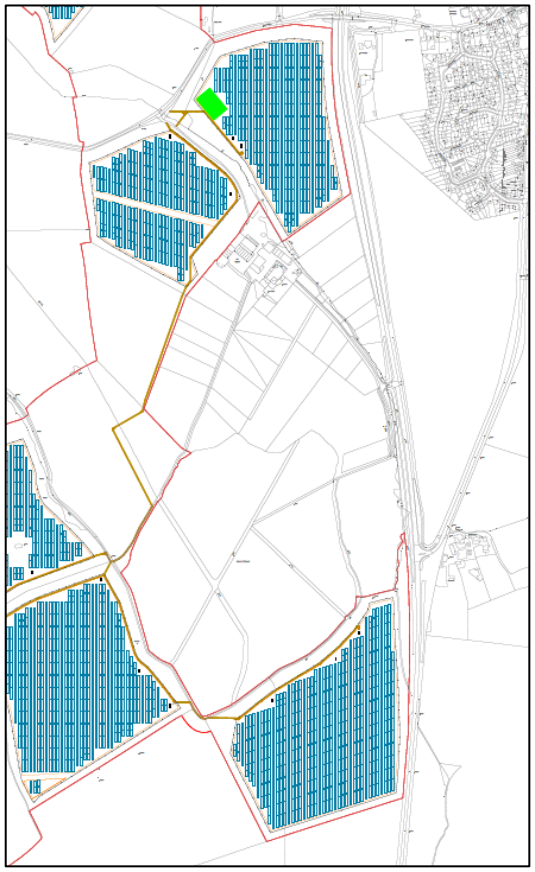
Photo 23: Part of Green Hill E

8.15 **Farm 6** farms six fields in a block at the northern end of Green Hill F1. The land is part of a larger farming business but is occupied on a non-secure, short-term arrangement and does not therefore form a secure, long-term part of any farm. As a consequence, the effect is limited.

8.16 **Farm 7** is a tenant of the estate that owns Green Hill F (2). The proposed Solar PV Arrays will be in two blocks across this holding, as shown below compared to the ALC results. The land is held on tenancy from year to year.

Inserts 19 and 20: Part of Farm 6



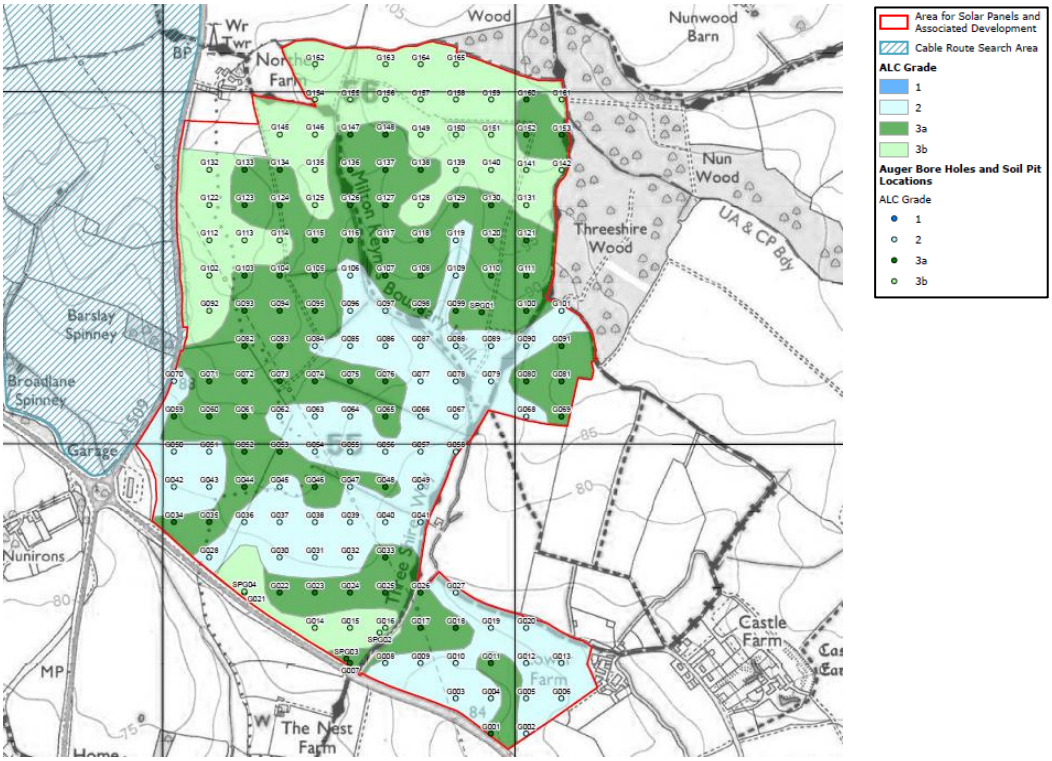


8.17 Infrastructure is proposed on the eastern side of the drive to the industrial estate, shown below.

Photo 24: Looking East Over Part of Green Hill F

8.18 **Farm 8** farms part of Green Hill F (F3) on a contract basis from the tenant, and farms Green Hill G. Green Hill G is owned, and forms a bare block of arable land. The land quality across Green Hill G varies in a complex pattern, as shown below.

Insert 21: ALC of Green Hill G



8.19 Whilst the two parcels represent about 20% of the farmed area, the farm will remain in excess of 800 ha. The effect will not be significant. A view typical of Green Hill G is shown below.

Photo 25: Part of Green Hill G Looking North

8.20 Green Hill **BESS.** The BESS area is farmed by a smaller holding of circa 180 ha. There are two fields included in the Scheme, amounting to about 10% of the farmed area. The effect will not be significant.

Conclusions

8.21 Some of the land is occupied on short-term, non-secure arrangements. The reduction in farmed area of such land is considered to be a limited impact, because the farm cannot rely upon that land from year to year.

8.22 The farm analysis identifies that:

- the farmland is almost all in arable farming use, growing cereals and combinable break crops. There is no root cropping;
- some areas are grassland, but these represent a small proportion of the land;
- a number of farms already allow grazing by sheep, typically in the winter;
- no farms will be significantly adversely affected.

8.23 This is summarised in Table 6.

Table 6: Farm and Site Analysis

Green Hill Site ref	Farm	Area Farmed (total)	Area of Site (ha)	Proportion
A	**1**	1,200	173.7	c15%
A2	**2**	400	65.2	c16%
B	**3**	1,500	64.7	c5%
C	**4**	800	56.4	c7%
D	**4**	800	42.1	c5%
E1	**4**	800	213.6	c27%
E2	**5**	Not known	103.0	Non-secure
F1	**6**	Not known	53.0	Non-secure
F2	**7**	570	91	c16%
F3	**8**	1,000	23.6	c2%
G	**8**	1,000	168.3	c17%
BESS	**9**	180	43.3	C24%

8.24 The full details of the farms for E2 and F1 are not known, but because the land is held on a non-secure basis the occupiers could change at short notice, so the information is not required for assessment.

9 RURAL ECONOMIC AND FOOD PRODUCTION CONSIDERATIONS

Introduction to This Chapter

9.1 This Chapter focusses on the wider implications for the rural economy, and on the economic and other benefits (specifically in food and other produce) of the BMV land within the Sites.

Food Production On the Site

9.3 The land is used primarly for arable crop production. As described in section 8 and the accompaning farm reports (**Appendix KCC5**), cropping patterns have changed in recent years as oilseed rape production has declined, owing to stem flea beetle problems for which chemical control has been banned. The land is a mixture of mostly wheat and barley, with breakcrops of oats and other combineable crops, or agri-environmental cover crops.

Planning Policy

9.3 The use of land for agriculture is not "development" as defined in the Town and Country Planning Act 1990. Legislation only controls the change of use from agriculture. It does not to any degree require any particular level of activity on the land.

9.4 A landowner can farm the land intensively for food production. Equally a landowner can use the land for non-food crops or for energy crops. They can use the land intensively, unintensively, organically, inorganically, for grazing horses, for biodiversity, for rewilding, to grow hay to feed horses, or to plant it as woodland. They can use their land seasonally for camping. They can grow food crops, energy crops, industrial crops, or no crops.

9.5 In short, food production is not a requirement. It is left entirely to the land owner or occupier.

9.6 Government policy refers to land of the Best and Most Versatile quality. It does so in the context of protecting the resource. Policy does not, at any point, set out that agricultural land should be used for food production, or that BMV land should be used for food production.

9.7 Local planning policy does not require agricultural land to be used for food production. Planning policy does not refer to any particular level of intensity of agricultural use.

9.8 The WMS of 15th May 2024 refers to food production and restates the Government's previous objective of broadly maintaining current levels of production. The WMS (May 2024) did not alter the policy on food security or the use of BMV. The WMS did not amend the objective of "racing ahead" with solar deployment. The WMS acknowledged that solar

could involve 1% of farmland. Clearly the use of up to 1% of farmland is not considered to be problematic for UK food supplies, otherwise a different approach would have been taken.

9.9 The new Secretary of State has assessed the matter afresh and concluded that we should continue to permit solar development. When addressing Parliament on 18th July 2024 he stated that "*the biggest threat to nature and food security and to our rural communities is not solar panels or onshore wind; it is the climate crisis which threatens our best farmland, food production and the livelihoods of our farmers*".

9.10 Food production is not mentioned in planning policy. A reference in a footnote to the NPPF added in December 2023 was deleted in the December 2024 amendment.

Analysis

9.11 There are no Government incentives that relate to food production and increasing food production. Government initiatives and funding under schemes such as the Sustainable Faming Incentive, relate to soil and biodiversity improvements. These initiatives do not fund food production.

9.12 As context, the Government Food Strategy (June 2022) does not seek to increase food production. The "Foreword" recognised near self-sufficiency in wheat, most meat, eggs and some vegetables, but not in soft fruit although the trend is favourable. The strategy does not seek to alter that position in respect of the main commodities. The strategy states:

"*Overall, for the foods that we can produce in the UK, we produce around 75% of what we consume. That has been broadly stable for the past 20 years and in this food strategy we commit to keep it at broadly the same level in the future*".

9.13 The shortfall is not necessarily because we cannot produce more. It is largely due to consumer choice to eat food out of season, or to import more cheaply. In many crops, meat, dairy and eggs, we are self-sufficient.

9.14 In the UK Food Security Report (2021), which preceded the Food Strategy, it is noted that, for example, the mix of grain grown in the UK differs from the grain consumed in the UK. It was noted that grain does not provide a healthy or nutritious diet or meet consumer demand for a varied diet. However, the report noted the following:

"*However, from a purely calorific perspective, the (below average) grain yield in 2020 of 19 million tonnes would be sufficient to sustain the population. It is equivalent to 283kg per person, 0.8 kilos per day. A kilo of wheat provides 3,400 calories, compared to recommended calorie intake of 2 to 2500 for adults. From these figures it is easy to demonstrate that, even without accounting for other domestic products like potatoes,*

vegetables, grass-fed meat and dairy, and fisheries, current UK grain production alone could meet domestic calorie requirements if it was consumed directly by humans in a limited choice scenario".

9.15 In a Press Release of 6th December 2022, from Defra, the Government's stated position is that "*the UK has a large and highly resilient food supply chain. Our high degree of food security is built on supply from diverse sources: strong domestic production as well as imports through stable trade routes*" (Defra Press Release 6th December 2022). This is reproduced at **Appendix KCC6**.

9.16 Therefore there is no policy or requirement to use land for growing food, and the Government has clearly set out that there is no food security concern in using agricultural land for solar.

Food Production Implications

9.17 Neither policy nor guidance suggests that agricultural land per se is not needed to meet our obligations to provide renewable energy. Policy only refers to the benefits of BMV land. Consequently the appropriate quantification is the incremental difference between production on BMV land and production on non-BMV land. That is because, if BMV land is avoided, land of poorer quality will be used instead, so production from that land will be affected.

9.18 We are not aware of any research that explicitly compares production and economics between BMV and non-BMV land. Therefore, as a crude measure, we have used the difference between “average” and “high” performance enterprises in the John Nix Pocketbook for Farm Management to compare the potential difference.

9.19 It is noted that most farms in the Site are achieving yields from cereals about or slightly above average, and rarely at the high level. Therefore this assessment is a worst-case analysis. Farmers do not normally commission ALC surveys and crop performance often is unrelated to ALC grading.

9.20 The difference in production between “high” and “average” yields from the Pocketbook are shown below. The source figures are set out in **Appendix KCC7**.

Table 7: High and Average Yields from the Pocketbook

Yield (t/ha)	Crop	
	Winter Feed Wheat	**Winter Feed Barley**
Average yield	8.3	7.3
High yield	9.5	8.4
Difference	1.2	1.1

9.21 For the 992 ha of BMV on the Sites, this would be an annual increase in production of up to 1,190 tonnes of wheat, if all the land was in cereal production. This is the difference between average yield and high yield (992 ha x 1.2 t/ha = 1,190). This analysis is a worst-case scenario, because:

- it assumes that all the land is in wheat production, which has the largest tonnage incremental;
- it assumes that all the BMV land can actually crop 1.2 t/ha more than non-BMV. In discussion with the farmers, such a difference is not accurate;
- it assumes all of the 992 ha is cropped. In reality there are headlands, areas of agri-environmental, obstacles (eg pylons) and other reasons why cropping to the hedgeline is not possible.

9.22 This Chapter now turns to consider the land use, economic and food production implications, coupled with the agri-environmental benefits of the Proposed Development, in the local and regional context.

Regional Analysis

9.23 The analysis is in three parts:

(i) use of BMV agricultural Land;
(ii) food and economic considerations;
(iii) agri-environmental considerations.

9.24 **Agricultural Land.** The site extends to approximately 1,450 ha (1,441.6 hectares). Of this 992 ha is BMV. As set out in Table 1, based on the “provisional” ALC, some 220,000 ha of agricultural land is within Northamptonshire County. The site would involve approximately 0.65% of the County’s agricultural land.

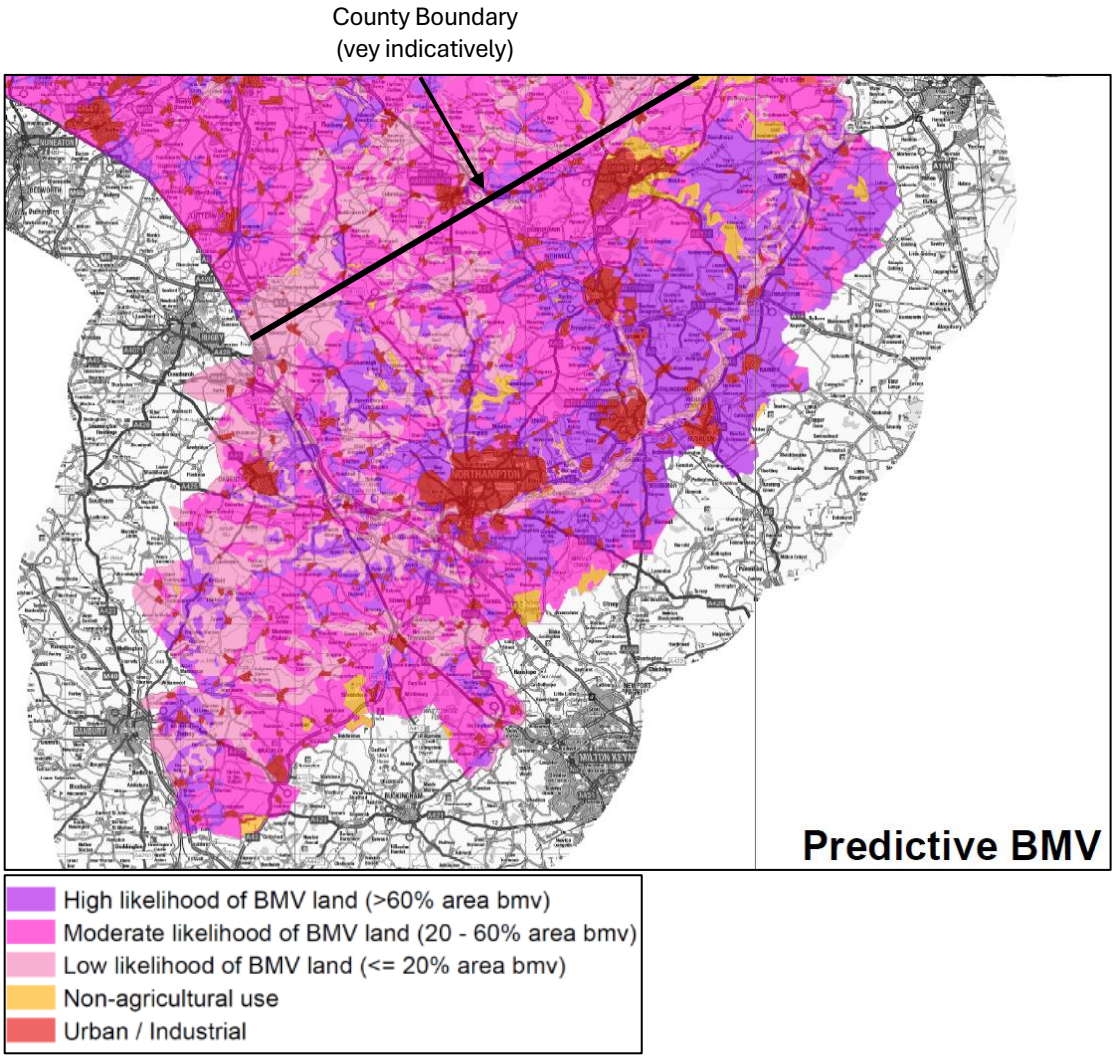
9.25 Northamptonshire County does not exist in isolation, and across England the “provisional” ALC recorded some 11.4 million ha of agricultural land.

9.26 The area of agricultural land actively included in farms is considerably less. The annual statistics published by Natural England estimate that about 8.7 million hectares of farmland is "utilised".

9.27 Government policy recognises the need to use agricultural land for solar panel deployment. Policy recognises that grid connections are a key factor in delivering renewable energy schemes.

9.28 The central and eastern part of the County is mostly 20-60% or >60% BMV, as shown below.

Insert 22: Likelihood of BMV, Approx County Boundary



9.29 The Site is 65% BMV. In the general area the land is almost all in either the 20-60% BMV, or >60% BMV. Therefore, the incremental effect would also be less than assessed above, which quantifies the effect between BMV and non-BMV for all BMV land within the Proposed Development. The reality of moving to a different site would be less, as some proportion of BMV would inevitably and unavoidably be included.

9.30 **Food and Economic Considerations.** EN-3 refers to the economic and other benefits of BMV agricultural land. It does not refer to food production. Agricultural land is used for a wide range of uses, including food, non-food, energy crops and agri-environmental uses, trees and grazing.

9.31 The WMS (15th May 2024) sets out that "*even in the most ambitious scenarios*" meeting the renewable targets through solar "*would still occupy less than 1% of the UK's agricultural land*". The following statistics are presented as they provide some context for this figure:

(i) the Utilised Agricultural Area (UAA) of land in England in 2024 was 8.7 million hectares (Agricultural Land Use in England at 1 June 2024, Defra, 26th September 2024);

(ii) the estimated proportion of BMV land in England is 42% (Technical Information Note TIN049, Natural England, **Appendix KCC2**). Applying that to the UAA means 3.7 million ha of BMV land was utilised in 2024;

(iii) if the 1% of agricultural land figure referenced in the WMS came into effect it would amount to about 88,000 ha of agricultural land, of which (on a straight statistical application) 37,000 ha (42%) could be BMV;

(iv) according to the latest Agricultural Land Use in England at 1 June 2024 statistics (Defra, 26th September 2024) the area of uncropped arable land increased by 107% to 581,000 ha. Of this 276,000 ha were left as bare fallow and 305,000 ha were used for environmental benefit;

(v) the dataset identified that 3,600 ha were used for solar panels and also used for grazing production in 2024, and a further 3,700 ha were used for solar panels but not used for agricultural production;

(vi) the Government's Biomass Strategy (Department for Energy Security and Net Zero, August 2023) set out that currently 121,000 ha is in biomass production and the strategy seeks to see this increase;

(vii) currently there are of the order of 900,000 horses in the UK. The split between England and the other countries is not known exactly, but in terms of sports horses about two thirds are in England. If that applied to the total, then some 590,000 horses are in England, which if each requires 0.4 ha of land for grassland (grazing and hay) means about 240,000 ha of land is used for horses grazing and feeding. If 42% of that is BMV, some 100,000 ha of BMV is used for grazing or feeding horses. This I include only to illustrate the land use choices we make and the land potentially available.

9.32 The land will likely, in any event, continue to be used for food production through sheep grazing and rearing, in parallel with the generation of renewable energy. Therefore the impact on food production is offset by sheep grazing, producing lamb and wool, and requiring agricultural labour.

9.33 Four recent NSIP decisions have considered the effects on agricultural land and on food and other benefits. They have concluded as follows, being reduced from the excerpts set out in section 6.11:

(i) EN010127 Mallard Pass Solar Farm. There are 360 ha of BMV within the Order Limits. In the Secretary of State's decision letter of 12th July 2024 he reviewed (in isolation and in combination) the impacts on food production (sections 4.87 to 4.103). In 4.100 he concludes that the project and others in the region "*would represent around 0.5% of the BMV land across Lincolnshire and Rutland. The Secretary of State agrees with the ExA that the impact of the Proposed Development in relation to food production in the national context is negligible*".

(ii) EN010133 Cottam Solar Project. The quantum of BMV in this project was modest, but the Secretary of State's decision of 5th September 2024 concluded that the loss or arable production from the 1,160 ha site is a negative impact but "*should be classed as "little negative weight" rather than "significant negative weight*";

(iii) EN010123 Heckington Fen Solar Park. The site includes 257 ha of BMV and the Secretary of State's key conclusion on food related matters is that "*In agreement with the ExA, the Secretary of State considers that the above factors mean that the Proposed Development will cause only minor adverse effects to land use and soil*";

(iv) EN010132 West Burton Energy Park, consented on 24th January 2025. The "*Secretary of State considers the fixed-term, reversible loss of land for food production is a negative impact of the Proposed Development, but the impact is small when considered against the total agricultural land available for food production in Lincolnshire*".

9.34 **Agri-environmental Considerations.** As set out in section 2, at 2.14, the Government is committed to conserving and managing 30% of the UK's land for biodiversity targets. This, Government sets out, can be achieved without any expected fall in food production. The Scheme will benefit this objective.

10 CONCLUSIONS

10.1 There are no significant adverse effects on agricultural interests.

10.2 The effects on agricultural land are limited. The land quality is not affected by being sealed or downgraded. There are modest areas affected by tracks and fixed infrastructure, but these are capable of restoration in full on decommissioning.

10.3 The effects on soils are beneficial. The soil will improve from being rested from continuous arable production.

10.4 There are no significant adverse effects on farm businesses. The effects are generally modest, and there will continue to be the opportunity for agricultural activity from sheep grazing offsetting reducing activity from arable cropping.

10.5 Overall the likely effects of the Scheme on agricultural land, soils and farm businesses are limited.

FINAL

GREEN HILL SOLAR FARM

EN010170

FARMING REPORT

VOLUME 2: APPENDICES

May 2025

KERNON
COUNTRYSIDE CONSULTANTS LIMITED

FINAL DRAFT

GREEN HILL SOLAR FARM

EN010170

FARMING REPORT

VOLUME 2: APPENDICES

16th May 2025

Authorised By ……

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*Consultant – **Ellie Clark** BSc(Hons) MBIAC*

CONTENTS

Appendix KCC1
Extracts from the Land Use Consultation January 2025

HM Government

Land Use Consultation

January 2025

We are the Department for Environment, Food and Rural Affairs. We are responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.

This publication is available at www.gov.uk/defra

Any enquiries regarding this publication should be sent to us at:
landuseconsultation@defra.gov.uk

Responding to the consultation

Please respond to this consultation using the Citizen Space consultation hub at Defra https://consult.defra.gov.uk/land-use-framework

For ease of analysis, responses via the Citizen Space platform would be preferred, but alternative options are provided below if required:

By email to: landuseconsultation@defra.gov.uk

In writing to:

Land Use Consultation

Third Floor, Mallard House,

Kings Pool, 1-2 Peasholme Green,

York,

YO1 7PX

Please note, any responses sent by post must have arrived at the above address by the closing date of the consultation (25 April) to be counted. Any responses received after this date will not be analysed. To ensure your response is included in the analysis, please consider responding online via Citizen Space.

Consultation period

This consultation will open on 31 January and close on 25 April 2025

Compliance with the consultation principles

This consultation is being conducted in line with the Consultation Principles set out in the Better Regulation Executive guidance which can be found at: https://www.gov.uk/government/publications/consultation-principles-guidance

If you have any comments or complaints about the consultation process, please address them to:

By e-mail: consultation.coordinator@defra.gov.uk

After the consultation

Information provided in response to this consultation document, including personal information, may be subject to publication or release to other parties or to disclosure in accordance with the access to information regimes such as Freedom of Information Act 2000 (FOIA), Environmental Information Regulations 2004 (EIR) and the Data Protection Act 2018.

If you want information, including personal data, that you provide to be treated as confidential, please say so clearly in writing when you submit your response to the consultation and explain why you need these details to be kept confidential. If we receive a request for disclosure under the FOIA or EIR, we will take full account of your explanation, but due to the law we cannot provide an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as a confidentiality request. Defra is the data controller in respect of any personal data that you provide, and Defra's Personal Information Charter, which gives details of your rights in respect of the handling of your personal data, can be found at:

https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/about/personal-information-charter

Contents

Foreword

Our land is our greatest natural asset - the source of food, the bedrock of nature, the support system of the environment on which we all rely. It is the place we live, work and rest. The people who work on and look after the land, and make decisions about how land should be used, have been pivotal in this country's history and are central to its future. Because these decisions are not marginal, the use of our land underpins everything in our economy and our society.

The land can do so much at once. Growing fresh produce and rearing animals, storing carbon and creating habitats for precious wildlife, providing homes and community spaces, siting the infrastructure that supports our society - a single plot can contribute in so many ways. There are increasing opportunities and demands on our land, requiring land use to be more dynamic than ever. Across both rural and urban landscapes, we must maintain food security in a time of global uncertainty, protect communities from the impacts of a warming climate, host growing infrastructure networks and settlements, and make room for healthier natural ecosystems to reverse nature's decline.

That is why this Government is launching a national conversation about land use, to minimise trade-offs and optimise the use of our land.

At a national and local scale, we need better spatial planning. For too long, a haphazard approach has been taken to the way infrastructure is sited or homes are built. In order to grow the economy and meet the challenges of future decades, we need to use our data to make better decisions. This will also bring better lives - supporting homes to be built where there is access to water and clean air, and major infrastructure built where it least disrupts nature.

On the ground, our natural world is under threat, with England now one of the most nature-depleted countries in the world. Much-loved British birds and wildlife are at risk of national extinction, whilst our rivers, lakes and seas have unacceptable levels of pollution. Some of our most treasured landscapes are in poor condition, despite the best efforts of many. Meanwhile the impacts of global warming threaten not just our land but the livelihoods that depend on it.

Farming is already going through change: taking on new models of agricultural practice, adapting food production in a changing climate, and building resilience to increased flooding or other global shocks like changing patterns of pests and disease. I know from conversations with farmers and landowners that they not only understand this need for change, but that they are actively delivering it. They know their land best, and it is right that they lead this transition with clarity about land use change so they can plan their businesses.

We as a Government must support this. That is why we have committed £5 billion to farming in the next two years alone, and alongside this are creating the right conditions and incentives to bring in private sector investment to accelerate the adoption of sustainable farming.

By publishing a Land Use Framework, we will go further by creating a toolkit to support decision making and inform discussion on how we can guarantee our long-term food security, how we can support development and how we can achieve our targets on nature and climate that deliver multiple benefits and support economic growth.

This is not going to tell people what to do with their fields or replace the planning system. What the Framework will do is reflect your feedback from this consultation, set out a direction for England's land use and recognise the challenges that land managers will need us to address so that they can deliver our shared vision.

The Land Use Framework will interact with other foundational strategies we are developing in DEFRA; the Environmental Improvement Plan, a 25-year roadmap for farming, and a food strategy. And across government, the Land Use Framework will support sustainable growth, interacting with the Strategic Spatial Energy Plan as we accelerate to clean power by 2030, and driving our ambition to build 1.5 million new homes. This is critical to the delivery of this Government's missions, and the long-term prosperity of our country.

I am consulting before publishing a Framework to ensure that this work is truly informed by what would make this toolkit most useful, what principles should guide us, and what we need to change to help deliver it. As part of this national conversation, there will be workshops across the country, bringing farmers, conservation groups and planners to the table, to put the insights of those who best understand our landscapes at the centre of our work to develop a Land Use Framework.

Only with your input can we publish a Framework in 2025 that truly speaks for England's land, those who manage it, and those who benefit from it.

Our vision for land use in England

Land in England is changing in response to the climate and biodiversity crises, global shocks, the needs of consumers and businesses, and Government policy. In recent years, farmers have seen some of their most valuable land impacted by increasingly frequent extreme weather events. At the same time, communities have rightfully demanded change to clean up our rivers, lakes and seas.

We want to meet these challenges head on and start a public discussion on how land can deliver our missions for Growth and Clean Energy, boost food security, and meet our statutory climate and nature targets. This Government will be an active partner in the delivery of a fair land use transition which will:

- **Make space for nature recovery, water, and emissions reduction.** England's land use will need to change as we move towards 2050 to help deliver our legally binding targets under the Environment Act and Climate Change Act.

- **Support sustainable and resilient food production.** The food system needs to support farmers and landowners to invest in the long-term viability of their businesses, contribute to food security and increase their resilience to climate change.

- **Deliver new infrastructure and housing.** Decision makers at every level need information and tools to deliver sustainable development, including 1.5 million new homes new energy and water infrastructure, and the relatively small area of land use change it requires. We want to use strategic spatial planning to assess gains and losses against national and regional objectives, moving responsibility for managing land use trade-offs away from individual projects.

- **Fix the foundations for resilient long-term economic growth.** Supporting sustainable economic growth over the coming decades will mean investing in its natural capital foundations and long-term climate resilience.

- **Co-create plans for delivery.** Land use change that improves the overall productivity of land alongside wider social and environmental benefits will only happen with the right skills, data, incentives and structures in place. We want to collaborate with land managers, businesses, and communities to define what these are and our plan to deliver them.

This consultation sets out our analysis of the scale of long-term land use change required and is the start of a conversation about how and where it could be delivered. This conversation will aim to define how we can use England's land to give the best combination of benefits, and how we can support land managers and other decision makers to deliver this.

Purpose of this consultation

Policy decisions that impact how land is used are often far too remote from the lived experience of farmers, developers, planners, and the citizens whose work shapes our places and landscapes. The Devolution White Paper set out our plan to shift power away from Whitehall and into the hands of those who know the land and their communities best. This consultation process will help define what role the Framework will play in this transition. It is not our intention to use the Framework to bind decision makers or prescribe specific land uses in specific places; we want it to inform decisions, not impose them.

A thriving natural environment and stable climate are the foundations of our economy and are essential to food security and profitable farm businesses. Changes in English land use are required to reverse the decline of our natural environment, help absorb greenhouse gases, adapt to the impacts of climate change, and increase the resilience of our food systems, infrastructure, homes and communities.

These foundations will support Government's commitment to build 1.5 million homes and the new infrastructure needed to deliver resilient and sustainable growth and clean energy[1].

Advances in spatial data science, including earth observation data, mean we can now map potential long-term changes in land use more effectively. We want to use the analysis included in our accompanying annex to support discussions on how land is used, and the changes to policy needed to support land managers and communities.

A Land Use Framework will develop and support delivery of a shared vision for English land use[2]. This consultation document will inform the subsequent development of a Land Use Framework in 2025. **Section 1** of this consultation starts with evidence to underpin decisions on land use change[3]. **Section 2** sets out draft principles for decision making. **Section 3** outlines potential policy levers that could be developed as part of a Land Use Framework such as improving access to data and developing targeted land management incentives. **Section 4** describes the process of co-creation that will inform the Land Use Framework.

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[1] Including the actions shaped by the industrial strategy consultation: *Invest 2035: the UK's modern industrial strategy* (October 2024)

[2] Many of the policies in scope of this consultation are devolved. The territorial scope has been limited to England. The UK Government will work closely with the devolved Governments in Scotland, Wales and Northern Ireland to develop the Land Use Framework for England.

[3] Details of this evidence, its assumptions and its limitations are provided in the Analytical Annex.

The Framework will be published in 2025. It will include:

1. Principles that Government will apply to policy with land use implications.
2. A description of how policy levers will develop and adapt to support land use change.
3. A release of land use data and analysis to support public and private sector innovation in spatial decision making, and the development of tools to support land managers in practice.

The evidence base that underpins this consultation is a basis for wider reform that includes a Farming Roadmap, a Food Strategy and the review of the Environmental Improvement Plan. It also supports the Government's wider strategic planning agenda, including the Industrial Strategy, long-term housing strategy, New Towns Taskforce, National Integrated Transport Strategy, Ten Year National Infrastructure Strategy and the Strategic Spatial Energy Plan.

These land use challenges are not unique to England. With the other UK nations, we have an opportunity to learn from others and to lead by example in managing the land use challenges that are shared by every country committed to the Paris Agreement on Climate Change and Convention on Biological Diversity. The Land Use Framework will play a critical role in delivery of our domestic and international commitments, including our Carbon Budgets, National Biodiversity Strategies and Action Plans, and Nationally Determined Contribution to international action on climate change.

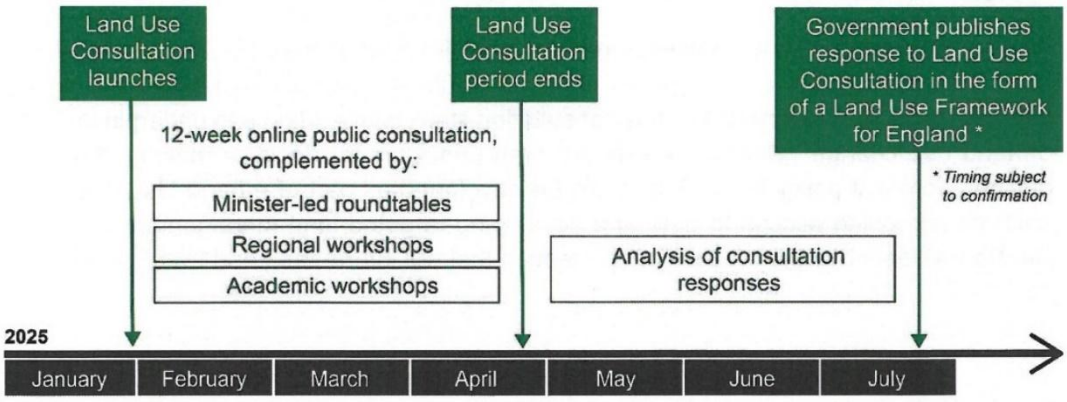

Figure 1: Timeline of key milestones and activities in the Land Use Consultation process

A long-term view of land use change

By land area, England is still a predominantly rural and agricultural country. Of England's total land area, 85% can be classed as rural[4]. This land provides the critical underpinnings of our economy from food and rural housing to clean water and wildlife habitats. 67% of England's land is agricultural, made up of 38% arable land and 29% grassland[5]. Our natural capital generates an annual flow of benefits, including food production, of £37bn[6] in England alone.

Nevertheless, by population, England is largely urban: in 2020, 83% of people lived in urban areas (settlements of more than 10,000 inhabitants)[7].

More detail on England's current land uses and the value they provide is set out in the Analytical Annex accompanying this consultation.

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[4] See the Rural-Urban Classification for Output Areas in England (2011, most recent year for which data is available): https://assets.publishing.service.gov.uk/media/610c08e4d3bf7f044024465a/RUCOA_leaflet_Jan2017.pdf

[5] This describes Utilised Agricultural Area as a proportion of England's total land area: https://www.gov.uk/government/statistics/agricultural-land-use-in-england.

[6] 2022 value derived from the ONS publication "UK natural capital accounts 2024": https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapitalaccounts/2024. Please refer to Section 1.2 of the Analytical Annex for more information on the value of natural capital.

[7] Statistical Digest of Rural England, April 2024: https://assets.publishing.service.gov.uk/media/661d3b95ac3dae9a53bd3dd3/16_04_2024_-_1_-_Population.pdf

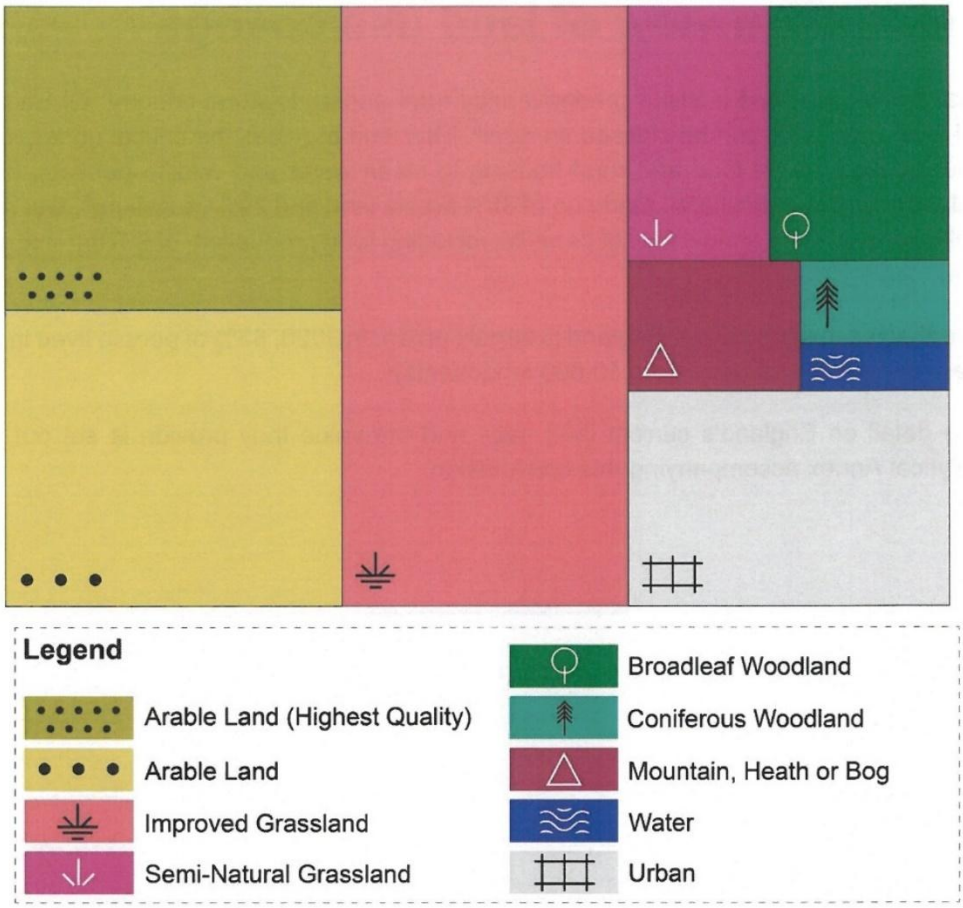

Figure 2: Approximate proportions of England's total land area occupied by different types of land use (derived from UKCEH spatial data, broken down by Agricultural Land Classification grade which assesses land's capacity to produce food).

Arable land is mainly used to produce crops for food and animal feed. Grassland is primarily used for animal grazing and silage, with improved grassland being more intensively managed for agricultural production, and having lower species diversity, than semi-natural grassland. While data is not available for England and the figure is likely to be lower, 85% of the UK's Utilised Agricultural Area (UAA) in 2023, across both arable and grassland, was used for animal feed or animal production. A small proportion of the UK's UAA is used for growing crops for bioenergy. [8]

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[8] JNCC Report No. 307, Guidance on the interpretation of the Biodiversity Broad Habitat Classification (terrestrial and freshwater types), July 2000: https://data.jncc.gov.uk/data/0b7943ea-2eee-47a9-bd13-76d1d66d471f/JNCC-Report-307-SCAN-WEB.pdf
Food Security Report 2024: https://www.gov.uk/government/statistics/united-kingdom-food-security-report-2024/

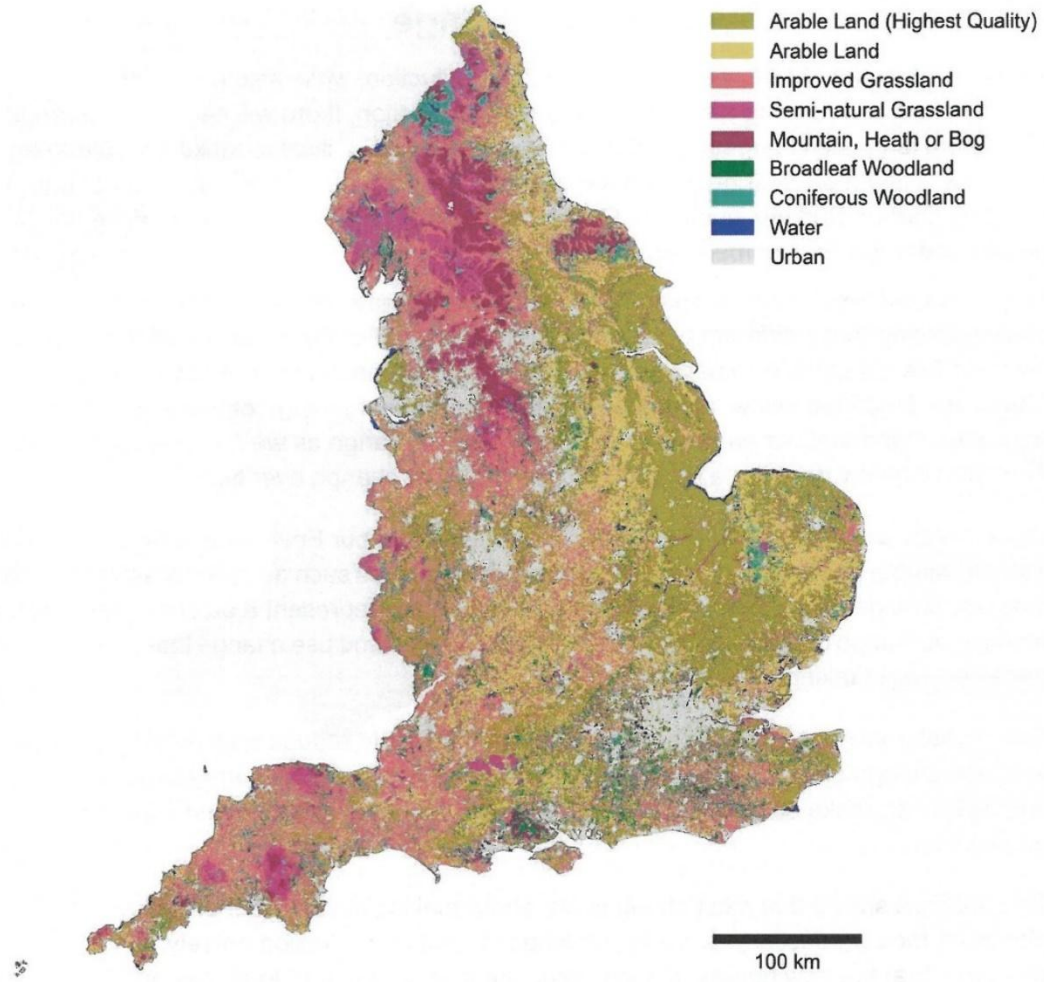

Figure 3: Land in England today, showing how the use and capability of land varies widely at a range of scales, driven by complex geography and drivers of land use decisions (derived from UKCEH spatial data, broken down by Agricultural Land Classification grade which assesses land's capacity to produce food).

What we mean by land use change

To make space for nature, water, and emissions reduction, while also delivering new infrastructure and housing and maintaining food production, there will need to be a range of different land use changes by 2050. These changes are critical to make agriculture and food production more resilient to climate change. They are also necessary to meet our statutory Carbon Budgets under the Climate Change Act and statutory environmental targets under the Environment Act.

To provide context for the co-design of a Land Use Framework we need a consistent way of categorising these different types of land use change. For the purposes of our analysis, we used five categories[9] to define types of land management and land use changes. These are described below, alongside the approximate percentage of England's total agricultural land that our analysis shows may need to change as we move towards 2050. The figures below describe a dynamic picture that may change over time.

Our analysis explores how land use decisions could meet our Environment Act and Climate Targets without undermining food production[10] or objectives such as national security[11]. The land use changes described in Figures 4 and 5 therefore represent a balanced approach to meeting our range of priorities, including several types of land use change that achieve wider benefits without taking land out of food production.

The spatial analysis set out in the Analytical Annex aims to reduce trade-offs by avoiding land use change on our best agricultural land. It shows how landowners and land managers can make decisions that limit the scale of land use change and support profitability.

This analysis shows that most changes are about making land more multifunctional alongside food production, rather than taking land out of production entirely. It also illustrates that the new homes and infrastructure that are needed to deliver our Growth and Clean Energy Superpower Missions are a relatively small driver of land use change.

On the agricultural land not subject to specific land use change, we expect the majority to undertake land management changes (Category 1), such as changes to meet the Environmental Improvement Plan objective of having 60% of soils under sustainable management. Please refer to Table 3 of the Analytical Annex for detailed definitions of categories.

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[9] Please refer to Table 3 in Section 3 of the Analytical Annex for more information on the five categories used to describe types of land management and land use change in our analysis.

[10] The scope of our analysis, including which targets are quantified, is described in the Analytical Annex.

[11] For example, we have considered the critical importance of the national security purposes of the Ministry of Defence Estate.

Figure 4: The approximate percentages of England's total agricultural land area that our analysis shows may need to change in use or management by 2050[12].

Category 1 – Land management change Changes in the way the land is farmed, without introducing new habitats or planting trees. It falls outside of the scope of land use change discussed in this document. *Examples: Planting cover crops to reduce soil loss, or reducing fertiliser use to prevent water pollution.*	**Not in scope**
Category 2 – Small changes maintaining the same agricultural land use Introducing nature within fields, in margins and / or small portions, providing environmental and climate benefits alongside food production. *Examples: Arable field margins, riparian features such as river buffer strips.*	**1%** (50kha)
Category 3.1 – Changes in agricultural land use, for both food and environmental / climate benefits This is mainly about incorporating more trees alongside food production.	**4%** (370kha)
Category 3.2 – Changes in agricultural land use, mainly for environmental and climate benefits with limited food production. The land is being farmed mainly for other benefits than food. *Examples: Creation / restoration of species-rich grassland habitats; responsible management of peat; planting of short rotation coppice.*	**5%** (430kha)
Category 4 - Change away from agricultural land, for environmental and climate benefits. Land use becomes non-agricultural. Land is fully dedicated to delivering environmental and climate benefits. *Examples: Restoration and maintenance of peat-forming and peat-dependent habitats; creation of woodland; creation / restoration of coastal and lowland heathland habitats.*	**9%** (760kha)

[12] See Table 3 in the Analytical Annex for a description of the changes to land management (category 1) which are not summarised here.

The Government is committed to maintaining food production. Our assessment is that, based on historical trends of productivity improvement, and supported by new and emerging innovations, the impact of these land use changes on domestic food production will be offset by productivity improvements[13]. We expect that recent trends of increased productivity from agricultural land will continue. Working in partnership, Government will put in place a policy environment to support those changes.

The scale of land use change required to deliver 1.5 million new homes is relatively small: around 30 thousand hectares (0.2%) by the end of the Parliament[14] and around 150 thousand hectares (1.1%) if housebuilding were continued at the same rate to 2050[15]. The Land Use Framework will be informed by the additional spatial analysis and public consultation required to determine suitable locations for new homes and infrastructure.

Delivering new infrastructure will also require changes to English land use. These are also relatively small overall; the land area taken by all key utilities across England in 2022, including solar and wind farms, power stations, water works, gas works, and refuse disposal places, covered just 0.2% of land[16]. We can build the homes and infrastructure we need while meeting our wider objectives such as food security and environmental targets to 2050. Though small in comparison to wider land uses, the cumulative footprint of infrastructure and housing delivery in the longer term justifies reducing trade-offs between land uses today. This includes continuing to reflect the agricultural potential of land in spatial planning.

Figure 5 shows how the changes outlined in Figure 4 and delivering new homes may change total land uses in England from today, through 2035 to 2050. The Analytical Annex provides more details of the assumptions and uncertainties reflected in this analysis. We will continue to refine this analysis as we improve the underpinning data and hear feedback through this consultation and wider engagement. Our intention is not for any analysis to prescribe changes, only for it to support understanding of how different changes at local and regional levels can add up to outcomes such as food production and nature restoration at the national level.

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[13] See Section 4.5 of the Analytical Annex for more detail on productivity trends.

[14] This estimate assumes the same split of new homes between new build completions, conversions and change of use as for recent years. Details of this calculation and more information on the demand for land for infrastructure, housing and other development are available in section 2.2 of the Analytical Annex.

[15] This figure is based on the expected growth in households to 2050 as a proportion of the existing urban land area and should be understood as an order of magnitude rather than a precise calculation.

[16] 2022 figures: https://www.gov.uk/government/statistics/land-use-in-england-2022

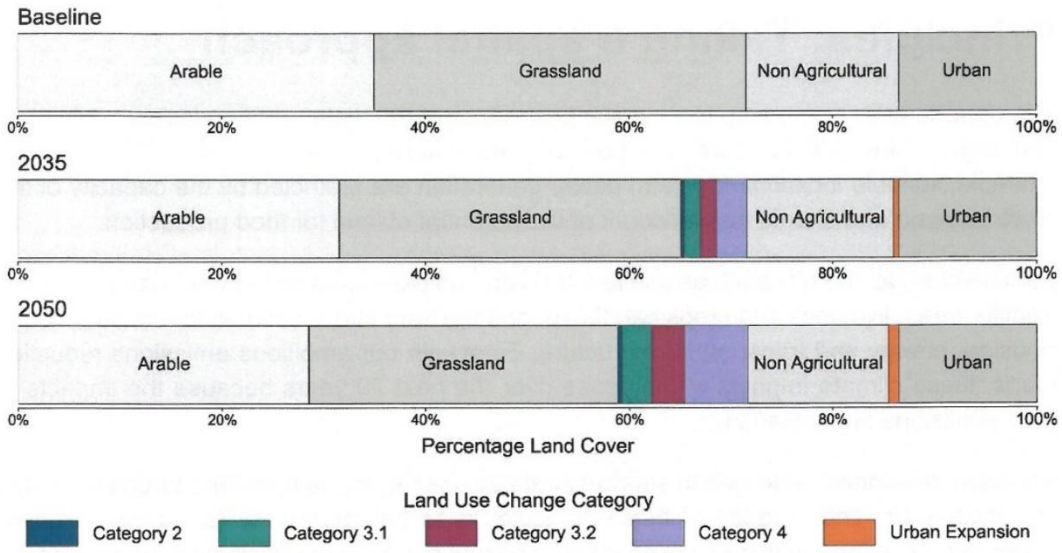

Figure 5: Estimated type and extent of land use changes needed to 2035 and 2050. Categories of land use change are defined in Figure 4 and the Analytical Annex[17].

QUESTION 1: To what extent do you agree or disagree with our assessment of the scale and type of land use change needed, as set out in this consultation and the Analytical Annex?

[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / I don't know]

Please explain your response, including your views on the potential scale of change and the type of change needed, including any specific types of change.

[17] Note that the baseline differs slightly from the official statistics. Please refer to Section 3.2 of the Analytical Annex for assumptions and uncertainties.

Principles: Taking a spatial approach

The opportunities to produce food, make space for nature, water, and emissions reduction, and deliver new infrastructure and housing, are different in every part of England. For example, suitable locations for clean power generation are restricted by the capacity of the electricity grid and should take account of the potential of land for food production.

Climate change impacts such as sea levels rising and extreme weather are changing where wildlife, trees, livestock and crops can thrive, and the land that is suitable for construction of housing, energy and transport infrastructure. Even with our ambitious emissions reduction plans, these climate impacts will increase over the next 20 years because the impacts of past emissions are locked in.

We have developed principles to support strategic spatial planning and the targeting of land use incentives. The purpose of these principles is to transform how Government makes policy and the information we provide to decision makers. For the principles to be meaningful they need to be integrated into decision making processes and supported by data, decision support tools and resources. That is why we are seeking your views on the principles themselves and how they could be applied.

1. **Co-design:** Support for participation and leadership at the local and regional scale to develop and align spatial strategies and assess the fairness of changes in land use.
2. **Multifunctional land:** Enable multiple benefits on land, targeted according to opportunity, societal needs (such as the health benefits of co-locating new homes and nature), and environmental pressures (such as reducing pollution).
3. **Playing to the strengths of the land**[18]**:** Support and spatially target land use change to locations where benefits are greater and trade-offs are lower. Give priority to land uses that are more scarce or spatially sensitive (for example grid capacity places restrictions on new renewable generation sites or protecting land that is best suited for food production).
4. **Decisions fit for the long-term:** Take a long-term view of changing land suitability, prioritising resilience (including to the impacts of climate change). This could include planning for new homes that are resilient to climate impacts, such as flooding and overheating.
5. **Responsive by design:** Land use policy, including spatial prioritisation and targeting, needs to be responsive to new data, opportunities and pressures.

[18] Please refer to Section 4 of the Analytical Annex for background evidence to support taking a spatial approach

These principles will be updated after reviewing consultation responses, and applied to future policy on land use, for example, as part of the Food Strategy, Farming Roadmap, Industrial Strategy, long-term housing strategy, National Integrated Transport Strategy, Ten Year National Infrastructure Strategy, the Strategic Spatial Energy Plan, a revised Carbon Budget Delivery Plan, and the review of the Environmental Improvement Plan.

QUESTION 2: Do you agree or disagree with the land use principles proposed?

[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / I don't know]

Please provide any reasons for your response including any changes you believe should be made.

QUESTION 3: Beyond Government departments in England, which other decision makers do you think would benefit from applying these principles?

- **Combined and local authorities (including local planning authorities)**
- **Landowners and land managers (including environmental and heritage groups)**
- **Others (please specify)**

Making the best use of land

This Land Use Consultation takes a long-term view of English land use. We know that to achieve this vision we will need to radically improve the access that landowners, land managers and communities have to the resources needed to support long-term and spatial decision making. There are practical delivery challenges and opportunities faced by communities, businesses, developers, landowners and farmers today. This section aims to address these, drawing on our engagement and analysis, as well as insights from a range of previous publications on land use[19]. It proposes policy changes to address land use challenges under four themes: aligned incentives, joined-up decisions, accessible and high-quality data, and skills.

These proposals and questions are not intended to be comprehensive, and instead provide the starting point for an open process of policy co-creation.

1. Aligned incentives

Context

Most English land is in private ownership and land ownership in England is highly concentrated. Land management incentives and influences include public payments (for example, to farmers for environmental benefits), cultural and social influences, market signals from the wider food system and economy, private nature markets, guidance and advice, regulation, and tax reliefs. Investors, farmers and other businesses want certainty about how Government will act to align incentives and shape emerging markets to support the food, environment, infrastructure, economic and climate outcomes that the nation needs.

An increasing number of land managers are seeing that Environmental Land Management actions can support their businesses in adapting to more sustainable farming practices, changes in consumer demand, and changing weather conditions driven by climate change. Our Environmental Land Management schemes have helped farmers increase adoption of these. Alongside of which there is growing recognition that a much greater role for private nature markets[20] will be required to support businesses towards more sustainable models. Emerging nature markets are already offering additional incentives and Government has a role to play in shaping these emerging markets, including with clear standards, to enable them to scale up rapidly.

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[19] These include recent reports by the Royal Society and British Academy, the House of Lords Land Use in England Inquiry, and the Land Use for Net Zero, Nature and People Hub.

[20] Nature markets enable private investment in nature through creating units or credits that can be bought and sold. They allow businesses to invest with farmers and other land and coastal managers to enhance the ability of land, freshwater and marine habitats to provide carbon, biodiversity, clean water and other benefits.

Policy levers and enablers

Incentivising changes for long-term food security

The impacts of climate change and nature loss, from extreme weather events to declines in pollinator populations, are a significant risk to food production. We must reduce these risks, as well as supporting our food and farming system to become more resilient. Farming businesses that are able to plan and invest for the long term are the backbone of a resilient farming system and our food security. Farmers are rightfully asking for greater clarity on what is needed from the land. Being transparent on the level of change needed will provide those businesses with more information around which they can plan.

Farmers and land managers are already changing land use and management practices to adapt to more frequent and severe droughts and floods. These decisions are made at the farm level but need the right frameworks, incentives and conditions from Government and the wider food chain. Incentives will need to reflect the mix of land ownership structures, including tenancies, in farming and the wider food chain.

Incentives will also need to reflect the extent to which the benefits of land use change apply to those making the changes, or the wider public. Many land use and management changes for public benefits bring about costs to those managing the land. We want to work with the sector to develop a long-term sustainable plan for how these costs will be met. To achieve the right incentives and conditions, we will work in partnership with farmers to co-create our long-term Farming Roadmap.

Government will put the right incentives in place to support appropriate land use change. The design of these will need to consider the important role of domestic food production in our food security. Alongside land use change, agricultural yields will need to increase on some land. We will also need to ensure that the agricultural potential of land is fully considered in land use decisions taken outside the farming system so that less of our high-quality farmland is taken out of production. A broad range of approaches will be explored in our long-term Farming Roadmap, including proposals to help achieve increased agricultural yields, approaches to increase the uptake of regenerative agriculture[21] and multifunctional land uses and farming practices.

We are also developing, in partnership with the food sector, a Food Strategy which will bring together all aspects of the food system around four pillars of health, growth, environmental sustainability, and food security. This approach will ensure, alongside land use change, that

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[21] The term "regenerative agriculture" currently does not have a comprehensively described scientific definition, but it is widely acknowledged that regenerative agriculture proceeds from a foundation of promoting soil health. Source: Pettorelli et al. (2024) Prioritising Land Use in the Midst of a Climate and Nature Emergency - Ten Key Messages for Scientists, Civil Society, and Policy Makers. A report from the Zoological Society of London (ZSL) and the British Ecological Society (BES), London, UK

we achieve improved health outcomes, robust food security, growth in the food system, and a thriving natural environment.

QUESTION 4: What are the policies, incentives and other changes that are needed to support decision makers in the agricultural sector to deliver this scale of land use change, while considering the importance of food production?

In the next few decades, global land use will come under increasing pressure. Agricultural production will need to keep pace with the growing demand for food whilst reducing emissions. There are also new pressures such as demand for land for the production of feedstocks for biofuels and other forms of renewable energy.

The nature of global agricultural markets, where changing relative prices can incentivise processors and consumers to substitute one product for another, and farmers to switch land between different crops, means that land use decisions in different countries are interconnected through international trade. For example, if one country takes policy actions that either reduce domestic agricultural production or increase the consumption of agricultural products, then its agricultural imports will increase or exports decrease such that its net agricultural trade position will weaken. This will tend to encourage an expansion in agricultural production in other countries, possibly with significant negative environmental impacts.

The principles are intended to transform policy and incentives for land use change in England, protecting land with the greatest long-term potential for food production. This will help to reduce the risk of displacing food production and any associated environmental impacts abroad. Targeting land use incentives to the right locations will help achieve this and deliver better value for public spending by achieving greater benefits from the land use or management changes that are paid for.

Prioritising where changes should take place does, however, raise important questions of fairness. The more we prioritise food production by spatially targeting incentives, the more that changes may become concentrated in less agriculturally productive landscapes. While this could bring new economic opportunities to these rural communities, over the next 25 years we are likely to see wider social changes as well. We want to assess where these long-term changes are likely to be most significant so that we can co-create a fair and managed transition, and support people to take advantage of emerging opportunities. Our proposed approach to spatial prioritisation of outcomes and the spatial targeting of financial incentives for land use change will be set out in the Farming Roadmap and will take responses to this consultation into account.

QUESTION 5: How could Government support more land managers to implement multifunctional land uses that deliver a wider range of benefits, such as agroforestry systems with trees within pasture or arable fields?

QUESTION 6: What should the Government consider in identifying suitable locations for spatially targeted incentives?

QUESTION 7: What approach(es) could most effectively support land managers and the agricultural sector to steer land use changes to where they can deliver greater potential benefits and lower trade-offs?

QUESTION 8: In addition to promoting multifunctional land uses and spatially targeting land use change incentives, what more could be done by Government or others to reduce the risk that we displace more food production and environmental impacts abroad? Please give details for your answer.

Monitoring land use change or production on agricultural land

Accounting for displaced food production impacts in project appraisals

Protecting the best agricultural land from permanent land use changes

Other (please specify)

Increasing private investment into nature-based solutions

The scale of action needed to deliver our climate and nature objectives means that more private investment in land use change will be needed. We know that healthy ecosystems provide many private as well as public benefits, and the private sector can contribute to protecting and improving natural capital assets.

In addition to existing mechanisms such as Biodiversity Net Gain, the Woodland Carbon Code and the Peatland Code, there is an opportunity to explore additional action that can drive innovation, efficiency, and private investment into nature. We are already taking action. The Planning and Infrastructure Bill will legislate for a Nature Restoration Fund to streamline certain environmental obligations on development and fund strategic nature recovery measures. The Terms of Reference for the independent commission on the water sector regulatory system set out that it will consider how to enable greater use of nature-based solutions in the context of strategic planning for water, where these represent good value for money. We will publish a call for evidence on further opportunities to increase private investment into nature from economic sectors who impact upon or benefit from our shared natural capital.

QUESTION 9: What should Government consider in increasing private investment towards appropriate land use changes?

Making space for nature

The Government is committed to effectively conserving and managing 30% of the UK's land by 2030 (30by30) to support delivery of the Environment Act biodiversity targets[22], including those to halt and reverse declines in species abundance. While significant areas of England have potential to meet the 30by30 criteria, driving forward progress on 30by30 requires further action to ensure more land is under effective, long-term management for nature (see section 2 of the Analytical Annex). We are developing a delivery strategy to accelerate progress towards 30by30 both inside and outside Protected Landscapes, and will publish it later this year.

Our Protected Landscapes (National Parks and National Landscapes) cover nearly a quarter of England's land area and include half of our priority habitats and Sites of Special Scientific Interest (SSSIs). They are also working landscapes reflecting generations of farming systems. Protected Landscapes are key to our biodiversity commitments and this Government has committed to make them greener, wilder and more accessible while recognising their culture and heritage. We are developing a package of measures to ensure they are able to deliver the objectives for nature, water, rural housing and climate in the Land Use Framework.

QUESTION 10: What changes are needed to accelerate 30by30 delivery, including by enabling Protected Landscapes to contribute more? Please provide any specific suggestions.

- **Strengthened Protected Landscapes legislation (around governance and regulations or duties on key actors) with a greater focus on nature**
- **Tools: such as greater alignment of existing Defra schemes with the 30by30 criteria[23]**
- **Resources: such as funding or guidance for those managing Protected Landscapes for nature**
- **Other (please specify)**

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[22] Our legally binding Environment Act targets, which include halting the decline in species abundance by 2030, and restoring or creating more than 500,000 hectares of wildlife-rich habitat by 2042. See Annex 1 for more details.

[23] 30by30 on land in England: confirmed criteria and next steps: https://www.gov.uk/government/publications/criteria-for-30by30-on-land-in-england/30by30-on-land-in-england-confirmed-criteria-and-next-steps

Bringing nature closer to communities

The Government will deliver 1.5 million new homes in the right places, supporting our towns and cities to grow. These new homes need to be near to businesses, employment opportunities, and connected to nature and critical infrastructure.

Adapting to climate change and making room for nature will require efforts to introduce connected networks of green infrastructure into our villages, towns and cities. And there is evidence that exposure to green space is associated with improved well-being and health outcomes. New developments are incorporating green infrastructure such as sustainable drainage, and many citizens are choosing to plant trees, grow food or make room for wildlife in their gardens. Areas of public land not suitable for housing or other development[24], recreational land[25], and areas of the green belt could go further in following these examples and deliver a greater range of benefits like providing shade, connecting green spaces and reducing flood risk.

This would be guided by the Green Infrastructure Framework and might mean remediating derelict brownfield sites for development, reducing areas of impermeable paving, or adding features like orchards or habitats to existing parks and green spaces. The revised National Planning Policy Framework (NPPF)[26] has introduced golden rules for major development on released green belt land which require the provision of new, or improvements to existing, green spaces that are accessible to the public.

QUESTION 11: What approaches could cost-effectively support nature and food production in urban landscapes and on land managed for recreation?

The Government recognises the importance of increasing responsible access to the outdoors for people's health and wellbeing and is working to ensure this is safe and appropriate. Part of this includes our manifesto commitments to create nine new national river walks and three new national forests in England, expanding access to the great outdoors.

We intend to support access to green and blue spaces in urban and rural environments, and green routes for active travel to and through these spaces. We will make further announcements on plans to develop policy on access to nature in due course.

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[24] https://www.gov.uk/government/news/planning-overhaul-to-reach-15-million-new-homes

[25] Such as sports fields, golf courses, shoots, horse paddocks and racecourses

[26] See paragraphs 156c and 157 National Planning Policy Framework - GOV.UK

Empowering local people to bring community spaces back into community ownership

Community spaces have a significant role to play in developing social networks, encouraging community participation, and promoting civic pride. The Assets of Community Value scheme in England currently provides communities with a route to nominate any building or land which furthers the social wellbeing and interest of the community. Communities then have a right to bid on these assets if their owner puts them up for sale.

Through the English Devolution Bill, we will introduce a strong new 'right to buy' for valued community assets, such as empty shops, pubs and community spaces. Community Right to Buy will help local people acquire valued community spaces if they come up for sale, keeping these assets in the hands of the community. More details will be announced in due course.

2. Joined-up decisions on land use change

Context

The Town and Country Planning System and the Nationally Significant Infrastructure Project (NSIP) planning regimes include the key legislative and policy frameworks that steer the associated land use change from housing, transport, energy generation, and other infrastructure. Improving the data and coordination between environmental planning and development planning will help developers and planners to minimise negative impacts on natural capital. There is, however, little formal guidance, information, or structure to support land managers' decisions on competing land use demands outside the planning system.

Feedback from land managers and developers suggests that their businesses need a more joined-up, strategic approach to land use strategy and planning at a local level, linked to regional and national priorities. This is necessary to avoid siloed land use decision-making and to mitigate the risk of unintended consequences or unanticipated costs. For example, more connected strategies could help guide development decisions towards less biodiverse sites that result in quicker development, and proposals or incentives for nature restoration to land with less potential to produce food.

Policy levers and enablers

Strategic spatial planning for development and infrastructure

Optimising how we use England's land will be essential to delivering the Government's Growth mission and the Clean Energy Superpower mission (including the accelerating to net zero pillar). By strengthening housing targets and allowing development on poor quality land, we will deliver 1.5 million homes over this Parliament and ensure enough houses are

built for the needs of the population over the coming decades. The Government has set out that it will introduce a universal system of strategic planning throughout England in the forms of Spatial Development Strategies (SDS). These SDSs will be produced during this Parliament by combined authorities and partnerships of county councils and unitary authorities for areas where there is no devolved authority. SDSs will set the overarching spatial strategy for local plans.

We need to build new homes and clean energy, water infrastructure and transport infrastructure at scale and at pace. Both new and existing homes and infrastructure will need landscapes that reduce their climate change risks, for example by making more space for water upstream and reducing the impact of floods. Ensuring that plans for delivery consider wider land use outcomes and identifying priority areas for growth will be essential for a pro-growth, pro-infrastructure planning system.

The largest expansion of the power grid since the creation of the National Grid, to connect homes and businesses to new sources of clean energy, is a small but important additional source of demand on land. Delivering 1.5 million homes and the next generation of new towns, supported by enhanced transport and civic infrastructure, will also place demands on land. These will be relatively small overall, but with high and often concentrated impacts.

To align the rapid deployment of energy infrastructure with wider land use objectives, the UK, Scottish and Welsh Governments have jointly commissioned the National Energy System Operator to create a Strategic Spatial Energy Plan (SSEP). Throughout its development, the SSEP will consider wider demands on land and sea, including food production, transport, water supply, nature recovery and fisheries. Outputs of the Land Use Framework, including the principles and analysis underpinning it, will support development of the SSEP. This will ensure that the land with the greatest long-term potential for food production is better protected.

Development and wider land uses are intrinsically linked to the water catchments they impact and depend upon. The Government's Independent Commission on the Water Sector Regulatory System will make recommendations to ensure there is a strategic spatial planning approach to the management of water across sectors of the economy, tackling pollution and managing pressures on the water environment and supply at a catchment, regional and national scale.

QUESTION 12: How can Government ensure that development and infrastructure spatial plans take advantage of potential co-benefits and manage trade-offs?

Understanding how spatial choices impact infrastructural considerations will be key to delivering on all Government missions. Different land uses have varying transport implications, as trip generation and travel patterns will change based on the activity in a particular place, requiring different levels of transport infrastructure. We are committed to delivering a transport system that works better for people across the country and enables growth and access to opportunities. Key to this is adopting a vision-led approach to identifying transport solutions that is better integrated into land use considerations and establishes well-designed, sustainable and popular places.

QUESTION 13: How can local authorities and Government better take account of land use opportunities in transport planning?

Connecting plans and strategies

We want there to be greater local and regional democratic accountability over land-use decision making, including spatial strategies for land at local and regional scales. This includes strengthening connections between national, regional and local plans for land.

We have heard that the range of locally led, land-related plans and strategies has sometimes led to a siloed or confusing picture of land use change. There are opportunities in joining them up and presenting land managers with a more consistent and structured view of what the greatest opportunities for their land are likely to be.

Local Nature Recovery Strategies (LNRSs[27]) are being developed across the country to prioritise actions and areas for environmental enhancements. LNRSs will also enable Local Plans to better reflect the needs of nature recovery by helping Local Planning Authorities determine which areas should be mapped and safeguarded. To help connect plans at different scales, Government will collate relevant data generated through LNRSs and our biodiversity targets monitoring programme, share it with local leaders, and use it in the evaluation and development of national policy.

QUESTION 14: How can Government support closer coordination across plans and strategies for different sectors and outcomes at the local and regional level?

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[27] Local Nature Recovery Strategies (LNRSs) are a new system of spatial strategies for nature recovery, currently in preparation across the country. The first LNRSs were published in 2024 with the remainder during 2025. It is required by law that LNRSs will be periodically reviewed and updated, taking stock of what has been delivered over the period so that priorities and actions can up updated as needed. The Land Use Framework will inform and assist this process after the first LNRSs are published.

Planning for climate resilient land use change

Even with our ambitious targets to reduce greenhouse gas emissions, it will still be necessary to adapt to climate change. Long-term, chronic impacts, such as average temperature change and sea level rise, and short-term acute impacts, like heatwaves, flooding and drought, will increasingly affect our communities, infrastructure, health, food security, water quality and nature.

To manage these impacts, we will need to adapt the way we currently manage land. That includes actions such as supporting wildlife to move to more suitable climates, helping farmers and growers to diversify the crops they grow and the farming methods they use, re-naturalising our water bodies and making space for water, and making spatial and long-term decisions about where and how we build homes and infrastructure that reduce risks from flooding.

Understanding climate adaptation plans of owners, managers and developers of land and infrastructure will enable us to support resilient land use change and support delivery of our National Adaptation Programme. We are therefore considering whether the Climate Change Act's Adaptation Reporting Power (ARP)[28] could be used to invite or require more organisations and major landowners to report in this process.

QUESTION 15: Would including additional major landowners and land managers in the Adaptation Reporting Power process (see above) support adaptation knowledge sharing? Please give any reasons or alternative suggestions

[Yes / No / I don't know]

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[28] For details, see Chapter 8 of *The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting*, available at https://assets.publishing.service.gov.uk/media/64ba74102059dc00125d27a7/The_Third_National_Adaptation_Programme.pdf

QUESTION 16: Below is a list of activities the Government could implement to support landowners, land managers, and communities to understand and prepare for the impacts of climate change. Please select the activities you think should be prioritised and give any reasons for your answer, or specific approaches you would like to see.

- **Providing better information on local climate impacts to inform local decision making and strategies** (for example, translating UK Climate Projections[29] into what these mean in terms of on-the-ground impacts on farming, buildings, communities and nature)
- **Providing improved tools and guidance for turning climate information into tangible actions** (for example, how to produce an adaptation plan for different sectors)
- **Developing and sharing clearer objectives and resilience standards** (for example, a clear picture and standards of good practice for each sector under a 2°C climate scenario[30])
- **Supporting the right actions in the right places in a changing climate** (for example, prioritising incentives for sustainable land uses where they will be most resilient to climate change)
- **Other (please specify)**

3. Accessible and high-quality data

Context

There is a wealth of data available on the natural capital of England's land, but it is sometimes inaccessible or unsuitable for practical use. Research into land's potential for different purposes can rarely be applied at the field or site level.

Consistent sharing and use of non-sensitive data and evidence is a key priority to support effective land use decisions. This will mean:

- improving the quality of data used at the field, site or street scale,
- making it more accessible, and
- enabling the tools required to better integrate it into decision making.

[29] Met Office UK Climate Projections: https://www.metoffice.gov.uk/research/approach/collaboration/ukcp

[30] The climate changes we will experience if there is 2°C of global average temperature increase above pre-industrial baselines by 2100.

Policy levers and enablers

Improving land use data

The geospatial data that exists for England is spread across a wide range of classifications, standards, metrics, and data languages. The Department for Science, Technology and Innovation's Land Use Data Improvement Project is a project with Ordnance Survey to assess spatial data for cross-cutting strategic land use policy priorities and test ways to improve interoperability for spatial data. Defra's Natural Capital and Ecosystem Assessment (NCEA) programme is improving access to high quality, interoperable data by conducting a comprehensive baseline survey of England's natural capital assets. This will be available under Open Government Licence[31]. We want to understand the key opportunities, from users of this data and those working with spatial data in the private sector, to make data more accessible to decision makers.

QUESTION 17: What changes to how Government's spatial data is presented or shared could increase its value in decision making and make it more accessible?

- **Updating existing Government tools, apps, portals or websites**
- **Changes to support use through private sector tools, apps or websites**
- **Bringing data from different sectors together into common portals or maps**
- **Increasing consistency across spatial and land datasets**
- **More explanation or support for using existing tools, apps or websites**
- **Greater use of geospatial indicators such as Unique Property Reference Numbers (UPRNs) and INSPIRE IDs to allow data to be more easily displayed on a map**
- **Other (please specify)**

QUESTION 18: What improvements could be made to how spatial data is captured, managed, or used to support land use decisions in the following sectors? Please give any reasons for your answer or specific suggestions.

- **Development and planning: such as environmental survey data**
- **Farming: such as supply chain data and carbon or nature baseline measurements**
- **Environment and forestry: such as local and volunteer-collected environmental records**
- **Recreation and access: such as accessible land and route data**
- **Government-published land and agricultural statistics**

[31] https://defraenvironment.blog.gov.uk/2024/03/28/mapping-our-natural-assets-the-natural-capital-and-ecosystem-assessment-programme/

Land use data's interaction with other datasets

Interactions between different datasets can also generate new insights for decision makers. Our ability to combine a broad range of datasets and apply the latest advances in spatial data science and analysis is critical to the Ten Year National Energy Plan, Strategic Spatial Energy Plan, and the delivery of our target for new homes. Government is developing a Connectivity Tool combining transport and land use data to generate a national measure of connectivity for any location in England and Wales. This Connectivity score measures people's ability to get where they want to go – using walking, cycling and public transport to reach jobs, shops and essential services. It also allows users to input new public transport routes and gauge the effect these would have on an area's connectivity.

Understanding land's capability

For food production to be properly valued in land use decisions, we need to know where the land with the greatest potential for food production is. The Agricultural Land Classification (ALC) system provides a valuable tool for assessing the suitability of land for agricultural use, particularly in development planning decisions. However, the ALC maps are outdated, not at a scale suitable for the assessment of individual fields or sites and not suited to changing land suitability as a result of climate change. To ensure that the ALC system supports effective land use planning decisions, Government is considering:

- Updating the ALC system, including the underlying data and methodologies, to ensure that land quality data is accurate and comprehensive.
- Enhancing the availability and accessibility of ALC data, including through improved mapping and databases.
- Improving guidance on ALC surveys and the use of ALC grades in local planning policies.

QUESTION 19: What improvements are needed to the quality, availability and accessibility of ALC data to support effective land use decisions?

Reducing data costs where it benefits the public or economy

The public sector holds and maintains many authoritative datasets. Some of the data produced is freely available, and some incurs a cost to users. For example:

- HM Land Registry keeps the definitive record of land ownership in England and Wales but charges fees for access to certain information.
- Ordnance Survey provide vital data sources to inform land use decisions and guide recreational users, but some data sets incur a cost to commercial users above a certain transactional threshold.

We want to move towards a system where data is more widely accessible for the public benefit, whilst considering these organisations' current operational and funding models.

For HM Land Registry, we want to do this by making more data free to access, with plans to change the structure of their fees. This includes reviewing whether they are aligned with the Government's strategic ambitions, how they can be made less complex and fairer for customers, and lower barriers to accessing data. These proposals will explore options to increase transparency of land and property data to support innovation and enable citizen participation in co-design of land use policy.

QUESTION 20: Which sources of spatial data should Government consider making free or easier to access, including via open licensing, to increase their potential benefit?

4. The right skills in the right places

Context

A fair land use transition that underpins long-term economic growth cannot be delivered without a secure, skilled workforce. We have heard through workshops across England that communities in the regions with significant potential economic opportunities through land use change often lack access to the skills and resources that would be needed to deliver it. This risks missing opportunities for economic growth, addressing regional inequalities and delivering nature recovery and climate change policies.

Policy levers and enablers

Supporting land managers with new skills for changing land uses

Land management encompasses a wide range of skills, from farming and ecology to helicopter piloting for peat restoration projects. Defra will engage with skills organisations, including Skills England, to ensure a common understanding of the scale and pace of change required.

Defra will continue to work in partnerships with established industry providers to upskill and certify farming advice. A new professional body, The Institute for Agriculture and Horticulture (TIAH), is reducing fragmentation in the existing learning landscape, driving greater skills uptake.

Consistency will also be needed across the farming advice sector over land use change and productivity. We want to enable the alignment of farm plans with local and national priorities and will consider how to achieve this through trusted advisors, guidance and services.

QUESTION 21: What gaps in land management capacity or skills do you anticipate as part of the land use transition? Please include any suggestions to address these gaps.

- **Development and planning**
- **Farming**
- **Environment and forestry**
- **Recreation and access**
- **Other (please specify)**

Accelerating sharing of best practice and evidence

Defra is working alongside the Agriculture and Horticulture Development Board (AHDB), research institutes and the new UK Agri-Tech Centre to accelerate adoption of new technologies and land management practices by sharing knowledge and best practice.

The two-way knowledge transfer between the research community and practitioners is invaluable, for example in the development of best practice around regenerative farming in a local context. There is, however, a perception that the skills, resources and evidence base are lagging behind the findings of innovative farmers and land managers. There is, therefore, an opportunity to ensure that all farmers and land managers can benefit from the skills, resources, innovation and technology best practice provided through academia, industry leaders and Government.

QUESTION 22: How could the sharing of best practice in innovative land use practices and management be improved?

Sharing lessons from nature restoration and climate adaptation practice

One way in which we will look to test, trial or seek feedback on practical approaches is through convening a new group of major public, private and third sector landowners in England. This group, working with Defra, will support delivery of the terrestrial Environment Act targets and related nature recovery, such as 30by30, through action on their estates[32]. One of the roles of this group will be to consider how reporting on climate mitigation and adaptation can help share good practice.

[32] This will include producing land management plans for their estates; piloting and testing approaches to land use management, change, or investment; reporting and sharing best practice on progress; and will include support and like-minded action from Defra and wider government departments.

Co-creation and engagement on a Land Use Framework: next steps

This consultation and the Land Use Framework that will follow will be the start of a conversation about how we use land. This section describes how the Government will support this conversation with those delivering, or affected by, land use change, including communities, businesses, developers, landowners and farmers.

Our plan for policy co-creation

We want to understand what our proposed principles mean for your area, and how we can improve them. We also want to involve you in developing the policy levers that will enable a fair land use transition.

We will do that by running workshops in six different regions in England. The workshops will run during the 12 weeks of consultation, in February and March. We will also run Minister-led roundtables with key stakeholder groups. The insights and feedback we gather through these events will feed into both the Land Use Framework and the farming system roadmap.

The Land Use Framework to be published in 2025 will take account of the combined contributions from the online consultation, workshops and roundtables. We want to continue the conversation even after the Land Use Framework is published and are considering options for how the Framework could be reviewed or updated over time. This would allow new information such as progress against targets, updated analysis and new agricultural innovation into account. In Scotland, a Land Use Strategy is produced every five years.

QUESTION 23: Should a Land Use Framework for England be updated periodically, and if so, how frequently should this occur?

- **Yes, every 5 years**
- **Yes, every 3 years**
- **Yes, another frequency or approach. Please provide details.**
- **No**
- **I don't know**

Making Government effective in policy co-creation

For this process to be meaningful, we know that Government will need to speak with one voice on land use and clarify how its different policy objectives interact spatially. Implementing the principles in this consultation (page 18) would support this, but broader changes to how the Government coordinates land-related policies across departments may also be required. Government will consider how best to co-ordinate and provide:

- A strategic oversight function to ensure the right information and policy is in place to enable delivery against a long-term land use vision;
- A cross-governmental spatial analysis function to produce evidence-based advice on strategic implications across different demands on land;
- Processes to embed land use considerations in strategic Government decisions;
- Open policy-making processes in collaboration with research organisations.

QUESTION 24: To what extent do you agree or disagree with the proposed areas above? Please include comments or suggestions with your answer.

[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / I don't know]

Appendix KCC2
Natural England's Technical Information Note TIN049

Natural England Technical Information Note TIN049

Agricultural Land Classification: protecting the best and most versatile agricultural land

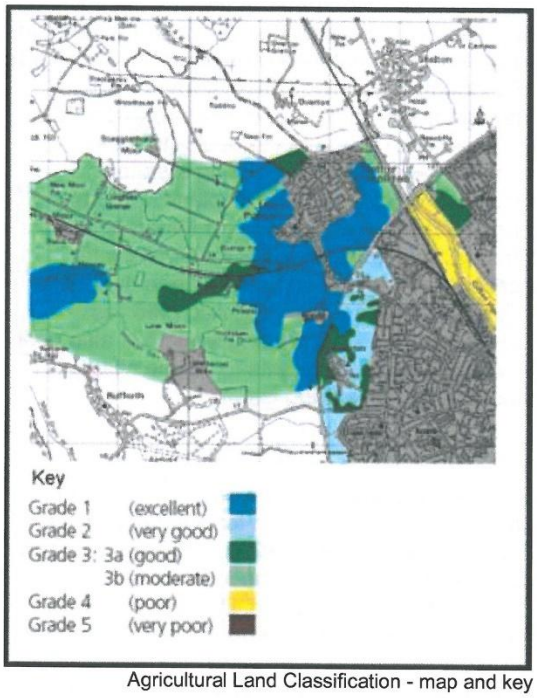
Most of our land area is in agricultural use. How this important natural resource is used is vital to sustainable development. This includes taking the right decisions about protecting it from inappropriate development.

Policy to protect agricultural land

Government policy for England is set out in the National Planning Policy Framework (NPPF) published in March 2012 (paragraph 112). Decisions rest with the relevant planning authorities who should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of higher quality. The Government has also re-affirmed the importance of protecting our soils and the services they provide in the Natural Environment White Paper The Natural Choice:securing the value of nature (June 2011), including the protection of best and most versatile agricultural land (paragraph 2.35).

The ALC system: purpose & uses

Land quality varies from place to place. The Agricultural Land Classification (ALC) provides a method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system. It helps underpin the principles of sustainable development.



Agricultural Land Classification - map and key

Second edition 19 December 2012
www.naturalengland.org.uk

NATURAL ENGLAND

Agricultural Land Classification: protecting the best and most versatile agricultural land

The ALC system classifies land into five grades, with Grade 3 subdivided into Subgrades 3a and 3b. The best and most versatile land is defined as Grades 1, 2 and 3a by policy guidance (see Annex 2 of NPPF). This is the land which is most flexible, productive and efficient in response to inputs and which can best deliver future crops for food and non food uses such as biomass, fibres and pharmaceuticals. Current estimates are that Grades 1 and 2 together form about 21% of all farmland in England; Subgrade 3a also covers about 21%.

The ALC system is used by Natural England and others to give advice to planning authorities, developers and the public if development is proposed on agricultural land or other greenfield sites that could potentially grow crops. The Town and Country Planning (Development Management Procedure) (England) Order 2010 (as amended) refers to the best and most versatile land policy in requiring statutory consultations with Natural England. Natural England is also responsible for Minerals and Waste Consultations where reclamation to agriculture is proposed under Schedule 5 of the Town and Country Planning Act 1990 (as amended). The ALC grading system is also used by commercial consultants to advise clients on land uses and planning issues.

Criteria and guidelines

The Classification is based on the long term physical limitations of land for agricultural use. Factors affecting the grade are climate, site and soil characteristics, and the important interactions between them. Detailed guidance for classifying land can be found in: *Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988):

- **Climate:** temperature and rainfall, aspect, exposure and frost risk.
- **Site:** gradient, micro-relief and flood risk.
- **Soil:** texture, structure, depth and stoniness, chemical properties which cannot be corrected.

The combination of climate and soil factors determines soil wetness and droughtiness. Wetness and droughtiness influence the choice of crops grown and the level and consistency of yields, as well as use of land for grazing livestock. The Classification is concerned with the inherent potential of land under a range of farming systems. The current agricultural use, or intensity of use, does not affect the ALC grade.

Versatility and yield

The physical limitations of land have four main effects on the way land is farmed. These are:

- the range of crops which can be grown;
- the level of yield;
- the consistency of yield; and
- the cost of obtaining the crop.

The ALC gives a high grading to land which allows more flexibility in the range of crops that can be grown (its 'versatility') and which requires lower inputs, but also takes into account ability to produce consistently high yields of a narrower range of crops.

Availability of ALC information

After the introduction of the ALC system in 1966 the whole of England and Wales was mapped from reconnaissance field surveys, to provide general strategic guidance on land quality for planners. This Provisional Series of maps was published on an Ordnance Survey base at a scale of One Inch to One Mile in the period 1967 to 1974. These maps are not sufficiently accurate for use in assessment of individual fields or development sites, and should not be used other than as general guidance. They show only five grades: their preparation preceded the subdivision of Grade 3 and the refinement of criteria, which occurred after 1976. They have not been updated and are out of print. A 1:250 000 scale map series based on the same information is available. These are more appropriate for the strategic use originally intended and can be downloaded from the Natural England **website**. This data is also available on 'Magic', an interactive, geographical information website **http://magic.defra.gov.uk/**.

Since 1976, selected areas have been re-surveyed in greater detail and to revised

guidelines and criteria. Information based on detailed ALC field surveys in accordance with current guidelines (MAFF, 1988) is the most definitive source. Data from the former Ministry of Agriculture, Fisheries and Food (MAFF) archive of more detailed ALC survey information (from 1988) is also available on **http://magic.defra.gov.uk/**. Revisions to the ALC guidelines and criteria have been limited and kept to the original principles, but some assessments made prior to the most recent revision in 1988 need to be checked against current criteria. More recently, strategic scale maps showing the likely occurrence of best and most versatile land have been prepared. Mapped information of all types is available from Natural England (see *Further information* below).

New field survey

Digital mapping and geographical information systems have been introduced to facilitate the provision of up-to-date information. ALC surveys are undertaken, according to the published Guidelines, by field surveyors using handheld augers to examine soils to a depth of 1.2 metres, at a frequency of one boring per hectare for a detailed assessment. This is usually supplemented by digging occasional small pits (usually by hand) to inspect the soil profile. Information obtained by these methods is combined with climatic and other data to produce an ALC map and report. 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

There is no comprehensive programme to survey all areas in detail. Private consultants may survey land where it is under consideration for development, especially around the edge of towns, to allow comparisons between areas and to inform environmental assessments. ALC field surveys are usually time consuming and should be initiated well in advance of planning decisions. Planning authorities should ensure that sufficient detailed site specific ALC survey data is available to inform decision making.

Consultations

Natural England is consulted by planning authorities on the preparation of all development plans as part of its remit for the natural environment. For planning applications, specific consultations with Natural England are required under the Development Management Procedure Order in relation to best and most versatile agricultural land. These are for non agricultural development proposals that are not consistent with an adopted local plan and involve the loss of twenty hectares or more of the best and most versatile land. The land protection policy is relevant to all planning applications, including those on smaller areas, but it is for the planning authority to decide how significant the agricultural land issues are, and the need for field information. The planning authority may contact Natural England if it needs technical information or advice.

Consultations with Natural England are required on all applications for mineral working or waste disposal if the proposed afteruse is for agriculture or where the loss of best and most versatile agricultural land agricultural land will be 20 ha or more. Non-agricultural afteruse, for example for nature conservation or amenity, can be acceptable even on better quality land if soil resources are conserved and the long term potential of best and most versatile land is safeguarded by careful land restoration and aftercare.

Other factors

The ALC is a basis for assessing how development proposals affect agricultural land within the planning system, but it is not the sole consideration. Planning authorities are guided by the National Planning Policy Framework to protect and enhance soils more widely. This could include, for example, conserving soil resources during mineral working or construction, not granting permission for peat extraction from new or extended mineral sites, or preventing soil from being adversely affected by pollution. For information on the application of ALC in Wales, please see below.

Further information

Details of the system of grading can be found in: *Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

Please note that planning authorities should send all planning related consultations and enquiries to Natural England by e-mail to **consultations@naturalengland.org.uk**. If it is not possible to consult us electronically then consultations should be sent to the following postal address:

Natural England
Consultation Service
Hornbeam House
Electra Way
Crewe Business Park
CREWE
Cheshire
CW1 6GJ

ALC information for Wales is held by Welsh Government. Detailed information and advice is available on request from Ian Rugg [redacted]

possible to consult us electronically then consultations should be sent to the following postal address:

Welsh Government
Rhodfa Padarn
Llanbadarn Fawr
Aberystwyth
Ceredigion
SY23 3UR

Natural England publications are available to download from the Natural England website: [redacted]

For further information contact the Natural England Enquiry Service on 0300 060 0863 or e-mail **enquiries@naturalengland.org.uk**.

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Appendix KCC3
Extract from MAFF ALC Methodology

Ministry of Agriculture, Fisheries and Food

Agricultural Land Classification

of

England and Wales

Revised guidelines and criteria for grading the quality of agricultural land

OCTOBER 1988

PREFACE

This report provides revised guidelines and criteria for grading the quality of agricultural land using the Agricultural Land Classification (ALC) of England and Wales. The ALC was devised and introduced in the 1960s and Technical Report 11 (MAFF, 1966) outlined the national system, which forms the basis for advice given by the Ministry of Agriculture, Fisheries and Food (MAFF) and Welsh Office Agriculture Department (WOAD) on land use planning matters. Following a review of the system, criteria for the sub-division of Grade 3 were published in Technical Report 11/1 (MAFF, 1976). The classification is well established and understood in the planning system and provides an appropriate framework for determining the physical quality of the land at national, regional and local levels.

Experience gained has shown that some modifications to the ALC system can usefully be made to take advantage of new knowledge and data, to improve the objectivity and consistency of assessments and standardise terminology. The revised guidelines and criteria in this report have been developed and tested with the aim of updating the system without changing the original concepts. A further aim has been to calibrate the revised criteria with those used previously to maintain as far as possible the consistency of grading. The guidelines and methods used to define grades and subgrades are based on the best and most up to date information available but future revisions may be necessary to accommodate new information and technical innovation.

There is a continuing need to distinguish between the better land in Grade 3 and other land in this Grade but it is no longer considered necessary to maintain a threefold division. Two subgrades are now recognised: Subgrade 3a and Subgrade 3b, the latter being a combination of the previous Subgrades 3b and 3c.

Technical Report 11 included proposals for the development of an economic classification system linked to the physical classification. It also identified a number of significant disadvantages for a national system of economic classification, especially the problems associated with the acquisition of objective, up to date, accurate and consistent farm output data. No satisfactory means have been found of overcoming these problems and for this reason economic criteria for grading land have not been adopted. Similarly site specific crop yield data are not regarded as a reliable indication of land quality, because it is not possible to consistently make allowances for variables such as management skill, different levels of input and short-term weather factors.

The principal changes in this revision concern the criteria used to assess climatic limitations and the main limitations involving a climate-soil interaction, namely soil wetness and droughtiness. The revised methods have been developed and evaluated by the Agricultural Development and Advisory Service (ADAS) in close collaboration with the Soil Survey and Land Research Centre (SSLRC, incorporating the Soil Survey of England and Wales) and the Meteorological Office. A number of new and improved climatic datasets have been compiled on the same collaborative basis and these base data are held in LandIS, a computer information system funded by MAFF and developed by SSLRC. The datasets will also be published by the Meteorological Office (in press) and are described in Appendix 1.

The revised system incorporates some features of the 7-class Land Use Capability Classification formerly used by the Soil Survey of England and Wales (Bibby and Mackney, 1969) in which Classes 5, 6 and 7 broadly correspond to Grade 5 of the ALC system. In common with the Scottish Land Capability Classification for Agriculture (Bibby et al, 1982) some of the concepts now introduced originated from the ADAS Land Capability Working Party which met between 1974 and 1981. Although there are similarities with the Scottish system, the Agricultural Land Classification has been developed and calibrated specifically for use in England and Wales. This report describes the criteria and assessment methods which will be used by MAFF and WOAD to classify land. Wherever possible, definitions and methods common to both ADAS and SSLRC have been used.

Acknowledgements

The Ministry is indebted to the Meteorological Office and Soil Survey and Land Research Centre for their assistance, information and advice provided over a period of years. The climate-related components of the system were revised by a working group chaired by A J Hooper (ADAS) and the contributions of J H Minhinick and J F Keers (Meteorological Office), Dr R J A Jones and J M Hollis (SSLRC), D Hewgill, M R Watson and Dr I P Jones (ADAS) are gratefully acknowledged. Valuable assistance was also provided by F Broughton (ADAS). Evaluations and testing of the revised criteria were co-ordinated by M R Watson and carried out by regional staff of the Resource Planning Group, ADAS.

Ministry of Agriculture, Fisheries and Food
October 1988

SECTION 1

INTRODUCTION

The Agricultural Land Classification provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principal ways: they may affect the range of crops which can be grown, the level of yield, the consistency of yield and the cost of obtaining it. The classification system gives considerable weight to flexibility of cropping, whether actual or potential, but the ability of some land to produce consistently high yields of a somewhat narrower range of crops is also taken into account.

The principal physical factors influencing agricultural production are climate, site and soil. These factors together with interactions between them form the basis for classifying land into one of five grades; Grade 1 land being of excellent quality and Grade 5 land of very poor quality. Grade 3, which constitutes about half of the agricultural land in England and Wales, is now divided into two subgrades designated 3a and 3b. General descriptions of the grades and subgrades are given in Section 2.

Guidelines for the assessment of the physical factors which determine the grade of land are given in Section 3. The main climatic factors are temperature and rainfall although account is taken of exposure, aspect and frost risk. The site factors used in the classification system are gradient, microrelief and flood risk. Soil characteristics of particular importance are texture, structure, depth and stoniness. In some situations, chemical properties can also influence the long-term potential of land and are taken into account. These climatic, site and soil factors result in varying degrees of constraint on agricultural production. They can act either separately or in combination, the most important interactive limitations being soil wetness and droughtiness.

The grade or subgrade of land is determined by the most limiting factor present. When classifying land the overall climate and site limitations should be considered first as these can have an overriding influence on the grade. Land is graded and mapped without regard to present field boundaries, except where they coincide with permanent physical features.

A degree of variability in physical characteristics within a discrete area is to be expected. If the area includes a small proportion of land of different quality, the variability can be considered as a function of the mapping scale. Thus, small, discrete areas of a different ALC grade may be identified on large scale maps, whereas on smaller scale maps it may only be feasible to show the predominant grade. However, where soil and site conditions vary significantly and repeatedly over short distances and impose a practical constraint on cropping and land management a 'pattern' limitation is said to exist. This variability becomes a significant limitation if, for example, soils of the same grade but of contrasting texture occur as an extensive patchwork thus complicating soil management and cropping decisions or resulting in uneven crop growth, maturation or quality. Similarly, a form of pattern limitation may arise where soil depth is highly variable or microrelief restricts the use of machinery. Because many different combinations of characteristics can occur no specific guidelines are given for pattern limitations. The effect on grading is judged according

to the severity of the limitations imposed by the pattern on cropping and management, and is mapped where permitted by the scale of the survey.

The guidelines provide a consistent basis for land classification but, given the complex and variable nature of the factors assessed and the wide range of circumstances in which they can occur, it is not possible to prescribe for every possible situation. It may sometimes be necessary to take account of special or local circumstances when classifying land. For this reason, the physical criteria of eligibility in this report are regarded as guidelines rather than rules although departures from the guidance should be exceptional and based on expert knowledge. Physical conditions on restored land may take several years to stabilise; therefore, the land is not normally graded until the end of the statutory aftercare period, or otherwise not until 5 years after soil replacement.

To ensure a consistent approach when classifying land the following assumptions are made:

1. Land is graded according to the degree to which physical or chemical properties impose long-term limitations on agricultural use. It is assessed on its capability at a good[1] but not outstanding standard of management.

2. Where limitations can be reduced or removed by normal management operations or improvements, for example cultivations or the installation of an appropriate underdrainage system, the land is graded according to the severity of the remaining limitations. Where an adequate supply of irrigation water is available this may be taken into account when grading the land (Section 3.4). Chemical problems which cannot be rectified, such as high levels of toxic elements or extreme subsoil acidity, are also taken into account.

3. Where long-term limitations outside the control of the farmer or grower will be removed or reduced in the near future through the implementation of a major improvement scheme, such as new arterial drainage or sea defence improvements, the land is classified as if the improvements have already been carried out. Where no such scheme is proposed, or there is uncertainty about implementation, the limitations will be taken into account. Where limitations of uncertain but potentially long-term duration occur, such as subsoil compaction or gas-induced anaerobism, the grading will take account of the severity at the time of survey.

4. The grading does not necessarily reflect the current economic value of land, land use, range of crops, suitability for specific crops or level of yield. For reasons given in the preface, the grade cut-offs are not specified on the basis of crop yields as these can be misleading, although in some cases crop growth may give an indication of the relative severity of a limitation.

5. The size, structure and location of farms, the standard of fixed equipment and the accessibility of land do not affect grading, although they may influence land use decisions.

[1] Previously described as 'satisfactory'; no change in the assumed standard of management is intended.

SECTION 2

DESCRIPTION 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 and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

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 and horticultural crops can usually be grown but on some land in the 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.

Grade 3 - good to moderate quality agricultural land
Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where 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 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 very 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.

Agricultural buildings
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.

Appendix KCC4

ALC Plans

476000 480000 484000 488000 492000 496000

272000 268000 264000 260000 256000

NORTHAMPTON

GREEN HILL SOLAR FARM

Title:
Figure 20.2
Agricultural Land Classification (ALC) Grade

Document:
Volume 1
Agricultural Circumstances
Environmental Statement (ES)

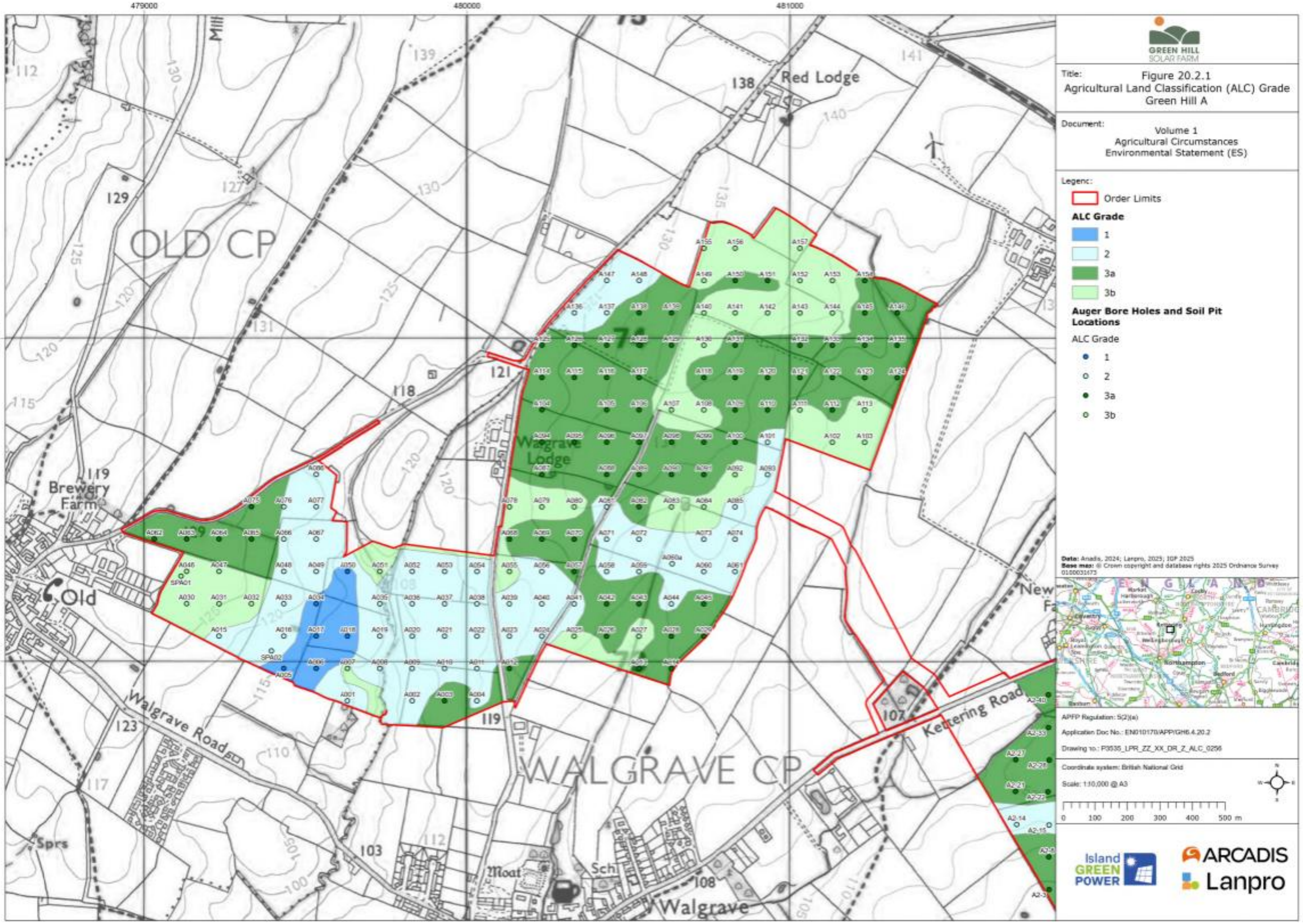
Legend:
Order Limits
ALC Grade
1
2
3a
3b

Data: Arcadis, 2025; Lanpro, 2025; IGP 2025
Base map: © Crown copyright and database rights 2025 Ordnance Survey 0100031673

APFP Regulation: 5(2)(a)
Application Doc No.: EN010170/APP/GH6.4.20.2
Drawing no.: P3535_LPR_ZZ_XX_DR_Z_ALC_0239
Coordinate system: British National Grid
Scale: 1:30,000 @ A3

0 1 2 3 4 5 km

Island GREEN POWER
ARCADIS
Lanpro


GREEN HILL SOLAR FARM
Title:
Figure 20.2.1
Agricultural Land Classification (ALC) Grade
Green Hill A
Document:
Volume 1
Agricultural Circumstances
Environmental Statement (ES)
Legend:
Order Limits
ALC Grade
1
2
3a
3b
Auger Bore Holes and Soil Pit Locations
ALC Grade
1
2
3a
3b
APFP Regulation: 5(2)(a)
Coordinate system: British National Grid
Scale: 1:10,000 @ A3
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Island GREEN POWER
ARCADIS
Lanpro
479000
480000
481000
274000
273000
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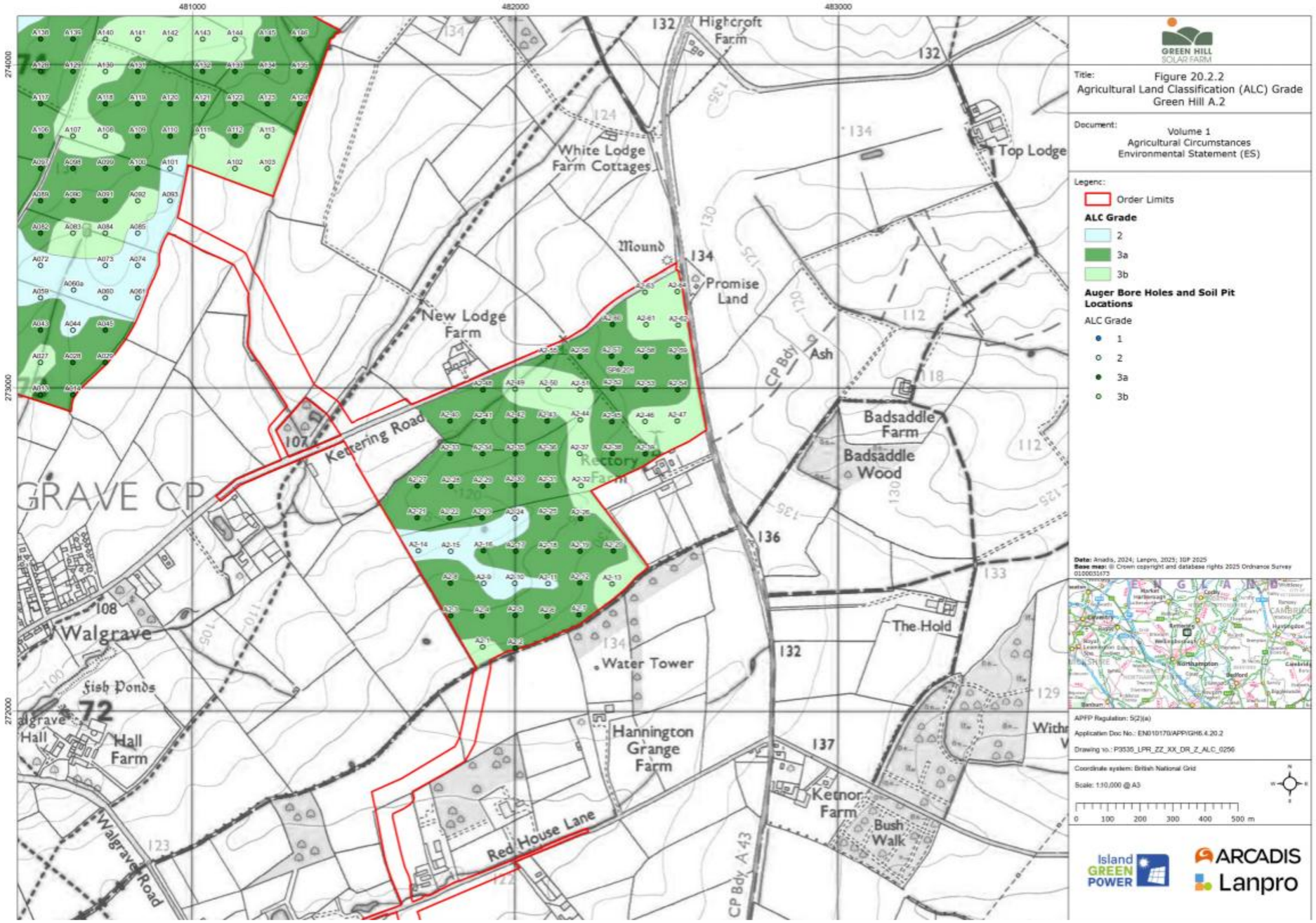
WALGRAVE CP
Red Lodge
Walgrave Lodge
Brewery Farm
Old
Walgrave Road
Kettering Road
Walgrave
Moat
Sch


481000
482000
483000
274000
273000
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Highcroft Farm
White Lodge Farm Cottages
Top Lodge
Mound
Promise Land
New Lodge Farm
CP Bdy
Ash
Badsaddle Farm
Badsaddle Wood
Kettering Road
Rectory Farm
GRAVE CP
Walgrave
Fish Ponds
Hall
Hall Farm
Water Tower
Hannington Grange Farm
Red House Lane
Walgrave Road
Ketnor Farm
Bush Walk
The Hold
CP Bdy A 43
132
134
136
137
107
108
72
GREEN HILL SOLAR FARM
Title: Figure 20.2.2 Agricultural Land Classification (ALC) Grade Green Hill A.2
Document: Volume 1 Agricultural Circumstances Environmental Statement (ES)
Legend:
Order Limits
ALC Grade
2
3a
3b
Auger Bore Holes and Soil Pit Locations
ALC Grade
1
2
3a
3b
Data: Arcadis, 2024; Lanpro, 2025; IGP 2025
Base map: © Crown copyright and database rights 2025 Ordnance Survey 0100031673
APFP Regulation: 5(2)(a)
Application Doc No.: EN010170/APP/GH6.4.20.2
Drawing no.: P3535_LPR_ZZ_XX_DR_Z_ALC_0256
Coordinate system: British National Grid
Scale: 1:10,000 @ A3
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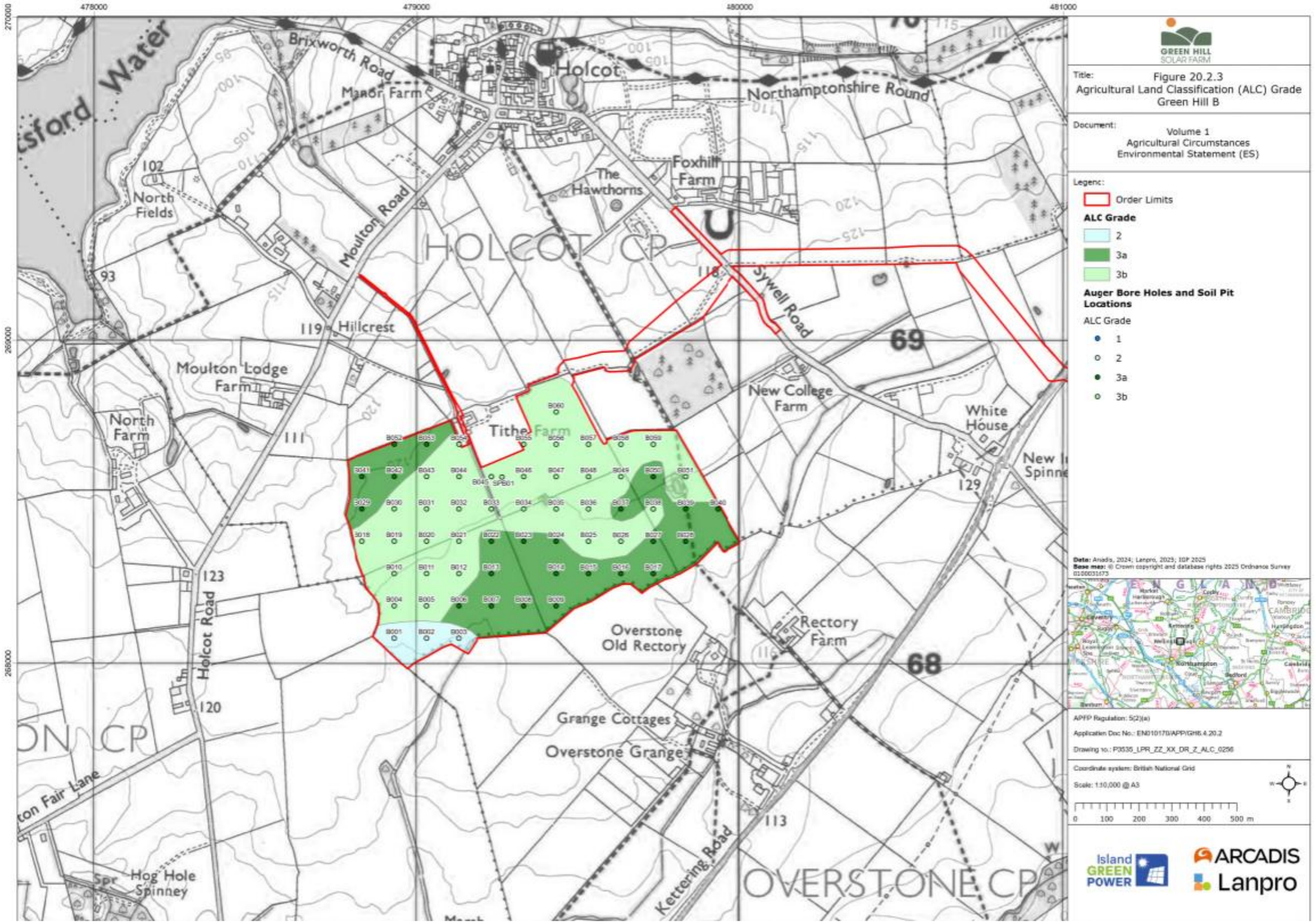
Island GREEN POWER
ARCADIS
Lanpro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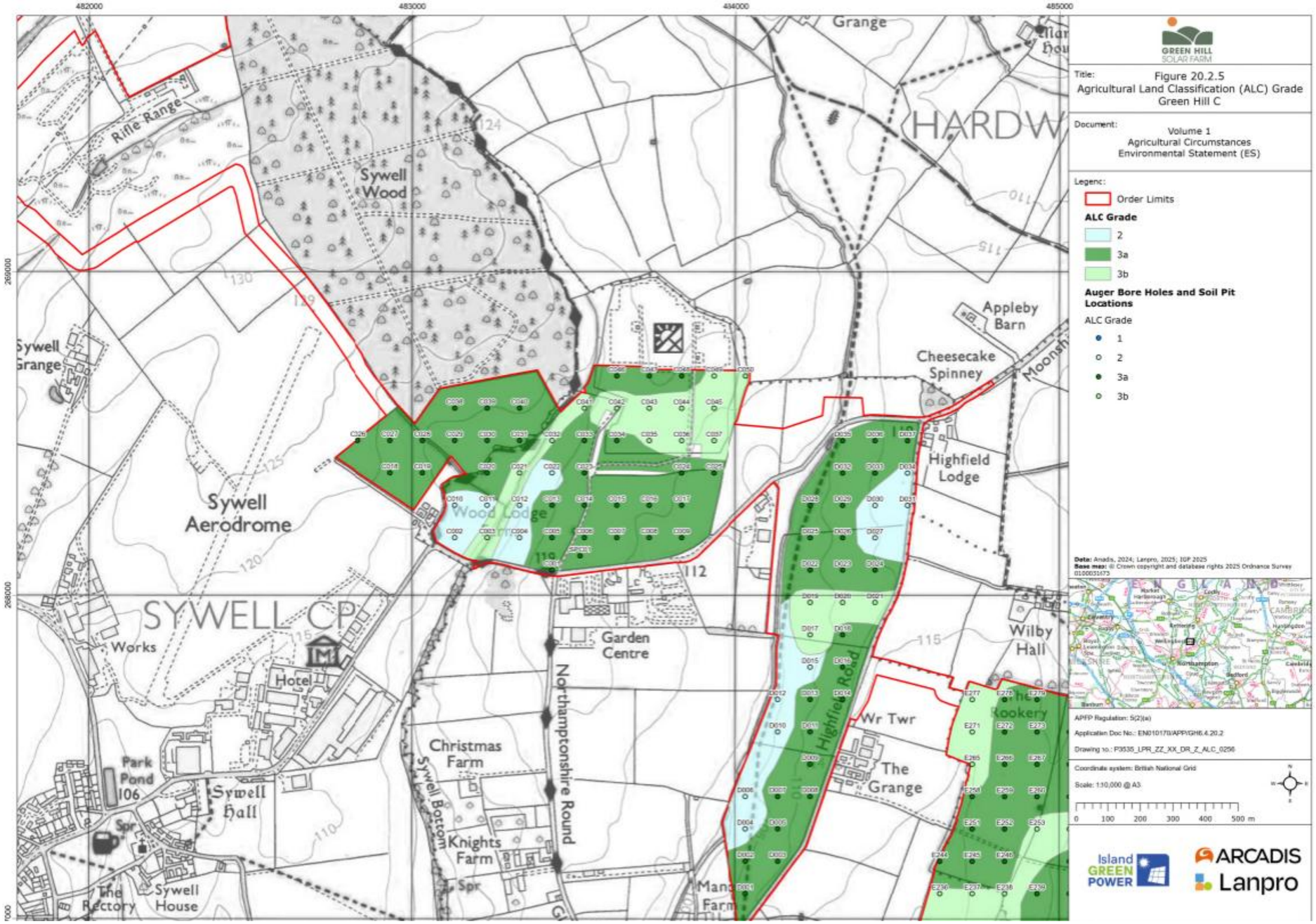
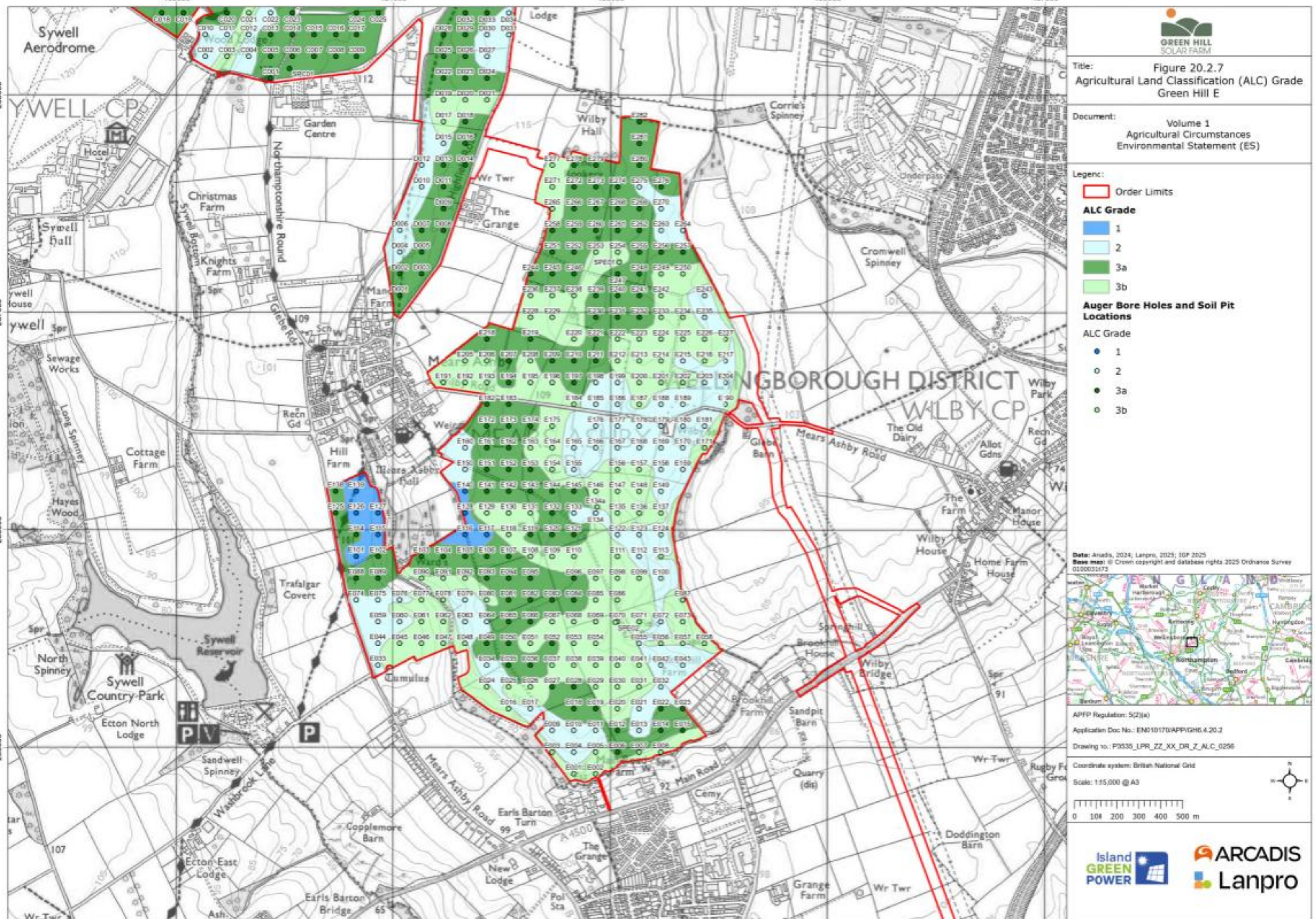
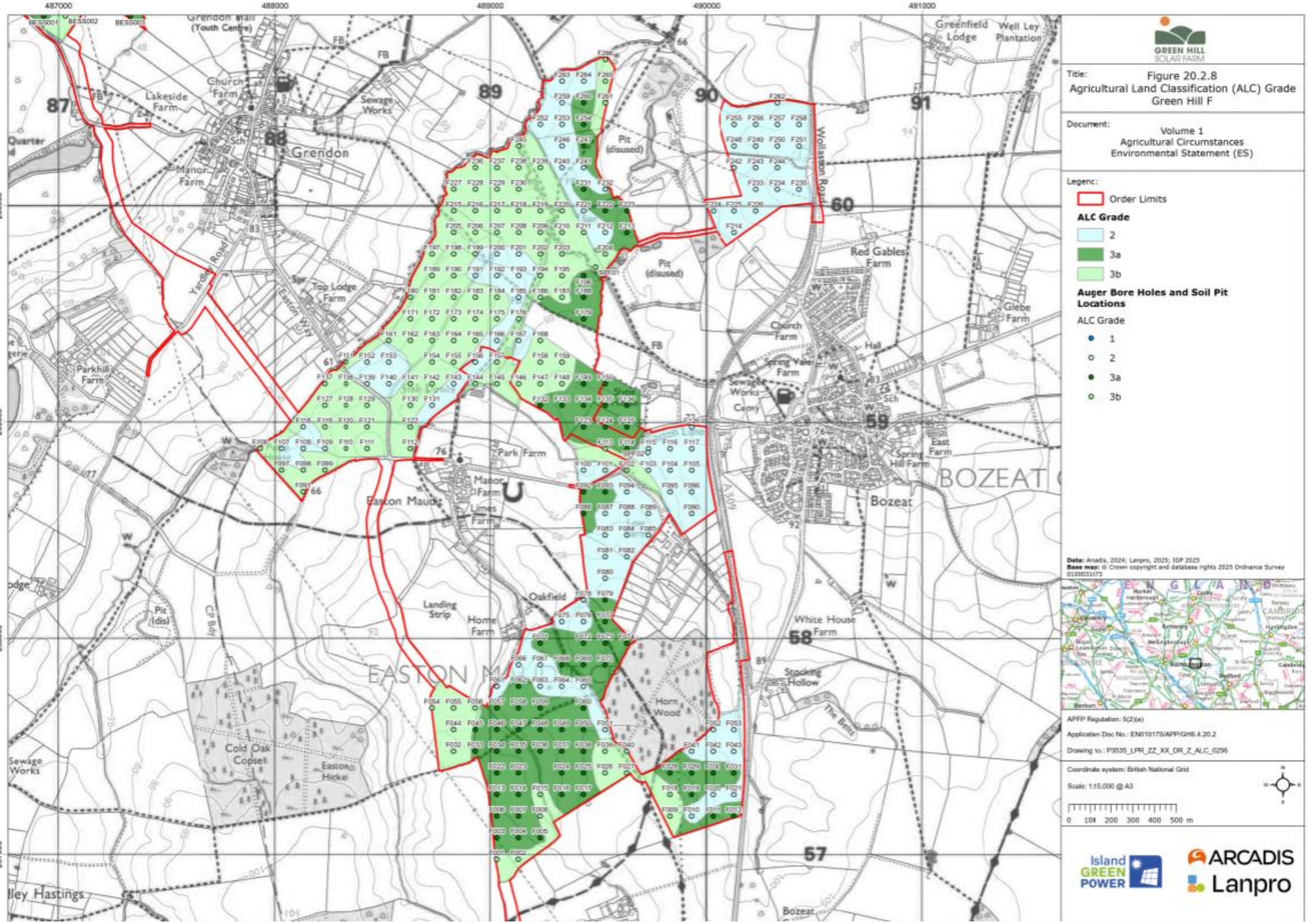
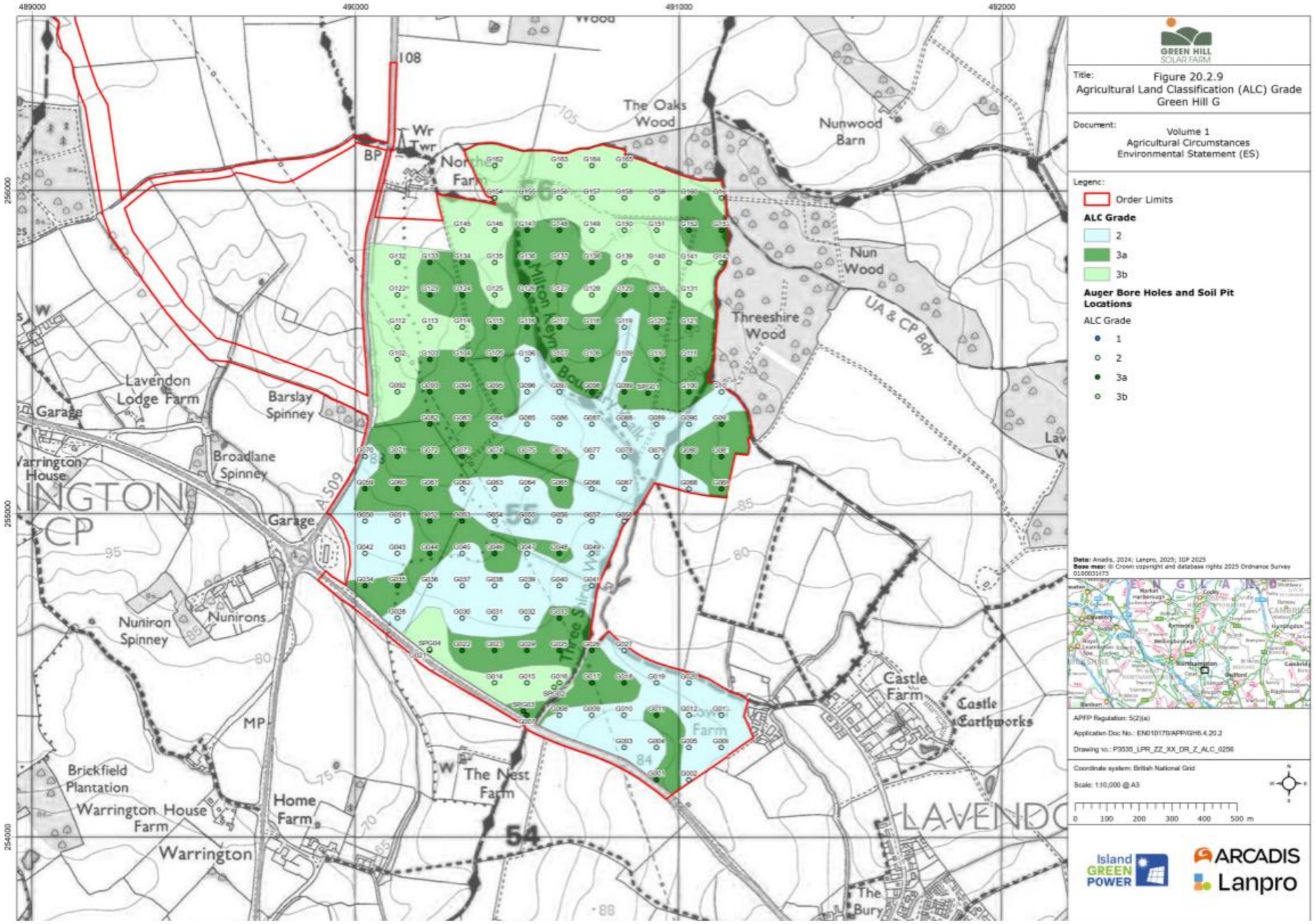
479000
480000
481000
270000
269000
268000
Brixworth Road
Manor Farm
Holcot
Northamptonshire Round
Foxhill Farm
The Hawthorns
HOLCOT CP
Moulton Road
North Fields
102
93
119
Hillcrest
Sywell Road
118
69
Moulton Lodge Farm
North Farm
111
Tithe Farm
New College Farm
White House
129
123
Holcot Road
120
Overstone Old Rectory
Rectory Farm
68
Grange Cottages
Overstone Grange
113
Kettering Road
OVERSTONE CP
Hog Hole Spinney
Spr
GREEN HILL SOLAR FARM
Title:
Figure 20.2.3
Agricultural Land Classification (ALC) Grade
Green Hill B
Document:
Volume 1
Agricultural Circumstances
Environmental Statement (ES)
Legend:
Order Limits
ALC Grade
2
3a
3b
Auger Bore Holes and Soil Pit Locations
ALC Grade
1
2
3a
3b
Data: Arcadis, 2024; Lanpro, 2025; IGP 2025
Base map: © Crown copyright and database rights 2025 Ordnance Survey 0100031673
APFP Regulation: 5(2)(a)
Application Doc No.: EN010170/APP/GH6.4.20.2
Drawing no.: P3535_LPR_ZZ_XX_DR_Z_ALC_0256
Coordinate system: British National Grid
Scale: 1:10,000 @ A3
0
100
200
300
400
500 m
Island GREEN POWER
ARCADIS
Lanpro


482000
483000
484000
485000
269000
268000
Grange
Rifle Range
Sywell Wood
Sywell Grange
Sywell Aerodrome
SYWELL CP
Works
Hotel
Park Pond
106
Sywell Hall
Spr
The Rectory
Sywell House
Wood Lodge
Garden Centre
Northamptonshire Round
Christmas Farm
Sywell Bottom
Knights Farm
Spr
Appleby Barn
Cheesecake Spinney
Highfield Lodge
Highfield Road
Wr Twr
The Grange
Wilby Hall
The Rookery
124
130
129
125
120
119
112
115
110
GREEN HILL SOLAR FARM
Title:
Figure 20.2.5
Agricultural Land Classification (ALC) Grade
Green Hill C
Document:
Volume 1
Agricultural Circumstances
Environmental Statement (ES)
Legend:
Order Limits
ALC Grade
2
3a
3b
Auger Bore Holes and Soil Pit Locations
ALC Grade
1
2
3a
3b
Data: Anadis, 2024; Lanpro, 2025; IGP 2025
Base map: © Crown copyright and database rights 2025 Ordnance Survey 0100031673
APFP Regulation: 5(2)(a)
Application Doc No.: EN010170/APP/GH6.4.20.2
Drawing no.: P3535_LPR_ZZ_XX_DR_Z_ALC_0256
Coordinate system: British National Grid
Scale: 1:10,000 @ A3
0 100 200 300 400 500 m
Island GREEN POWER
ARCADIS
Lanpro


GREEN HILL SOLAR FARM
Title: Figure 20.2.6
Agricultural Land Classification (ALC) Grade
Green Hill D
Document: Volume 1
Agricultural Circumstances
Environmental Statement (ES)
Legend:
Order Limits
ALC Grade
2
3a
3b
Auger Bore Holes and Soil Pit Locations
ALC Grade
1
2
3a
3b
Data: Arcadis, 2024; Lanpro, 2025; IGP 2025
Base map: © Crown copyright and database rights 2025 Ordnance Survey 0100031673
APFP Regulation: 5(2)(e)
Application Doc No.: EN010170/APP/GH6.4.20.2
Drawing no.: P3535_LPR_ZZ_XX_DR_Z_ALC_0256
Coordinate system: British National Grid
Scale: 1:10,000 @ A3
0 100 200 300 400 500 m
Island GREEN POWER
ARCADIS
Lanpro
483000
484000
485000
269000
268000
267000
Appleby Gate
Sywell Road
Appleby Barn
Moonshine Gap
Cheesecake Spinney
Highfield Lodge
Wood Lodge
Garden Centre
Northamptonshire Round
Highfield Road
Wilby Hall
The Rookery
Wr Twr
The Grange
Christmas Farm
Sywell Bottom
Knights Farm
Corrie's Spinney
Glebe Rd
Mears Ashby
Wilby Road
Recn Gd
Weir
Glebe

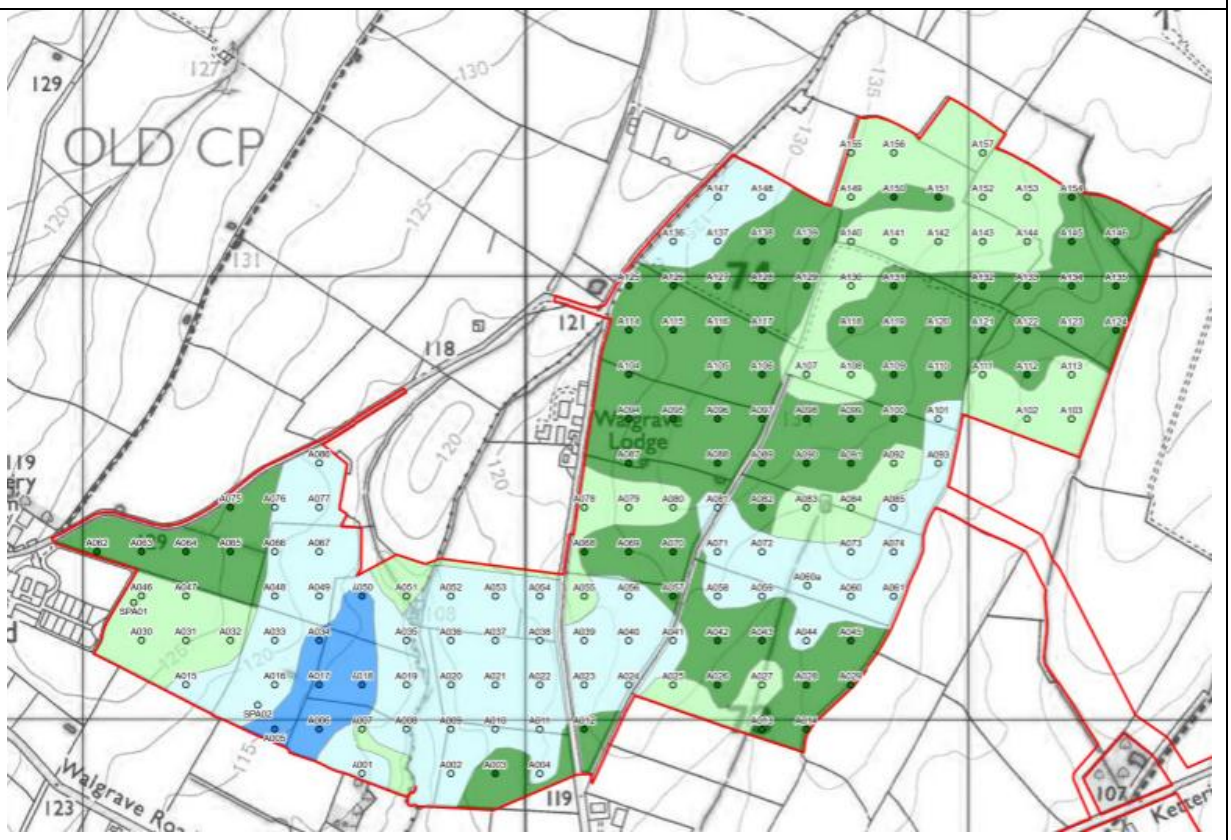

GREEN HILL SOLAR FARM
Title:
Figure 20.2.7
Agricultural Land Classification (ALC) Grade Green Hill E
Document:
Volume 1
Agricultural Circumstances
Environmental Statement (ES)
Legend:
Order Limits
ALC Grade
1
2
3a
3b
Auger Bore Holes and Soil Pit Locations
ALC Grade
1
2
3a
3b
APFP Regulation: 5(2)(a)
Coordinate system: British National Grid
Scale: 1:15,000 @ A3
0 100 200 300 400 500 m
Island GREEN POWER
ARCADIS
Lanpro
Sywell Aerodrome
Garden Centre
Christmas Farm
Northamptonshire Round
The Grange
Wilby Hall
Sywell Hall
Knights Farm
Sewage Works
Cottage Farm
Hill Farm
Mears Ashby Hall
Trafalgar Covert
Sywell Reservoir
Sywell Country Park
Ecton North Lodge
Sandwell Spinney
Mears Ashby Road
Earls Barton Turn
Copplemore Barn
Ecton East Lodge
Earls Barton Bridge
Cromwell Spinney
Corrie's Spinney
The Old Dairy
Glebe Barn
Wilby House
Home Farm House
Brookhill House
Wilby Bridge
Sandpit Barn
Doddington Barn
Grange Farm
WILBY CP
483000
484000
485000
486000
487000


GREEN HILL SOLAR FARM
Title:
Figure 20.2.8
Agricultural Land Classification (ALC) Grade
Green Hill F
Document:
Volume 1
Agricultural Circumstances
Environmental Statement (ES)
Legend:
Order Limits
ALC Grade
2
3a
3b
Auger Bore Holes and Soil Pit Locations
ALC Grade
1
2
3a
3b
APFP Regulation: 5(2)(a)
Coordinate system: British National Grid
Scale: 1:15,000 @ A3
0 100 200 300 400 500 m
Island GREEN POWER
ARCADIS
Lanpro
Grendon
Bozeat
Easton Maudit
Wollaston Road
Horn Wood
Cold Oak Copse
Park Farm
White House Farm
487000
488000
489000
490000
491000
260000
259000
258000
257000

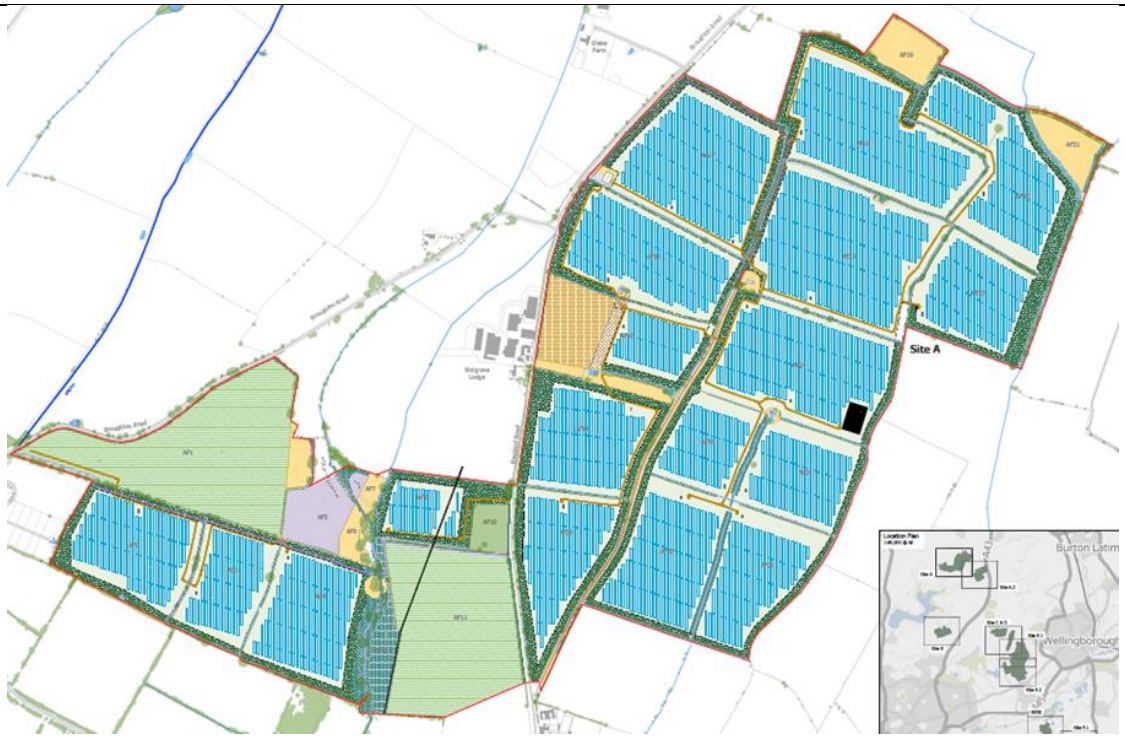

GREEN HILL
SOLAR FARM
Title:
Figure 20.2.9
Agricultural Land Classification (ALC) Grade
Green Hill G
Document:
Volume 1
Agricultural Circumstances
Environmental Statement (ES)
Legend:
Order Limits
ALC Grade
2
3a
3b
Auger Bore Holes and Soil Pit Locations
ALC Grade
1
2
3a
3b
Data: Arcadis, 2024; Lanpro, 2025; IGP 2025
Base map: © Crown copyright and database rights 2025 Ordnance Survey 0100031673
APFP Regulation: 5(2)(a)
Application Doc No.: EN010170/APP/GH6.4.20.2
Drawing no.: P3535_LPR_ZZ_XX_DR_Z_ALC_0256
Coordinate system: British National Grid
Scale: 1:10,000 @ A3
0 100 200 300 400 500 m
Island GREEN POWER
ARCADIS
Lanpro
489000
490000
491000
492000
256000
255000
254000
The Oaks Wood
Nunwood Barn
Nun Wood
Threeshire Wood
UA & CP Bdy
Milton Keynes Boundary Walk
Three Shire Way
Lavendon Lodge Farm
Barslay Spinney
Broadlane Spinney
Garage
Warrington House
A509
Nuniron Spinney
Nunirons
MP
Brickfield Plantation
Warrington House Farm
Home Farm
Warrington
The Nest Farm
Castle Farm
Castle Earthworks
LAVENDON
The Bury
108
105
95
85
80
75
70
65
88
84
83
55
54

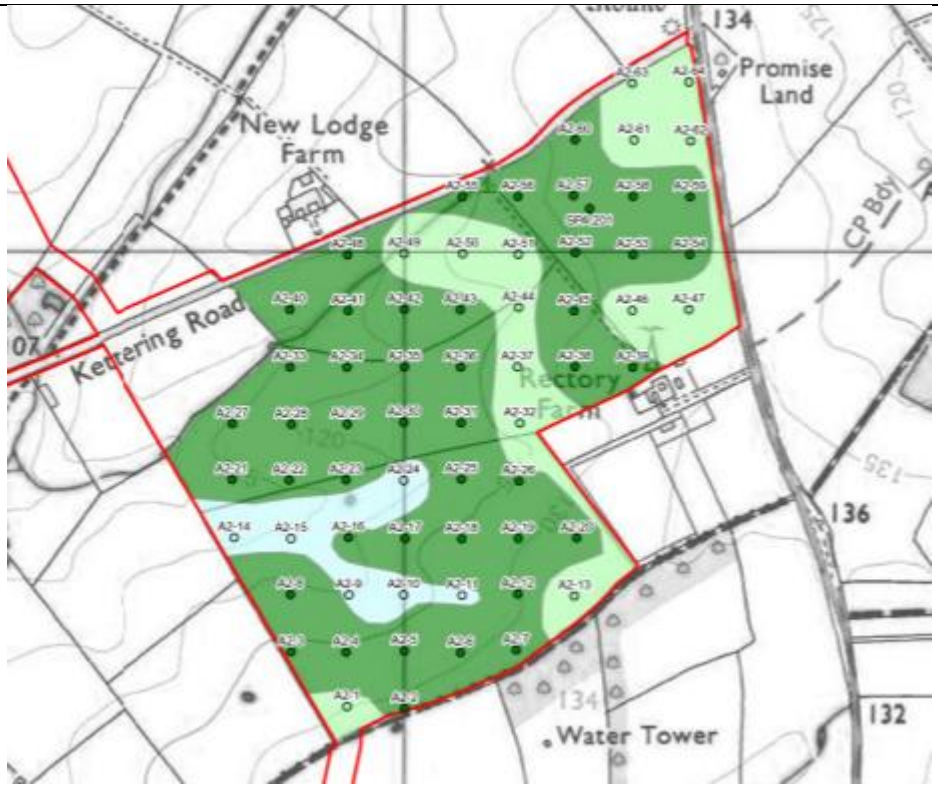
Appendix KCC5

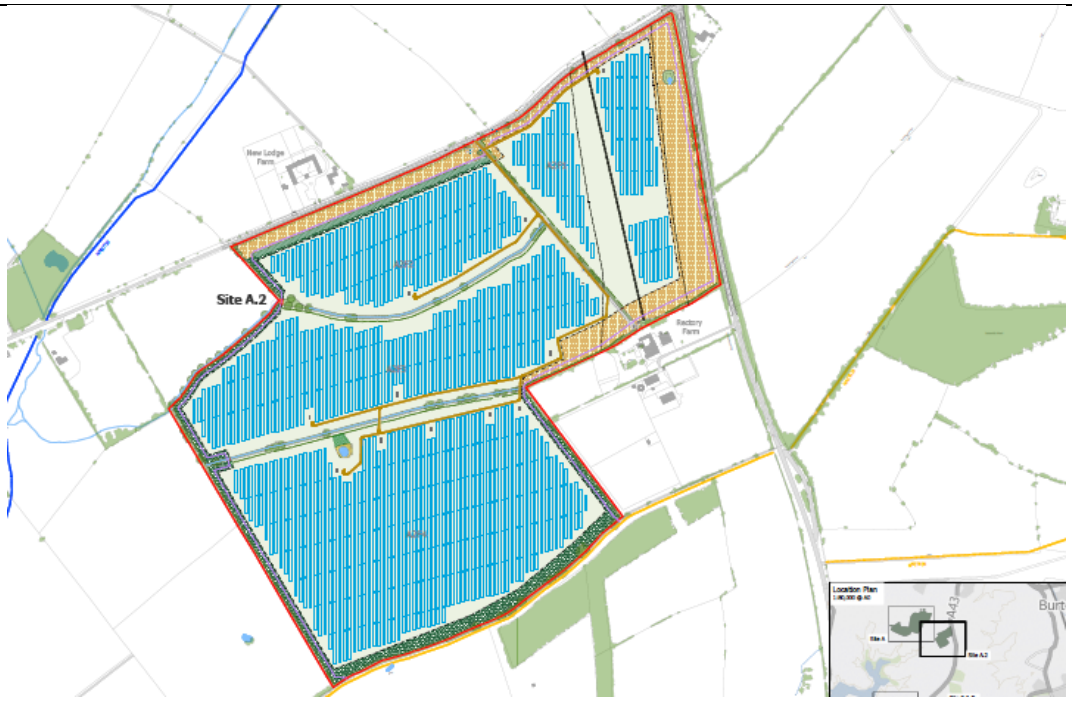
Farm Reports

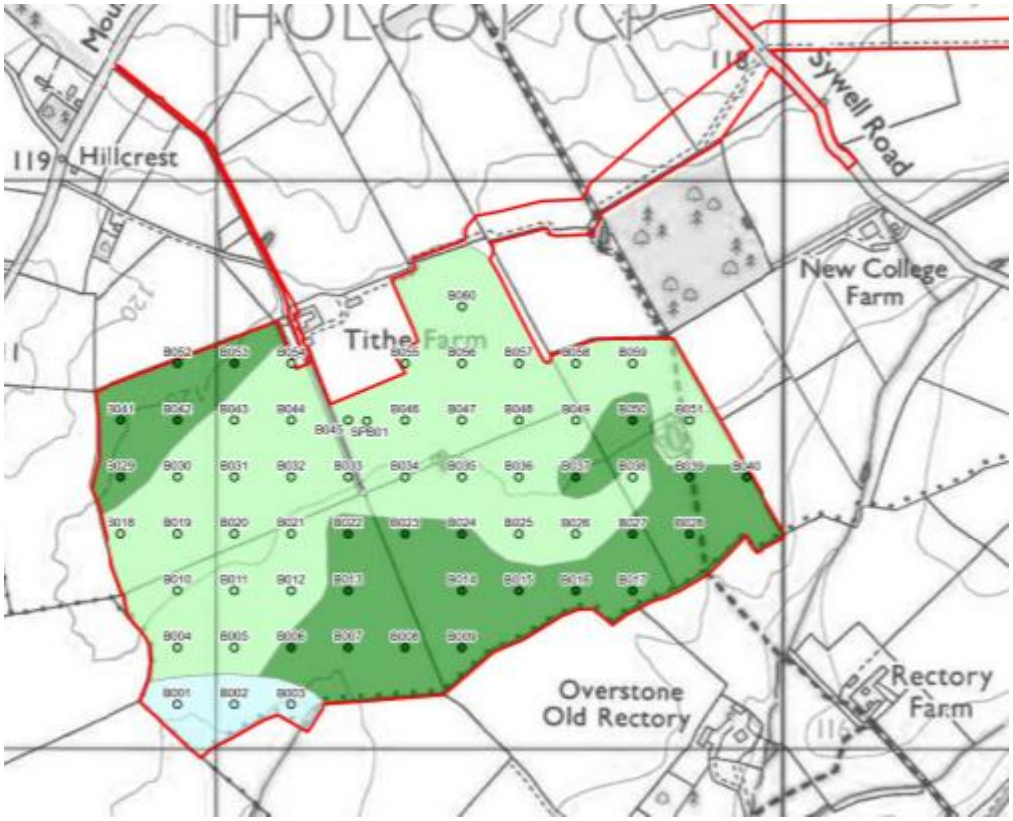
GREEN HILL A	
Farm	Walgrave Lodge Farm
Interview	7th March 2025
Farm Size	Total farmed area circa 1,200 ha. This includes 320 ha owned, 262 ha contract farmed, 400 ha arable run as contractors, 250 ha grassland managed, plus a further 400 ha straw baling.
Arable Enterprises	Mostly on a four year rotation of wheat, spring oats, wheat and a legume break crop. Wheat is sold to Weetabix or as a feed crop. Spring oats are usually grown for milling.
Livestock Enterprise	There is a small herd of cattle, circa 15 cows. Winter grazing of sheep occurs over parts of the farm.
Location of Buildings	The majority of buildings are located at Walgrave House Farm.
Land Management	The farm is mostly minimum tillage, with a low-disturbance subsoiler and a combined disc/drill. The farm is largely self sufficient for labour and machinery.
Staffing	Owner, 2 no. full time, 1 no. part time, seasonal workers.
Field drainage	Partial field drainage extensively across the holding, all old systems.
Agri-environmental	Circa 260 ha in various SFI tiers.
ALC & Photos	

GREEN HILL A	
1	
2	
3	
4	

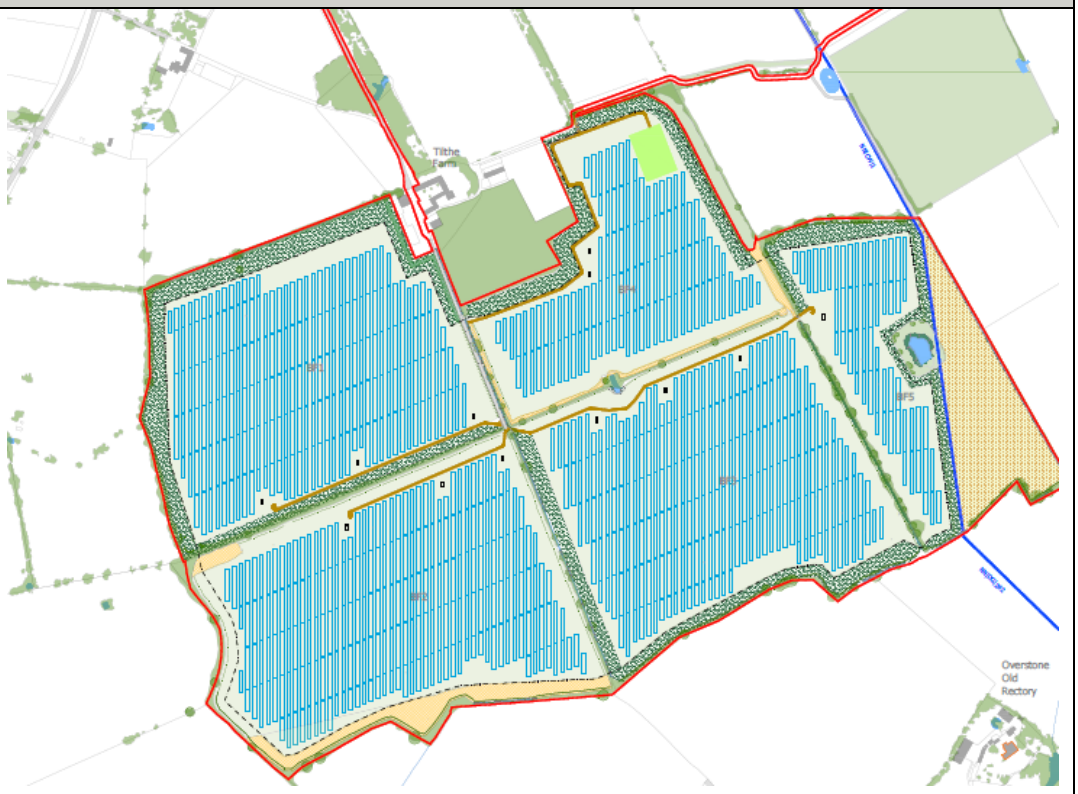
GREEN HILL A	
5	
Proposed Panel Layout and LEMP	

GREEN HILL A2	
Farm	Lower End Farm.
Interview	7th March 2025.
Farm Size	Circa 400 ha in total. Owned Green Hill A2 since 1996, the rest is rented on AHA tenancies, FBT or other arrangements.
Arable Enterprises	Almost all the farm is wheat, mix of feed and milling. No longer grow oilseed rape.
Livestock Enterprise	None.
Location of Buildings	Green Hill A2 is bare land (ie no buildings). Main farm buildings at two yards near Brafield on the Green and Little Houghton.
Land Management	Mostly minimum tillage, occasional plough to control blackgrass.
Staffing	Two brothers plus casual
Field drainage	There is partial drainage, mostly very old or 1960's schemes
Agri-environmental	Whole farm is entered into a non-insecticide scheme
ALC & Photos	

1	
2	
3	
Proposed Panel Layout and LEMP	

GREEN HILL B	
Farm	Green Hill B is in two different ownerships. Both are farmed by contractors
Interview	With contractors 7th March 2025
Farm Size	Contractor farms over 400 ha for one of the owners, plus a further 1,100 ha from other landowners
Arable Enterprises	Usually the fields are grown for wheat (Weetabix, bread or feed), spring oats or occasionally a break crop
Livestock Enterprise	The grassland is used for making hay, usually small-bale. There are no livestock enterprises
Location of Buildings	There are no farm buildings in Green Hill B. The farms use a mix of owned buildings and buildings on rented land
Land Management	The land is mostly minimum-tillage or direct drilled, with periodic ploughing as needed
Staffing	4 family members, 1 full-time worker
Field drainage	Not known
Agri-environmental	Green Hill B is not entered into any scheme. Overall c 10% of the farm is entered.
ALC & Photos	This is small part of the larger farm. The southern part of the fields, the lighter land, does not yield as well as the majority of the field 

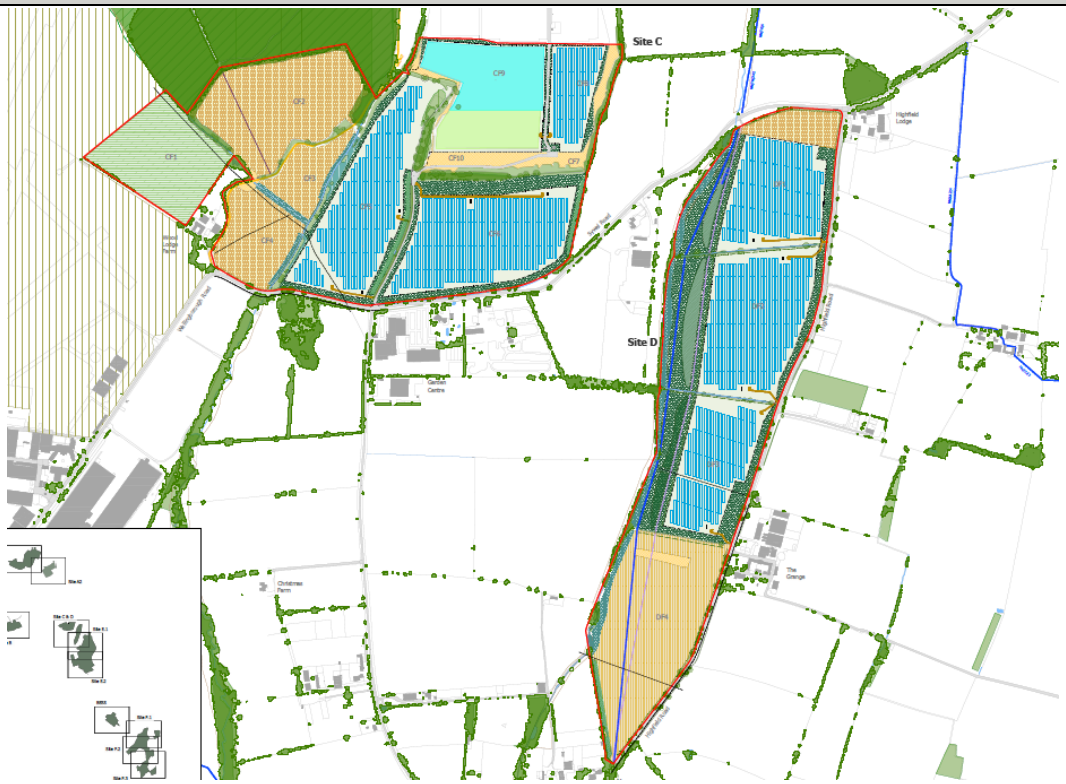
GREEN HILL B	
1	
2	
3	
4	

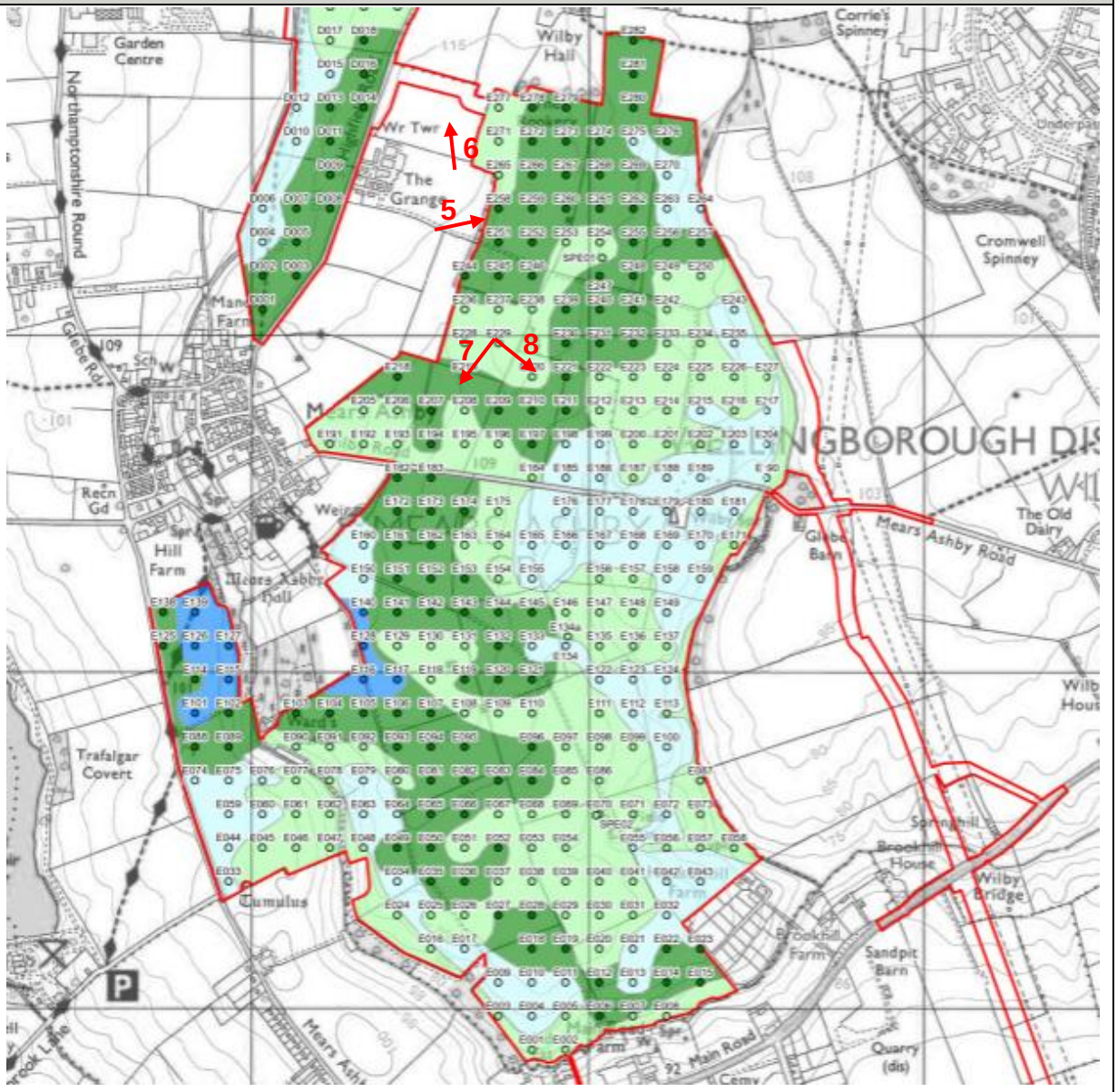
GREEN HILL B	
Proposed Panel Layout and LEMP	

GREEN HILL C, D, PART OF E (E1)	
Farm	Grange Farm, Mears Ashby
Interview	11th March 2025
Farm Size	Farm in total circa 800 ha. Of this own circa 80 ha, have secure tenancy on 220 ha, long-term FBT on 120 ha, rent a further 200 ha, and contract farm 160 ha
Arable Enterprises	Recently changed as oilseed rape dropped. Now wheat, oats with an understorey and cover crop. This is building in soil resilience
Livestock Enterprise	None operated, but do periodically have 500-600 sheep grazing cover crops
Location of Buildings	Mostly on Home Farm
Land Management	The farm has switched to minimal tillage or direct drilling
Staffing	2 family members, 1 full-time worker, casual as needed for harvest
Field drainage (Block C)	None done in recent years. There are some from the 1980's
Agri-environmental	Have been in Higher Level Stewardship for a long time, now ended

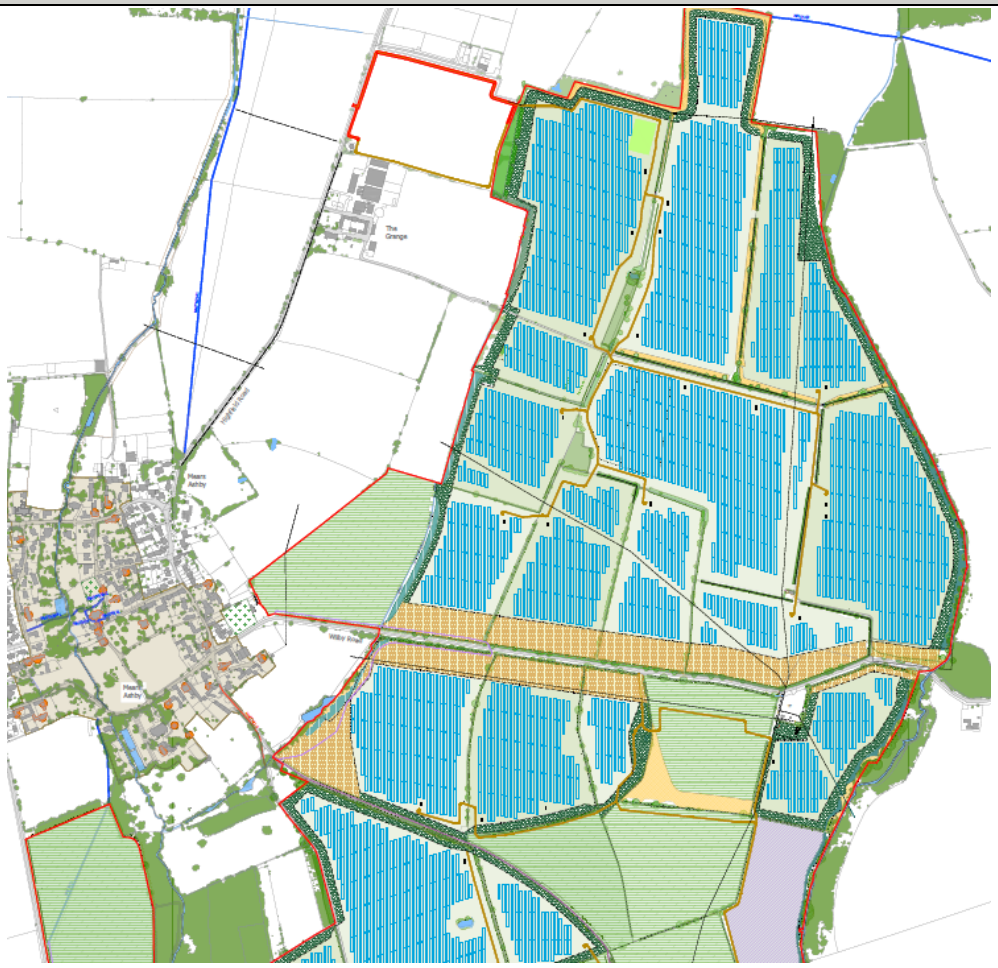
GREEN HILL C, D, PART OF E (E1)	
ALC & Photos	
1	

GREEN HILL C, D, PART OF E (E1)	
2	
3	
4	

GREEN HILL C, D, PART OF E (E1)	
Proposed Panel Layout (Green Hill C and D)	

GREEN HILL C, D, PART OF E (E1)	
ALC & Photos	
5	

GREEN HILL C, D, PART OF E (E1)	
6	
7	
8	

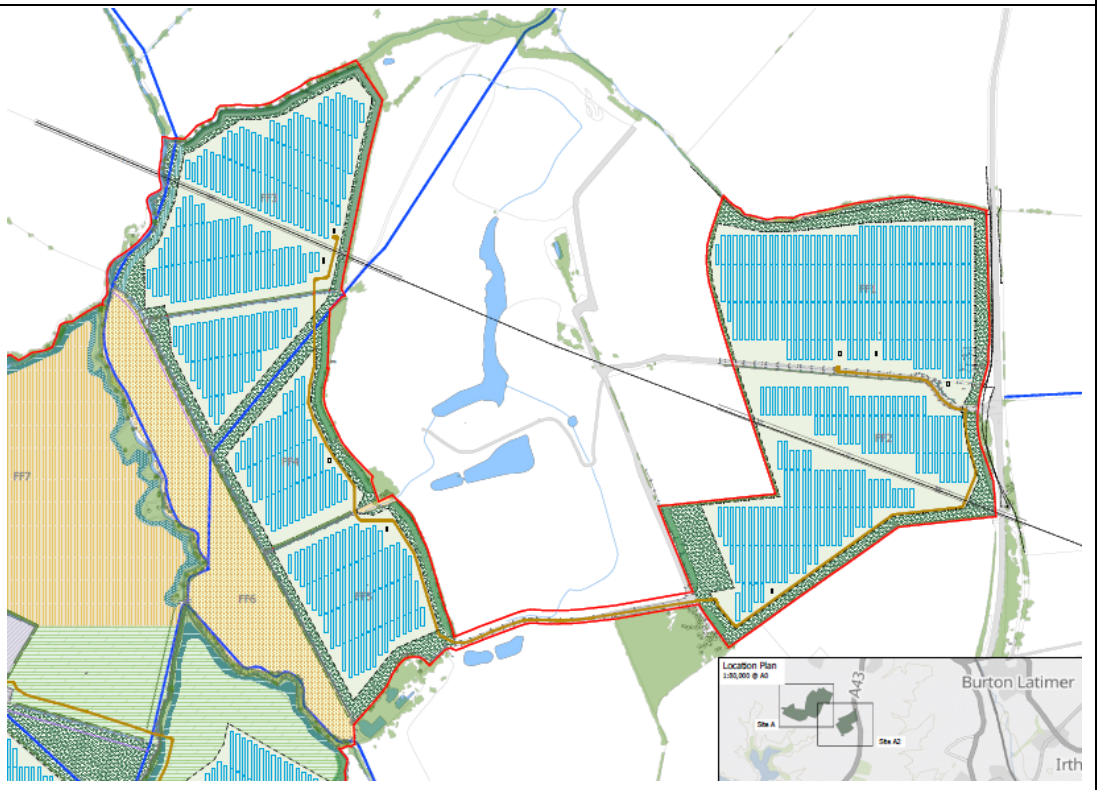
GREEN HILL C, D, PART OF E (E1)	
Proposed Panel Layout (Green Hill E)	
	

PART OF GREEN HILL E (E2)	
Farm	Occupied by a tenant on a fixed term FBT
Interview	-
Farm Size	The farmland is tenanted as part of a larger farm enterprise. 103 ha included
Arable Enterprises	Cereals and break crops
Livestock Enterprise	Not on this land.
Location of Buildings	No buildings are located on this parcel.
Land Management	Arable cropping.
Staffing	Non-secure, details not known.
Field drainage	Not known for this parcel of land.
Agri-environmental	Not known for this parcel of land.
ALC & Photos	

PART OF GREEN HILL E (E2)	
1	
2	
Area Occupied	

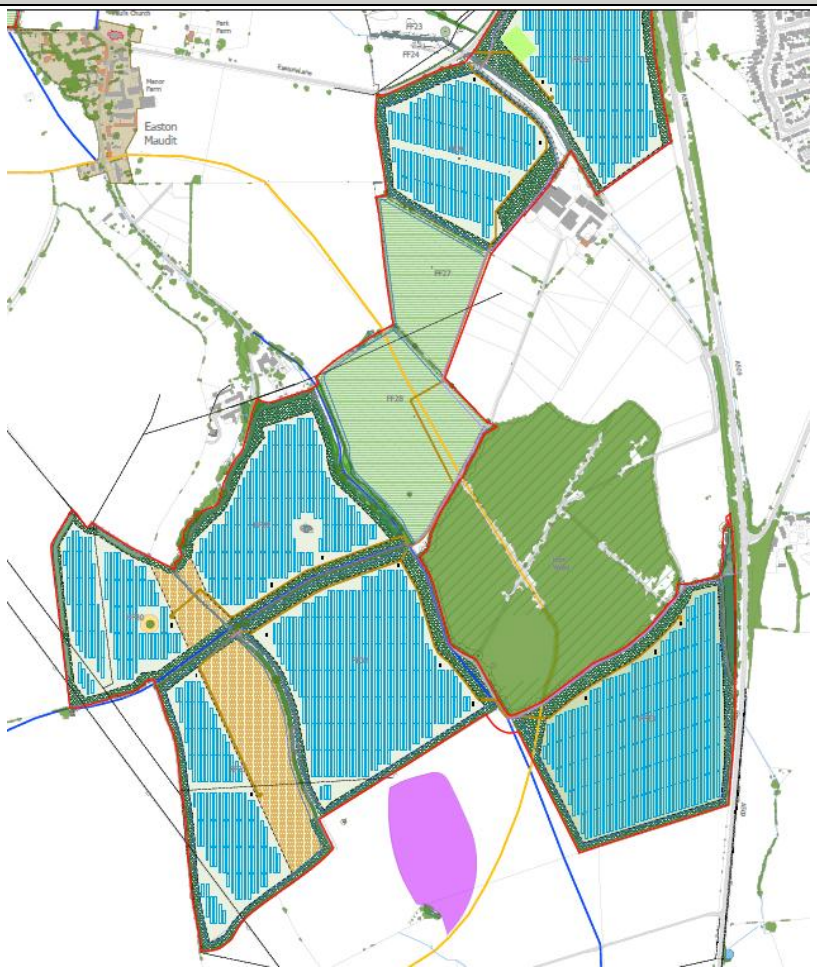
PART OF GREEN HILL E (E2)	
Proposed (illustrative) Layout	

PART OF GREEN HILL F (F1)	
Farm	Ashby Estates, tenanted
Interview	21st March 2025
Farm Size	Short term (single year) tenancy. 53 ha included.
Arable Enterprises	Combinable crops
Livestock Enterprise	None on the land involved.
Location of Buildings	None on the land
Land Management	Arable cropping
Staffing	Not relevant.
Field drainage	Details are not known.
Agri-environmental	Not on this land.
ALC	

PART OF GREEN HILL F (F1)	
Tenancy area FF 1, 2, 3, 4, 5 & 6	
Proposed (illustrative) Layout	

PART OF GREEN HILL F (F2)	
Farm	Easton Low Farm (Ashby Estates)
Interview	16th May 2025
Farm Size	570 ha
Arable Enterprises	Cereals and combinable break crops
Livestock Enterprise	Beef cattle and sheep.
Location of Buildings	Home Farm, Low Farm and Waterfall Farm
Land Management	Minimal tillage.
Staffing	3 full-time plus harvest help.
Field drainage	Details are not known for these fields.
Agri-environmental	Various schemes are entered.
ALC and Photos	

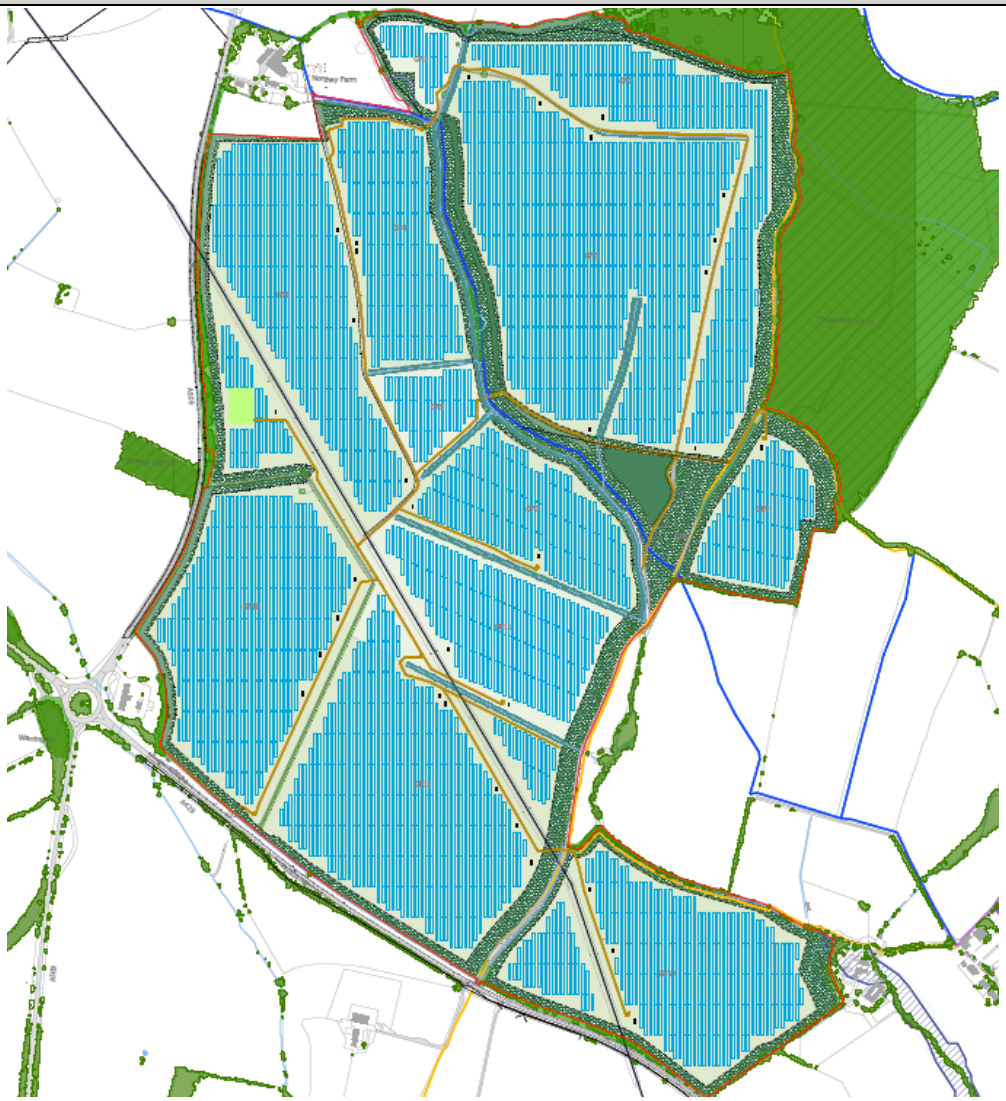
PART OF GREEN HILL F (F2)	
Tenancy FF 25, 26, 27, 28, 31, 32, 33	

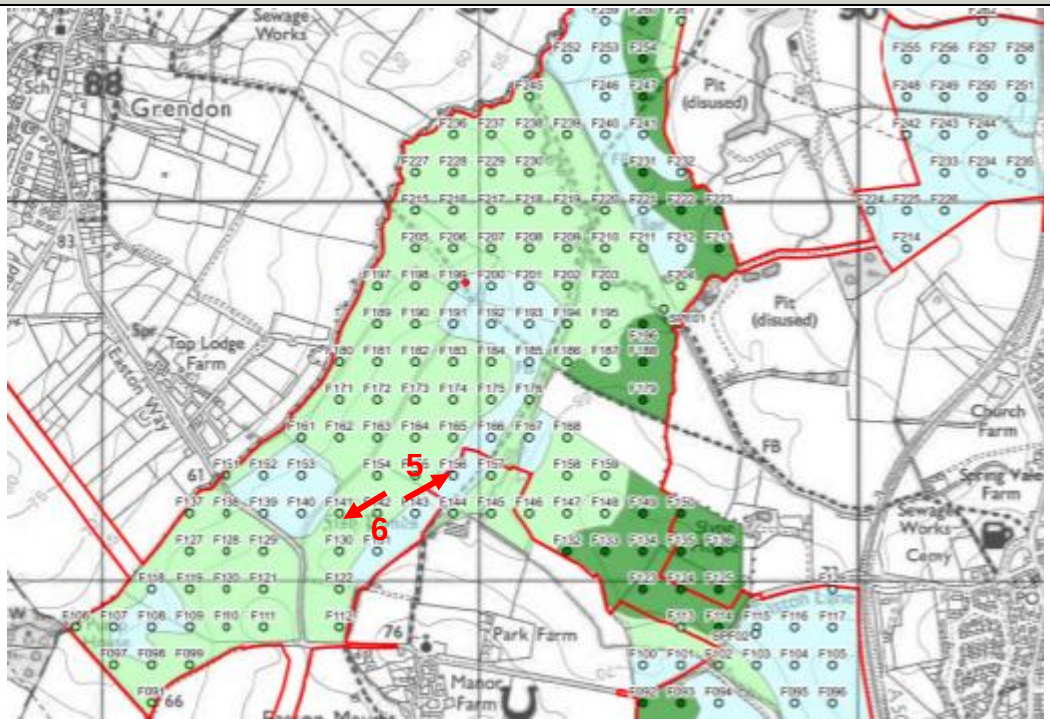
PART OF GREEN HILL F (F2)	
Proposed (illustrative) Layout	

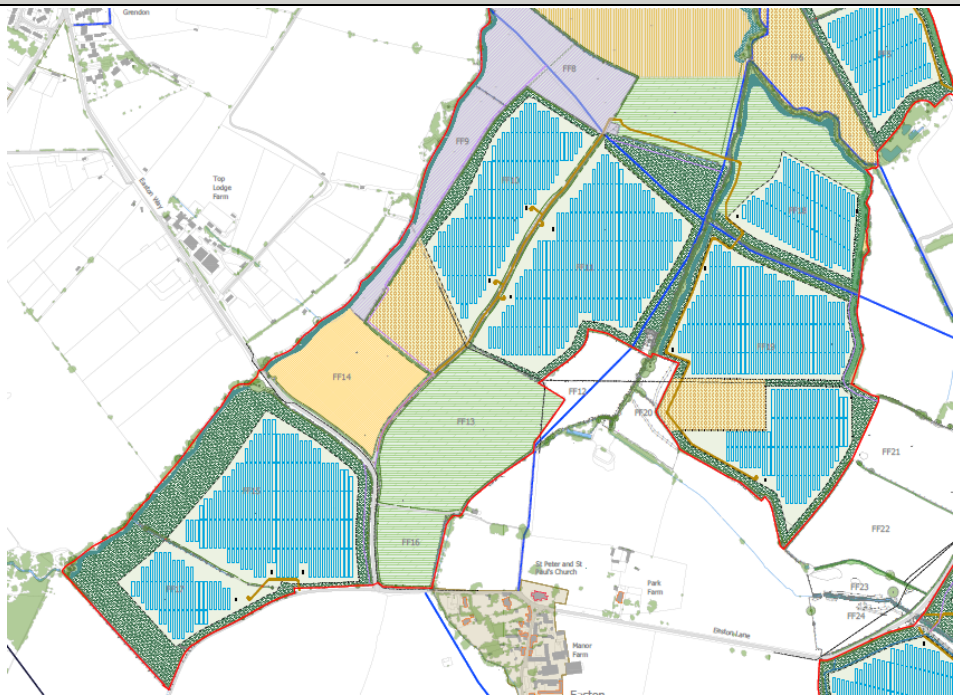
GREEN HILL G, PART OF GREEN HILL F (F3)	
Farm	Pinetree Farm
Interview	7th March 2025
Farm Size	Total farmed 1,030 ha. Of this 500 ha is Pinetree, 164 ha is Green Hill G and 360 ha is contract farmed. This includes F3, F4 and F5
Arable Enterprises	50 – 60% of the farm is winter wheat. About 2% is sold to Weetabix, Nestle and others. About 80% is sold as animal feed. The rest is spring barley, combineable break crops or maize for AD.
Livestock Enterprise	None
Location of Buildings	Most are at Pinetree Farm

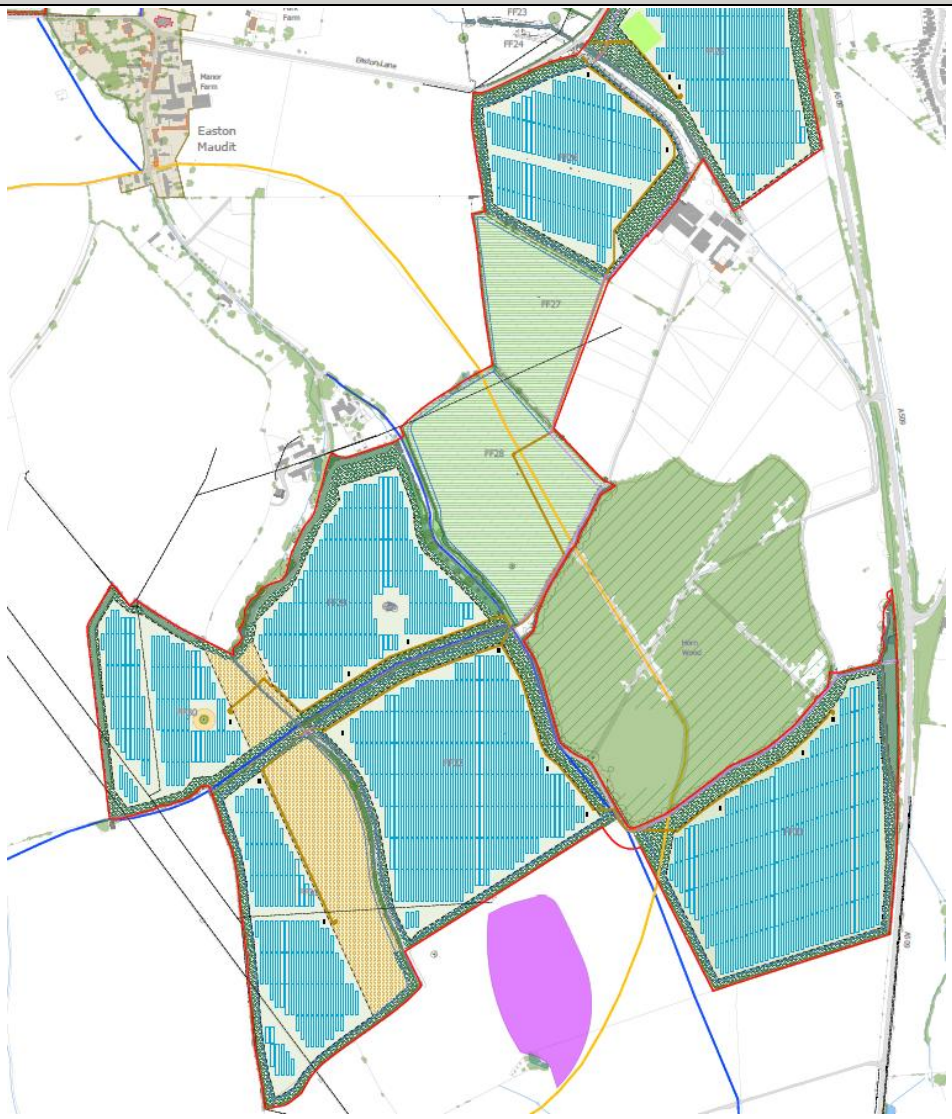
GREEN HILL G, PART OF GREEN HILL F (F3)	
Land Management	Limited tillage where possible
Staffing	2 family, 2 full-time workers
Field drainage	Quite extensive across the parcel. Have added some of the southern end in recent years
Agri-environmental	A modest area (c20 ha) in SFI.
ALC & Photos	

GREEN HILL G, PART OF GREEN HILL F (F3)	
1	
2	
3	
4	

GREEN HILL G, PART OF GREEN HILL F (F3)	
Proposed (illustrative) Layout	

GREEN HILL G, PART OF GREEN HILL F (F3)	
ALC & Photos	
5	
6	

GREEN HILL G, PART OF GREEN HILL F (F3)	
Proposed (illustrative) Layout	

GREEN HILL G, PART OF GREEN HILL F (F3)	
Proposed (illustrative) Layout	
BESS	
Farm	Pastures Farm
Interview	6th March 2025
Farm Size	180 ha, half owned.
Arable Enterprises	Currently all wheat, but usually a mix of 65 – 70% winter wheat with break crop of barley, beans or oilseed rape.
Livestock Enterprise	None
Location of Buildings	All at Pasture Farm.
Land Management	Generally limited tillage.

GREEN HILL G, PART OF GREEN HILL F (F3)	
Staffing	One family workers, family help as needed.
Field drainage	Much of the land involved has been worked and restored, and is underdrained in places.
Agri-environmental	In old CSS and new SFI schemes.
ALC	

GREEN HILL G, PART OF GREEN HILL F (F3)	
Proposed (illustrative) Layout	
Aerial photo	

Appendix KCC6

Defra Press Release December 2024

Food supply and food security

Defra Press Office, 6 December 2022 - Weekly stories

There has been some coverage of calls by the National Farmers Union (NFU) for more government support for farmers to safeguard the nation's food supplies.

We understand that farmers are facing increasing costs as a result of the impacts of the conflict in Ukraine and global economic shocks including the spike in oil and gas prices, and have announced a range of measures throughout the course of the year to help mitigate these challenges and support industry.

The UK's food supply chain remains resilient, with supply from diverse sources guaranteeing a high level of food security.

A Government spokesperson said:

" The UK has a large and highly resilient food supply chain. Our high degree of food security is built on supply from diverse sources; strong domestic production as well as imports through stable trade routes.The government is in regular contact with the food and farming industries to ensure they are well

prepared for a range of scenarios, and we continue to take all the necessary steps to ensure people across the country have the food they need."

To support the food and farming industry in the face of these pressures, the government has:

- Brought forward 50% of direct payments earlier this year to help farmers with cashflow
- Delayed proposed changes in the use of urea fertiliser back in March to help farmers manage costs and give them more time to adapt
- Brought forward New slurry storage grants which will help farmers reduce their reliance on artificial fertilisers
- Continued progress of the roll out of the Sustainable Farming Incentive scheme, and over 4000 applications have now been started. This pays farmers for actions, including improving soil health, which will reduce dependence on manufactured fertilisers which are linked to gas prices
- Removed the 25% tariff on US maize imports, which are a key ingredient for animal feed
- Brought in The Energy Bill Relief scheme, meaning businesses will be paying less than half of predicted wholesale energy costs this winter
- Cut fuel duty for petrol and diesel by 5p per litre across the UK until March 2023
- Reduced employer national insurance by increasing the Employment Allowance
- Put the brakes on bill increases by freezing the business rates multiplier - worth £9.3 billion over the next five years.
- Relaxed marketing rules so that farmers who breed turkeys, geese or ducks for their meat have the option to slaughter their flocks early and freeze these products
- Brought in Swifter compensation payments to farmers affected by avian influenza
- And earlier this year we confirmed the release of an extra 10,000 visas under the Seasonal Worker Visa Route, with 2,000 of these going to the poultry sector, meaning in total 40,000 visas are available for seasonal workers in 2022 to help ensure businesses have the workforce they need

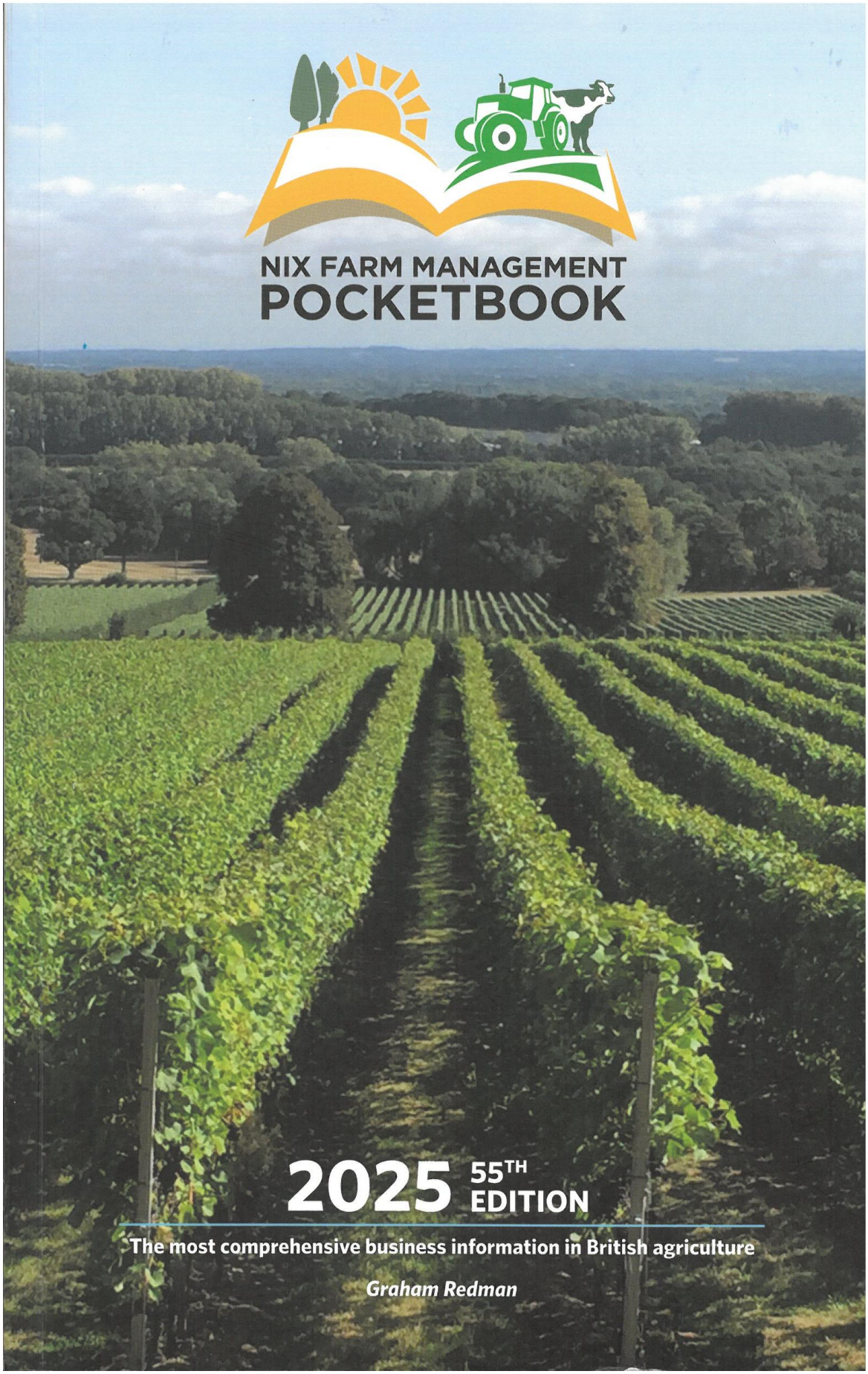
The Food and Farming Minister met representatives from the UK egg sector on 6 December to discuss the challenges that the industry is currently facing. This is part of our regular and close engagement with the sector.

Follow Defra on Twitter, and sign up for email alerts here.

Tags: direct payments, farming, food security, food supply, gas prices

Appendix KCC7

Extracts from the John Nix Pocketbook 55th Edition


NIX FARM MANAGEMENT
POCKETBOOK
2025 55TH 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)	7.1 (2.9)	8.3 (3.4)	9.5 (3.8)	
	£	£	£	£/t
Grain at £190/t	1,349	1,577 (639)	1,805 (731)	
Straw in Swath	188 (76)	188 (76)	188 (76)	
Total Output	**1,537 (622)**	**1,765 (715)**	**1,993 (807)**	***213***
Variable Costs £/ha *(£/ac)*:				
Seed.....		82 (33)		*10*
Fertiliser.....		295 (119)		*36*
Sprays.....		278 (112)		*33*
Total Variable Costs		655 (265)		*79*
Gross Margin £/ha (ac)	**882** (357)	**1110** (449)	**1,338** (542)	***134***

Fertiliser Basis 8.3t/ha

Nutrient	Kg/t	Kg/Ha	£/Ha
N	*23*	190	£184
P	7.0	58	£58
K	10.5	87	£52

Seed:

£/t C2	£515
Kg/Ha	175
% HSS	30%
£/t HSS	£354

prays £/ha:

Herbicides	£121
Fungicides	£110
Insecticides	£3
PGRs	£16
Other	£27

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 yield used for feed and milling wheats including spring varieties is 8.18t/ha (overall 10-year average *Defra)*.

   The table below offers a weighted estimate of yield variations according to wheat type based on a national yield of 8.4t/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 –

	Yield Adjustment	Winter	1st WW	2nd WW	spring	Total
t/ha		101%	102%	93%	85%	100%
Total	100%	8.27	8.40	7.61		**8.18**
Feed	101%	8.35	8.48	7.69		8.27
Bread	93%	7.69	7.81	7.08	6.02	7.61
Biscuit	99%	8.18	8.32	7.54		8.10

2. *Straw* is sold in the swath. Assuming 1 hectare is worth 2.5 tonnes baled straw at 4.2t/ha. So £75/tonne baled = £188/ha for winter wheat.
3. *Seed* is costed with a single purpose dressing. Up to a third of growers require additional seed treatments, specifically to supress BYDV. This can add £170/t of seed (£30/ha). 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 £190/hectare additional agrochemical costs. Yield losses increase as infestation rises:

BARLEY

Winter Feed Barley

Production level	Low	Average	High	
Yield: t/ha (t/ac)	6.2 (2.5)	7.30 (3.0)	8.4 (3.4)	
	£	£	£	£/t
Grain at £174/t	1,079	1,270	1,462	
Straw in Swath	204 (82)	204 (82)	204 (82)	
Total Output	**1,282 (519)**	**1,474 (597)**	**1,665 (674)**	***202***
Variable Costs £/ha *(£/ac)*:				
Seed.....		113 (46)		*15*
Fertiliser.....		244 (99)		*33*
Sprays.....		211 (86)		*29*
Total Variable Costs		568 (230)		*78*
Gross Margin £/ha (ac)	**715** (290)	**906** (367)	**1,097** (444)	***124***

Fertiliser Basis 7.3t/ha				**Seed:**		**Sprays:**	
Nutrient	Kg/t	Kg/Ha	£/Ha	£/t C	515	Herbicides	£88
N	*19*	140	£136	£/t HSS	343	Fungicides	£79
P	8.5	62	£62	Kg/Ha	175	Insecticides	£3
K	10.5	77	£46	£/Ha Hy	210	PGRs	£18
				C:Hy:HSS	50:25:25	Other	£24

1. *Prices*. Feed barley has a lower nutritional value to wheat so is normally discounted to feed wheat, by about 8% as used here (the average over 5 and 20 years).
2. *Hybrid Varieties.* Yields about 10% higher than the conventional varieties. Fertiliser is adjusted accordingly (25% of seed in this margin is hybrid).
3. *Straw* is sold in the swath. Assuming 1 hectare is worth 2.25 tonnes baled straw at 3.8t/ha (winter) and 2.0 tonnes baled at 3.4t/ha (spring). So £90/tonne baled barley Straw = £204/ha for winter barley, £182/ha for spring barley. Prices high in the West.

Winter Malting Barley Notes

Prices. Here, winter malting barley has a 10%, £17.40/t premium over feed barley. The gross margin accounts for 25% that does not meet malting standards.
Most spring barley grown is malting varieties, grown for a premium. Spring malting premiums usually exceed those for winter varieties. Here the premium over feed barley is13%, £23.00/t. This also allows for 20% failed samples.

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