South Brooks Solar Farm

Preliminary Environmental Information Volume 2: Appendix 7.1: Agricultural Land Classification Report

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1 Agricultural Land Classification Report

1.1 Agricultural Land Classification

1.1.1 A desk study of publicly available information was carried out to assess the likely Agricultural Land Classification (ALC) grade of an area of land in the south-east of Romney Marsh, near Lydd and New Romney. Also detailed are the preliminary results of an ALC soil auger survey of approximately 812 hectares of the approximately 1208ha proposed solar farm site, undertaken at a resolution of one observation per two hectares. Where augers are yet to be completed at the 1 per two hectare a predictive result has been used based on extrapolated data and available public data.

1.1.2 It should be noted that this is a predictive ALC technical note and further data is required before ALC Grades can be finalised. Therefore, it is expected that some of the grading will change as the auger data density is completed. There is considerable variation across the site so therefore it is expected that smaller areas of soil variation will be identified within the 1 auger per hectare scale.

1.1.3 The information assessed was:

- ALC data recorded in 2025/26
- Landis Soil Associations[1];
- Ordnance Survey (OS) mapping and aerial photography[2];
- British Geological Survey maps (bedrock and superficial geology)[3];
- Likelihood of Best and Most Versatile (BMV) agricultural land map[4];
- Previously accepted detailed agricultural land classification (ALC) maps, available via Defra magic mapping application[5];
- Provisional ALC maps, available via Defra magic mapping application[6]; and
- Climate data sets for ALC assessment[7].

[1] Cranfield University. LandIS Soil Associations. Available at: https://www.landis.org.uk/soilscapes/.
[2] Google Earth (2024). Ordnance Survey Mapping and Aerial Photography [online]. Available at: https://www.earth.google.com.
[3] British Geological Survey, BGS Geology Viewer [online]. Available at: https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/.
[4] Natural England (2017). Likelihood of Best and Most Versatile (BMV) Agricultural Land – Strategic scale map East Midlands and Eastern region (ALC019). Available at: Natural England Access to Evidence - Likelihood of Best and Most Versatile Agricultural Land.
[5] DEFRA, Magic Map Application [online]. Available at: https://magic.defra.gov.uk/MagicMap.aspx
[6] Note that DEFRA have recently published a new Predictive Agricultural Land Classification Map for England, which has been published as part of the Land Use Framework. Available at: Predictive Agricultural Land Classification Map for England

Climate

1.1.4 The agricultural climate is an important factor in assessing the agricultural land quality. The agricultural climate of the South Brooks site has been calculated using the Climatological Data for Agricultural Land Classification[7]. The relevant data for two areas are given below.

Table 1-1: ALC agro-climatic data

Grid Reference	TR021221 (Area A)	TR054210 (Area D)
Altitude	3 m	3 m
Average Annual Rainfall (AAR)	675 mm	664 mm
January-June Accumulated Temperature (AT0)	1512 day °C	1513 day °C
Field Capacity Days (FCD)	139	136
Field Capacity Period	late Oct – mid Mar	late Oct – mid Mar
Moisture Deficit Wheat (MDW)	129 mm	129 mm
Moisture Deficit Potatoes (MWP)	127 mm	128 mm
Climate (upper grade limit)	1	1

1.1.5 The site is located on the south-east coast of England. There is no agro-climatic limitation to agriculture on the site.

Geology

1.1.6 1:50,000 scale British Geological Survey (BGS) information records the bedrock geology of the site as Wealdon Group sandstone, siltstone and mudstone. These are sedimentary rocks which are fluvial, palustrine and shallow marine in origin, formed between 145 and 125.3 million years ago during the Cretaceous period. This is overlain by tidal flat sand superficial deposits.

Previous Agricultural Land Classification

1.1.7 No detailed post-1988 agricultural land classification is publicly available for this site. An ALC survey for a location adjacent to the north-east boundary of the site reported land as Subgrade 3a and 3b quality. An ALC survey of land approximately 1 km to the south-west of the site, adjacent to Camber Sands, reported land of predominantly Subgrade 3b quality.

1.1.8 The Provisional ALC map, published at 1:250,000 scale , records the land as being of Grade 1 to 4 quality. Areas A and B are mapped as Grade 1 or 2 and Areas C, D and E mapped almost entirely as Grade 3. Note that the provisional ALC maps are intended for strategic use only and are not sufficiently accurate for use in the assessment of individual fields or sites.

Soils

1.1.9 The National Soils Map, published at 1:250,000, records the soil associations present at the site as Romney, Wallasea 2 and Sandwich. Romney soils are typically deep stoneless permeable

[7] Meteorological Office, (1989). *Climatological Data for Agricultural Land Classification*.

calcareous coarse and fine silty soils on flat land with groundwater controlled by ditches and pumps. Wallasea 2 soils are typically deep stoneless clayey soils, calcareous in places, on flat land often with low ridges giving a complex soil pattern, and with groundwater controlled by ditches and pumps. Sandwich soils are typically deep well drained sandy soils, with some sparsely vegetated unstable soils and a risk of wind erosion.

Agricultural Land Classification

1.1.10 The Agricultural Land Classification (ALC) system[8] provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use for food production. 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 crop yield, the consistency of crop yield, and the cost of obtaining a crop.

1.1.11 The classification system gives considerable weight to flexibility of cropping, whether actual or potential, however the ability of some land to produce consistently high yields of a narrower range of crops is also taken into account.

1.1.12 The Agricultural Land Classification (ALC) system classifies land into five grades numbered 1 to 5, with grade 3 divided into two subgrades (3a and 3b). The system was devised and introduced by the Ministry of Agriculture, Fisheries and Food (MAFF now Department for Environment, Food and Rural Affairs, Defra) in the 1960s and revised in 1988 with minor updates in 2025. A description of the grades used in the ALC system is attached to this report in the Appendix 1.

1.1.13 For this site there is no overall climatic limitation to the ALC grade of the land. The land quality will be limited by either soil wetness or soil droughtiness.

[8] Defra 2025. Agricultural Land Classification of England and Wales, *Guidelines for grading the quality of agricultural land* (Updated 2025).

Figure 1-1: Site Map

1.1.14 ADAS has completed 406 soil auger borings on the land across the site to assess soil profiles between October 2025 and March 2026, assessing approximately 812 hectares of the site. Preliminary findings are detailed below in Table 1-2.

Table 1-2: Preliminary ALC Grades (%s in brackets)

Site Area	No. of auger borings of each preliminary ALC grade				
	1	2	3a	3b	4
A	2 (0.8)	130 (54.1)	89 (37)	15 (6.3)	4 (1.7)
B	0 (0)	2 (4.7)	12 (27.9)	29 (67.4)	0 (0)
C	1 (1.4)	40 (55.6)	22 (30.6)	8 (11.1)	1 (1.4)
D	1 (3.4)	27 (93.1)	0 (0)	1 (3.4)	0 (0)
E	0 (0)	8 (36.4)	5 (22.7)	9 (40.9)	0 (0)

1.1.15 It should be noted that ALC grading of land requires soil pit data to confirm the gradings produced by the auger boring survey. Assessment of soil pits provides soil structural information which is not possible to assess with an auger. Three soil pits were dug in Area A, as it was apparent that soil structure and porosity were critical to the grading of this land which is mapped in the National Provisional ALC Map as being of Grade 1 or 2 quality. Soil pit findings have thus far only been used to refine the ALC grading in Area A.

1.1.16 It should also be noted that the percentages of soil auger borings falling into each ALC grade can be misleading and 'over grade' land quality. The ALC process maps the 'farmability' of the land. Where relatively small areas are recorded as being of higher quality than surrounding land, the entire area may be mapped at the lower grade when it would not be practicable for the farmer to differentially farm the land.

1.1.17 The two factors which limit land quality for farming at this location are soil wetness and soil droughtiness. The soil wetness limitation is assessed in two stages. Firstly, the soil wetness class of the land is calculated using local climate data, depth to gleying in the soil and depth to a slowly permeable layer (if present), with land least affected by soil wetness in Wetness Class 1. Secondly, the ALC soil wetness grade is calculated using the climate data, Wetness Class, top 25cm soil texture and topsoil and subsoil calcareousness. At this location, with approximately 139 Field Capacity Days, even land in Wetness Class 1 cannot be graded higher than ALC Grade 2 unless the top 25cm of soil has a clay content of less than 27% (medium sandy clay loam, medium silty clay loam or medium clay loam top 25cm). Land with heavier top 25cm, such as heavy clay loam or clay, cannot be Grade 1 due to a soil wetness limitation. Laboratory particle size distribution analysis of the topsoil from the three soil pits dug in Area A reported clay textured top 25cm, with between 39 and 45% clay content. The top 25cm soil textures of all soil auger boring profiles in Area A were assessed by hand, with almost all results in the area Natural England provisionally mapped area as Grade 2 being assessed as >27% clay content.

1.1.18 The second main limitation at South Brooks is soil droughtiness. ALC drought calculations compare the available water in the soil profile (to a depth of 120 cm) with the moisture deficit to calculate the

moisture balance. South Brooks has a relatively large moisture deficit of between 127 and 129 mm, as detailed in the ALC climate data. Droughtiness calculations require details of the soil profile, including soil horizon textures and structures, as well as stone content and stone type. When the soil structures reported for the three soil pits are used to inform the drought calculations of the 447 soil auger boring observations recorded, all are limited by soil droughtiness to Grade 2 or lower.

1.1.19 For reasons detailed in the two sections above, it is very unlikely that any mappable areas of ALC Grade 1 are present within the Site, as land with heavy soils are limited by soil wetness and droughtiness and areas with lighter soil are limited by soil droughtiness.

1.2 Summary of findings in each area

Area A

1.2.1 Currently, 240 auger boring observations and 3 soil pits have been completed in Area A. The majority of the survey area has clayey topsoils and subsoils. The subsoils examined in the soil pits were gleyed immediately below the topsoil, moderately well-structured and porous. This places them in Wetness Class II and, with top 25cm and soil below calcareous, this land is mostly limited to ALC Grade 2 by soil wetness. These areas are also limited to ALC Grade 2 or 3a by soil droughtiness.

1.2.2 Whilst most of the surveyed land in Area A has relatively consistent clayey soils, soils in the north-east of the area are more variable, with clayey and sandy soils frequently in close proximity. Individual auger boring survey results ranged from Grade 2 to Grade 4 in this location, with the poorer quality farmland limited by soil droughtiness due a combination of sandy soils and a large moisture deficit.

1.2.3 The soil memoir for Romney Marsh[9] describes and maps the land at the South Brooks site in great detail. Soils mapped in the un-surveyed area are similar to those to the immediate east which have been assessed by the recent survey work as either Grade 2 or Subgrade 3a, with mostly clay loam and clay soils. Given the topographical and soil similarities of the two areas, it is likely that the land will be of similar quality.

1.2.4 A 1 auger per hectare survey scale of the unsurveyed land is expected to produce similar results with the soils being predominately clayey with patches of sandy soils. The clayey soils will be predominantly limited by wetness and the sandy soils will predominantly limited by droughtiness. The ALC Grades for Area A are predicted to be Grades 2 and Subgrade 3a with the possibility of small areas of Subgrade 3b or Grade 4 being shown on the 1 auger per hectare scale.

1.2.5 It is likely that the vast majority of Area A will be Best and Most Versatile (BMV) land, although none of this area is likely to be of Grade 1 quality. Relatively small areas of land to the north-east may be mapped as of lower quality and non-BMV.

Area B

1.2.6 Currently, 43 auger boring observations have been completed in Area B, assessing the entire area at a resolution of one observation per two hectares. The soil memoir maps much of the land to the west of Area B as imperfectly draining clayey soils, but with moderately well-draining clayey soils to the east. Preliminary ALC survey findings appear to match this, with land to the west and north of the area reported as having slowly permeable subsoils and limited to Subgrade 3b by soil wetness, but land to

[9] Soils of Romney Marsh, R.D.Green, 1968

the east having more permeable subsoils and mapped as Subgrade 3a by a soil wetness or soil droughtiness limitation. It should be noted that soil pits are required to confirm the presence or absence of slowly permeable subsoils in order to confirm the gradings.

1.2.7 It is likely that the western half of Area B will not be Best and Most Versatile (BMV) land, whereas the east of the area may be BMV.

Area C

1.2.8 Currently, 72 auger boring observations have been completed in Area C, assessing the entire area at a resolution of one observation per two hectares. Several soil types are present in this area, with some poorly draining clayey soils located mostly to the west and some sandier free draining soils to the far east of the area. The soil memoir maps much of the land, particularly to the centre and east of the area as having imperfectly draining subsoils. Further assessment of soil drainage properties is required to confirm the grading of this land, but preliminary findings suggest that most of the area is BMV, but potentially with areas of either poorly draining land or droughty land limited to Subgrade 3b (non-BMV).

1.2.9 It is likely that most of Area C will be Best and Most Versatile (BMV) land, although further investigation by soil pits will be required to confirm land quality.

Area D

1.2.10 Currently, 29 auger boring observations have been completed in Area D, assessing the entire area at a resolution of one survey per two hectares. Similar soil types were reported by the ALC survey as in the central part of Area A, namely clayey topsoils and subsoils that are predominantly limited by wetness.

1.2.11 It is likely that most of Area D will be Best and Most Versatile (BMV) land, although further investigation by soil pits will be required to confirm land quality.

Area E

1.2.12 Currently, 22 auger boring observations have been completed in Area E, assessing the entire area at a resolution of one survey per two hectares. The soil memoir maps this land as having both moderately drained and imperfectly drained soils. The ALC survey at one observation point per 2 hectares reported land of ALC Grade 2, 3a and 3b quality and mapping will not be possible until the remaining half of the survey in this area has been completed and soil pits examined. This area is entirely on Romney soil association and the predicted grades are Grade 2 and Subgrades 3a and 3b.

1.2.13 It is likely that Area E will be a mix of BMV and non-BMV land, with a full survey required to map this area and confirm land quality.

A1 Annex 1 – Description of ALC Grades

A1.1 ALC Grades

A1.1.1 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. The 'best and most versatile agricultural land' falls into grades 1, 2 and subgrade 3a – which collectively comprises about one-third of the agricultural land in England and Wales. About half the land in England and Wales is either of moderate quality (subgrade 3b) or poor quality (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.

Grade 1 – excellent quality agricultural land

A1.1.2 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

A1.1.3 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 land

A1.1.4 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

A1.1.5 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

A1.1.6 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

A1.1.7 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 agriculture land

A1.1.8 Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

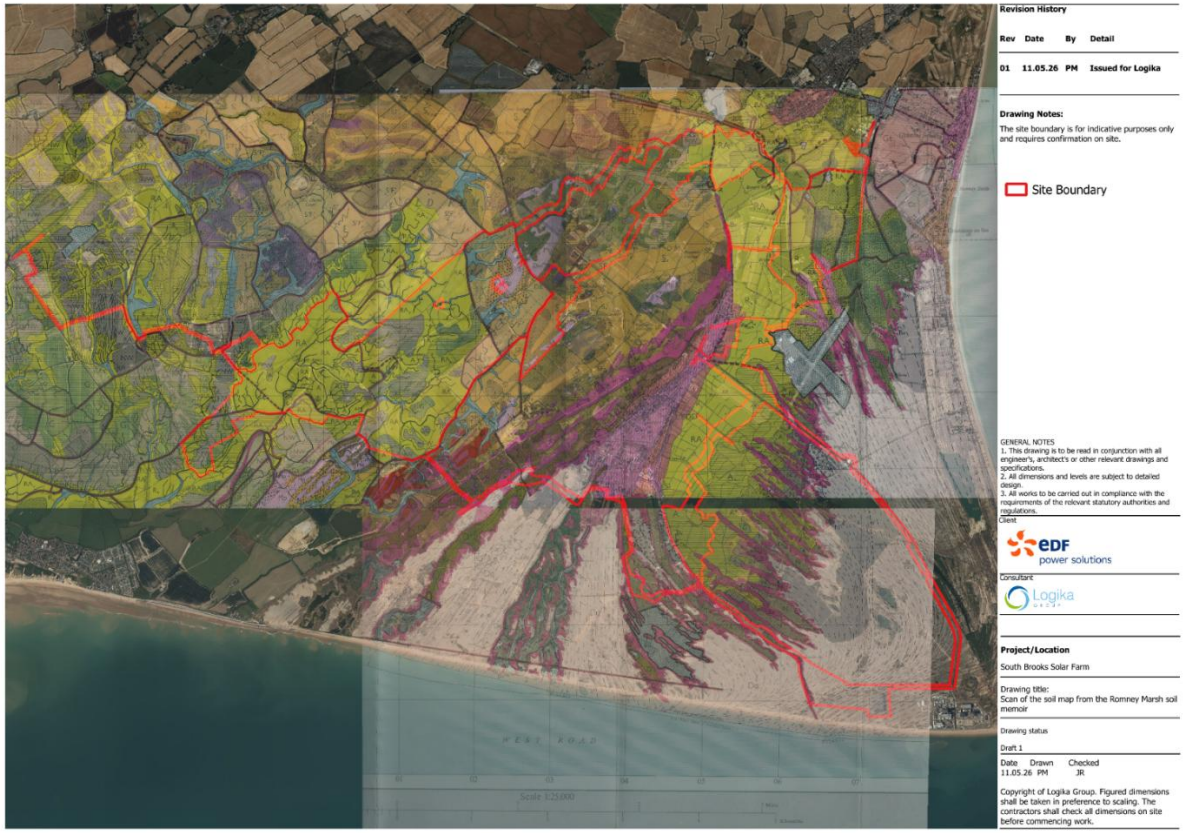

Figure A1: Scan of the soil map from the Romney Marsh soil memoir[10]

[10] [10] Soils of Romney Marsh, R.D.Green, 1968

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