



Agricultural Impact Assessment Report

Chimmens Solar Farm, Kent

Prepared for:

RES Group
Beaufort Court
Egg Farm Lane
Kings Langley
WD4 8LR

Report prepared by:

James Bairstow BSc (Hons) MBPR (Fert) ALC

5 South View
Stamford
Lincolnshire
PE9 2JL

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1. Executive Summary

Strutt & Parker have been instructed by Renewable Energy Systems Ltd to carry out an Agricultural Impact Assessment of the land situated near Fawkham Green, Kent for a proposed renewables development. This site is referred to as Chimmens Solar Farm. The proposed solar farm will have an operational lifetime of 40 years and therefore is considered as temporary development.

The site is located North East of the M20 and to the West of Fawkham Green off Mussenden Lane. The site is centred on the grid reference TQ 56845 66776. The development land in question covers c.99 hectares (Ha) and is currently in agricultural use (farmed under a grassland and arable rotation).

The description of development is as follows: *Construction and operation of a solar farm with all associated works, equipment, necessary infrastructure and biodiversity net gains.*

The assessment of impacts has been benchmarked against guidance from the Institute of Environmental Management & Assessment (IEMA), DEFRA and National Planning Policy Framework.

This report presents an assessment of the potential impacts the proposed scheme has on Agriculture in the locality. The quality of the Agricultural Land in question has been determined as predominantly Grade 2 'Very-Good Quality' Agricultural Land with some smaller pockets of Grade 3a/3b 'Moderate Agricultural Land', as per the results of a site specific Agricultural Land Classification report. The surrounding land in a 10km radius has been highlighted as Grade 2 and Grade 3 'Excellent to Good' Agricultural Land based on provisional Agricultural Land Classification data from MAFF 1988. Therefore, the temporary change of land use is considered to be a slight impact in the context of the available agricultural land in the local region.

The proposed development includes a number of key design measures. Firstly, approximately 15Ha of Skylark habitat will be created by the proposed development. Alongside other native woodland and hedgerow planting, the proposed development will achieve significant biodiversity net gain which is further detailed in the Ecological Appraisal Report which supports this planning application. Secondly, the proposed development does not permanently remove or seal the land. Solar infrastructure can be easily installed and decommissioned and the land returned to agricultural use. Finally, the proposed project includes for 'dual agri-solar' use. The areas under the panels will be planted with a species rich grazing mixture which will support sheep grazing and therefore retain agricultural practices at the farm. Overall, the temporary land use change will have a significant positive effect on Speedgate Enterprises Ltd.

2. Assessment Methodology

2.1 Guidance

The methodology adopted by this study has been derived from the present planning advice from central and local government coupled with the IEMA Guide: A New Perspective on Land and Soil in Environmental Impact Assessment¹ which provides factors which ought to be covered in an assessment of the impacts of development proposals upon agriculture.

National land use development policies contained within the National Planning Policy Framework² (NPPF) paragraph 174 seeks to recognise and enhance the economic and other benefits of the Best and Most Versatile (BMV) agricultural land. The NPPF states that proposals should demonstrate that development of poorer quality land has been given preference. Notwithstanding, NPPF paragraph 84 also states that decisions should enable the development and diversification of agricultural and other land-based rural businesses.

DEFRA's Soil Strategy for England³ which seeks to encourage the sustainable management of soil resources. DEFRA has also published a Code of Practice⁴ for the sustainable use of soils on construction sites which requires:

- Identification of soil resources at an early stage in the development process;
- Improved planning of soil use;
- A better level of soil management during project implementation, including sustainable use of surplus soil;
- Maintenance of soil quality and function, both on and off site;
- Avoidance of soil compaction and erosion (aiming for a reduction in flooding and water pollution); and
- An improved knowledge of soil at all levels in the construction industry, including soil amelioration techniques.

2.2 Sources of information

The information justifying the extent and quality of agricultural land that would be effected by the proposed development has been assessed by way of a desk-top evaluation and using the results of the site specific Agricultural Land Classification by Soil Environment Services Ltd (Ref: SES/PG/SGS/#5) which is submitted separately in support of the planning application. Information regarding the existing farm business has been provided by the client and the availability of agricultural land in the regional locality has been gathered from Natural England's ALC maps⁵.

¹ <https://www.iema.net/resources/blog/2022/02/17/launch-of-new-eia-guidance-on-land-and-soils>

² <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

³ <https://www.gov.uk/government/publications/safeguarding-our-soils-a-strategy-for-england>

⁴ <https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites>

⁵ <https://publications.naturalengland.org.uk/publication/141047?category=5954148537204736>

2.2 Assessment Methodology

At the time of writing, there is no industry standard guidance on the assessment of impacts of a change in land use from traditional agricultural practices to large scale ground mounted renewable solar generation. Natural England guidance⁶ states that developments of over 20Ha require consultation. The IEMA Guide uses Design Manual for Roads and Bridges (DMRB, LA109) which refers to the “permanent, irreversible loss” of soil functions or soil volumes. Solar modules will be mounted on steel frames which have a very small footprint on the ground. The proposed development does not remove soil and it does not permanently seal the ground. The proposed change of use represents diversifying away from intensive agricultural and cultivation practices. In the long term, this change is expected to increase levels of soil organic matter helping to improve the existing agricultural land resource. Therefore, in the absence of standardised methods, professional judgement has been employed when assessing magnitude of impact on ALC.

The sensitivity of the land is aligned with the Agricultural Land Classification (ALC) grading set out in Table 1 below. The magnitude of impact and the rating of potential impacts is based on the IEMA Guide.

Table 1: Receptor Sensitivity

Receptor Sensitivity	Agricultural Land Classification
High	Grade 1
Medium	Grade 2 & 3a
Low	Grade 3b & 4
Negligible	Grade 5

Table 2: Magnitude of impact

Magnitude of Impact/Change	Description of impact on agricultural land
High	>20 hectares
Medium	5-20 hectares
Low	1-5 hectares
Negligible	<1 hectare

Table 3: Potential impacts

Sensitivity	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Large or very large	Moderate or large	Slight or moderate	Slight
Medium	Moderate or large	Moderate	Slight	Neutral or slight
Low	Slight or moderate	Slight	Neutral or slight	Neutral or slight
Negligible	Slight	Neutral or slight	Neutral or slight	Negligible

⁶ <https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-development-proposals-on-agricultural-land>

2.3 Consultation with Sevenoaks District Council

Sevenoaks District Council issued pre-application advice in May 2023 requesting that the planning application to be supported by the following assessments:

“...it would need to be demonstrated by using a sequential test to determine why the use of this agricultural land is necessary, e.g. why has this site been chosen over other sites and why is it not possible for poorer quality land/brownfield land to be used. Further to this, it is expected that a further planning assessment of the impact of the temporary loss of this land upon the economy, both locally and regionally and upon the farm unit itself (both positive and negatives).”

2.4 Scope of assessment

The scope of this assessment is to identify the potential impacts of the proposed development on the following:

- a) The impact on Agricultural Land Classification (ALC); and
- b) The impact on the existing farm business.

The planning application is informed by a Sites Alternative Study (Pegasus) which assesses the potential alternative locations for solar generation using a sequential approach to assess a wide range of constraints including agricultural land classification.

3. Baseline Conditions

3.1) Soil Parent Material

Geological data held by the British Geological Survey (BGS) indicates that the bedrock geology underlying the site comprises of Lewes Nodular Chalk Formation, Seaford Chalk and Newhaven Chalk Formation. There are no superficial deposits overlying the site.

SoilScapes⁷ data shows the soils on site in the west and central portion to be 'Freely draining lime-rich loamy soils'. The eastern portion is shown to be 'Slightly acid loamy and clayey soils with slightly impeded drainage.' In regard to soil associations⁸, the northwest of the site is identified as Coombe 1 Association and the, comprising fine silty soils deep in valley bottoms and shallow to chalk on valley sides in places. The southeast of the site is of the Batcombe Association comprising fine silty over clayey and fine loamy over clayey soils with slowly permeable subsoils.

3.2) Agricultural Land Classification

The Agricultural Land Classification (ALC) system 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 principle physical factors influencing agricultural production are climate, site and soil. These factors together with interactions between constitute to the final grading:

- Grade 1 land being of excellent quality;
- Grade 2 of being very good quality;
- Grade 3 of good/moderate quality, constitutes half of the Agricultural Land in England and Wales and is now split into subgrades 3a and 3b; and
- Grade 4 of poor quality and Grade 5 of very poor quality.

Desktop research indicates that the majority of Chimmens Solar Farm is located within ALC Grade 3 land. Appendix B shows the expected Agricultural Land Classification grading according to Natural England's regional ALC maps⁹.

Table 4 presents the results of the site specific soil survey undertaken in October 2022 as per the Soil Environmental Services Ltd ALC Report (Ref: SES/PG/SGS/#5) for the proposed Chimmens Solar Farm. Appendix C shows the final ALC grading for the site. The results indicate that the majority of the site is ALC Grade 2 i.e. BMV.

Table 4: Agricultural Land Classification at Chimmens Solar Farm

ALC Grade	Description	Area (ha)	Area (%)	Limiting Factor
1	Excellent quality	-	-	-
2	Very good quality	76	79.2	Droughtiness
3a	Good quality	17	17.7	Droughtiness, Wetness

⁷ <https://www.landis.org.uk/soilscapes/>

⁸ https://www.landis.org.uk/soilsguide/mapunit_list.cfm

⁹ <https://publications.naturalengland.org.uk/category/5954148537204736>

ALC Grade	Description	Area (ha)	Area (%)	Limiting Factor
3b	Moderate quality	3	3.1	Gradient
4	Poor quality	-	-	-
Non Agricultural		-	-	-
Total		96	100%	

3.3) Existing Farm Business

The site is wholly owned by one entity, the Hollands Family. It is neighbored on its Northern, Eastern and Southern boundary by land belonging to the same entity. The Hollands family operate a very diverse business employing 50 employees in the locality known as Speedgate Enterprises Ltd. This business encompasses agricultural operations over their farmed acreage consisting of arable and grassland farming, a saddlery & feed barn, industrial units and 75 livery stables.

At present the grass and straw products sourced from the grassland and arable land of the proposed development area contribute a very small percentage (c. 3%) to the business revenue and there is an abundance of other sources available in the regional and national scale to replace these products. This proportion is of very little concern due to the low returning nature of products associated with this agricultural enterprise.

3.4) Proposed Development and Site Boundaries

The description of development is as follows: *Construction and operation of a solar farm with all associated works, equipment, necessary infrastructure and biodiversity net gains.* The physical footprint of the proposed development includes internal access tracks, the feet of the solar PV racks, hardstanding for inverters and storage equipment, and substation area as identified in Table 5 below.

Table 5: Chimmens Solar Farm - physical footprint

Infrastructure	Footprint m2	Footprint Ha
Internal access tracks	16,239	1.62
Poles of solar PV racks	6895	0.69
Inverter and Storage equipment	4414	0.44
Substation area	3705	0.37
Total footprint	31,253	3.12

The soil sample survey undertaken by Soil Environment Services Ltd in October 2022 was approximately 166Ha in size and included land to the north of Mussenden Lane. Through design evolution, solar development of land to the north of Mussenden Lane was avoided. The October 2022 survey areas includes a proportional split of 84% Grade 2 and 16% Grade 3. The final Chimmens Solar Farm design redline boundary area represents 74% Grade 2 and 26% Grade 3.

Chimmens Solar Farm planning application boundary is approximately 99Ha. The assessment of impact on ALC focuses on the 96ha of farmland to the north of Horton Wood as shown on Appendix C where the vast majority of solar infrastructure is located. The remaining 3Ha is located to the south of Horton Wood and includes temporary working areas, temporary access lanes and the substation to the south of Gabriel Spring Road (East). As stated in the Soil Environment Services Ltd report, the area

to the south of Gabriel Spring Road (East) where the Chimmens Solar Farm substation is proposed, was subject to a separate ALC survey which identifies this area of land as ALC Grade 3a.

The Chimmens Solar Farm landscape masterplan (Appendix D) identifies the proposals for landscape planting of native woodland and hedgerows alongside the 15Ha of skylark habitat creation. The landscape masterplan is also provided in the Landscape and Visual Appraisal (Appendix 7) submitted separately. Within the development boundary there is no solar infrastructure proposed on Skylark Areas 1a and 1b which is approximately 4.5Ha. Skylark Area 2 is located to the north of the development boundary and is approximately 10.5Ha. This field will be retained by the landowner for continued use in grass and straw production.

4. Potential Impacts

4.1) Agricultural Land Classification

Agricultural land grading at Chimmens Solar Farm is confirmed by the Soil Environment Services Ltd site survey (October 2022). The ALC maps (Appendix B) show the 10km surrounding area encompasses predominately good (Grade 3) to very good quality (Grade 2) agricultural land. Therefore, in terms of BMV (Grade 1-3a), it is anticipated that there is a significantly large amount of high quality agricultural resource within 10km of the Chimmens Solar Farm.

Furthermore, the surveyed area of 166Ha compared to the development area of 96Ha demonstrates that the design evolution of Chimmens Solar Farm has sought to develop poorer agricultural land where possible. According to the survey results October 2022 (Appendix C), the central area of Chimmens Solar Farm is ALC Grade 3b and poor quality land. The design has maximised the solar development of this area of the farm. Furthermore, the survey results October 2022 indicate that the area to the north of Mussenden Lane is entirely ALC Grade 2 and solar development has avoided this area of the farm. This design evolution aligns with NPPF Paragraph 175 footnote 58: *'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'*.

On the basis of the assessment methodology presented in section 2, the physical footprint of Chimmens Solar Farm is less than 5Ha of the overall development area and therefore considered to be a low magnitude of impact. The site specific ALC survey identifies that the majority of the site is Grade 2/3a and therefore receptor sensitivity is considered to be medium. In line with Table 3, the potential impact on Agricultural Land Classification is considered to be slight.

4.3) Impact on existing farm business

The development area (96Ha) contributes to approximately 3% of the existing farm business through the sale of grass and straw products grown on this part of the farm. These products will continue to be produced by Speedgate Enterprises Ltd on the land retained in agricultural practice to the north of Mussenden Lane and to the northwest of the Chimmens Solar Farm. Therefore, the change in land use will help to diversify and secure income for Speedgate Enterprises Ltd for the 40 year duration of the proposed solar project which will help protect existing jobs at the business.

The design of Chimmens Solar Farm has retained all Public Rights of Way and private recreational horse riding routes associated with the existing livery business. Furthermore, the access strategy for construction and operational stages of the solar farm have avoided the main entrance to Speedgate Enterprises Ltd. These design measures ensure that the existing farm businesses can continue alongside the operation of Chimmens Solar Farm.

Overall, the temporary land use change will have a significant positive effect on Speedgate Enterprises Ltd.

5. Conclusion

Planning permission is sought from Sevenoaks District Council for a renewables development known as Chimmens Solar Farm on land at Mussenden Lane. The proposal would be operational for 40 years and given the low intrusive nature of solar module tables and reversible construction techniques, it is therefore considered temporary development. Pre application advice from Sevenoaks DC received in May 2023 requested that the planning application considers the following aspects: agricultural grading of land, sequential assessment of alternative land, impact of temporary loss on local economy and upon the farm business itself.

An Agricultural Impact Assessment has been undertaken. Following an agricultural land classification survey in 2022, the majority of the proposed site is BMV. However, in the context of the regional availability, there are significantly high levels of BMV within 10km of the site and therefore the temporary proposal does not impact the regional availability. Furthermore, the ALC survey demonstrates that through design evolution, the proposed development has focused on developing areas within the site which fall into poor quality land and therefore on this basis, the proposal aligns with NPPF Paragraph 175. Chimmens Solar Farm proposes a temporary change of agricultural practices in a long established farming business. The proposal will include dual agri-solar use of the site whereby solar electricity generation alongside sheep grazing and therefore the entire development area retains the agricultural side of the existing farming business. The Agricultural Impact Assessment also demonstrates that the proposed development will diversify the existing Speedgate Enterprises Ltd aligning with NPPF Paragraph 84. Chimmens Solar Farm will create long term sustainable income from clean, green renewable energy which will protect and promote employment at the existing farming business.

6. References

DEFRA Soil Strategy Plan, Safeguarding our Soils. 2009.

Institute of Environmental Management & Assessment (IEMA). 2022

National Planning Policy Framework. 2023

Agricultural Land Classification Survey, Soil Environmental Services Ltd. 2022.

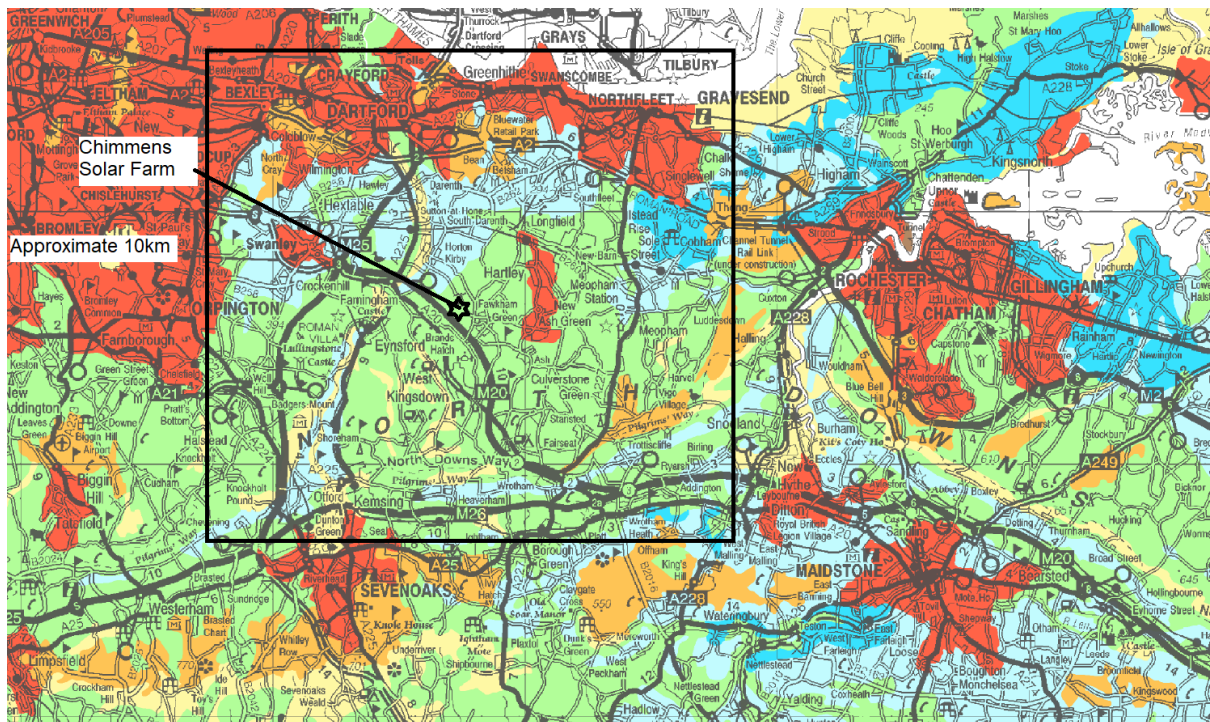
Chimmens Solar Farm Landscape Masterplan, Pegasus. 2023.

Appendix A: Statement of Competence

The agent carrying out the report is JWE Bairstow BSc (Hons). He holds a second class, upper division honours degree from Harper Adams University, Shropshire. He graduated in 2008, managed two 4000 ha farming businesses from 2009-2021 and joined Strutt & Parker in 2021. He specialises in land use management and advises private clients on the profitable and sustainable operational practice of their land. He farms in his own right on a 300 acre grassland farm on the edge of the Yorkshire Dales. He is a fully qualified agronomist (holding both FACTS and BASIS qualifications).

He is qualified through the British Association of Soil Scientists to carry out Agricultural Land Classification Surveys and has acted for a number of high profile clients in these matters. His academic credentials and experience in the industry with this particular field makes him more than suitably qualified to prepare this report.

Appendix B: Natural England's Regional Agricultural Land Classification Map



Grade	Description
1	Excellent
2	Very Good
3	Good to Moderate
4	Poor
5	Very Poor

Non-Agricultural Land

- Other land primarily in non-agricultural use
- Land predominantly in urban use

Appendix C: Soil Environmental Services - Agricultural Land Classification Map

Red line boundaries are the development area within the survey area.

