

Heckington Fen Solar Park

EN010123

Environmental Statement | Volume 3: Technical Appendices Appendix 16.2: Agriculture and Soils Significant of Effect Methodology

Applicant: Ecotricity (Heck Fen Solar) Limited

Document Reference: 6.3.16.2

Pursuant to: APFP Regulation 5(2)(a)

February 2023



**APPENDIX 16.2 AGRICULTURE AND SOILS:
SIGNIFICANCE OF EFFECT METHODOLOGY**

Document Properties		
Regulation Reference	Regulation 5(2)(a)	
Planning Inspectorate Scheme Reference	EN010123	
Application Document Reference	6.3.16.2	
Title	Appendix 16.2 Agriculture and Soils: Significance of Effect Methodology	
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Version History		
Version	Date	Version Status
Rev 1	February 2023	Application Version

Appendix 16.2 Agriculture and Soils: Significance of Effect Methodology

This Appendix sets out the criteria used to determine sensitivity (Table 1) and magnitude (Table 2) for agricultural soils followed by the matrix used to determine the resulting significance of effects (Table 3).

Table 1: Methodology for Determining Sensitivity for Agriculture and Soils

Sensitivity	ALC/biomass production ¹	Sensitivity of topsoil and subsoil ²	Agricultural businesses
Very high	Land of ALC Grades 1 and 2	–	–
High	Land of ALC Subgrade 3a	High clay soils where the FCD ³ is >150, or medium textured soils where the FCD is >225	–
Medium	Land of ALC Subgrade 3b	High clay soils where the FCD is <150, or medium textured soils where the FCD is <225	Full-time businesses, and farm businesses where the location of land is particularly important such as diary farms. Farms affected outwith the site boundary.
Low	Land of ALC Grades 4 and 5	Soils with a high sand fraction where the FCD is <225	Part-time farms or farms with low sensitivity to change, eg arable land held on short-term arrangements.
Negligible	Land of ALC Grades 4 and 5 with only indirect links	–	Agricultural land that is not farmed or does not form part of a farm business.

¹ IEMA Table 2

² IEMA Table 4. For the full list please refer to the IEMA Guide (2022) Table 4

³ Field Capacity Days, ie days when the soil is replete with water

Table 2: Methodology for Determining Magnitude of Change for Agriculture and Soils

Magnitude of Effect	Definition	
	Effects on Agricultural Land (Soils)	Effects on Farm Businesses (agricultural businesses)
Major	The Proposed Development would directly lead to the loss (including permanent sealing or land quality downgrading) of one or more soil functions or soil volumes over an area of over 20 hectares of soil-related features; or potential for improvement in one or more soil functions over an area of more than 20 ha.	The impact of development would render a full-time agricultural business non-viable.
Moderate	The Proposed Development would directly lead to the loss (including permanent sealing or land quality downgrading) of one or more soil functions or soil volumes over an area of between 5 and 20 hectares of soil-related features; or potential for improvement in one or more soil functions over an area of between 5 ha and 20 ha.	The impact of the development would require significant changes in the day-to-day management of a full-time agricultural business, or closure of a part-time agricultural business. Loss of buildings or impacts on drainage or water supplies affecting the potential for at least 5 ha of adjacent land to be farmed fully.
Minor	The Proposed Development would directly lead to loss (including permanent sealing or land quality downgrading) of one or more soil functions or soil volumes over an area of less than 5 hectares of soil-related functions; or potential for improvement in one or more soil functions over an area of less than 5 ha.	Land take would require only minor changes in the day-to-day management / structure of a full-time agricultural business or land take would have a significant effect on a part-time business. Minor effects, direct or indirect, on surrounding land beyond the boundaries of the Site.
Negligible	No discernible loss or reduction or improvement of soil functions or volumes.	Land take would require only negligible changes in the day-to-day management of a full-time agricultural business or land take would require only minor changes to a part-time farm business

Table 3: Methodology for Determining Significance

		Sensitivity of Receptor / Receiving Environment to Change / Effect				
		Very high	High	Medium	Low	Negligible
Magnitude of change / effect	Major	Very large	Large or very large	Moderate or large	Slight or moderate	Slight
	Moderate	Large or very large	Moderate or large	Moderate	Slight	Neutral or slight
	Minor	Moderate or large	Slight or moderate	Slight	Neutral or slight	Neutral or slight
	Negligible	Slight	Slight	Neutral or slight	Neutral or slight	Neutral or slight
	No Change	Neutral	Neutral	Neutral	Neutral	Neutral