

Cottam Solar Project

Environmental Statement Chapter 23 Summary of Significant Effects

Prepared by: Lanpro Services
January 2023

PINS reference: EN010133
Document reference: APP/C6.2.23
APFP Regulation 5(2)(a)





Contents

23	SUMMARY OF SIGNIFICANT EFFECTS	3
23.1	SUMMARY AND INTRODUCTION	3

Issue Sheet

**Report Prepared for: Cottam Solar Project Ltd.
DCO Submission**

Environmental Statement Chapter 23: Summary of Significant Effects

Prepared by:

Name: Aidan Van de Weyer

Title: Planner

Approved by:

Name: Ian Douglass

Title: Director of Planning

Date: January 2023

Revision: [01]

23 Summary of Significant Effects

23.1 Summary and Introduction

- 23.1.1 Cottam Solar Project is a proposed solar photovoltaic (PV) array electricity generating facility and electrical storage facility, each with a total capacity exceeding 50 megawatts (MW), and an export connection to the National Grid (the Development).
- 23.1.2 An Environmental Statement (ES) has been prepared on behalf of the Applicant in relation to an application to be made to the Secretary of State (SoS) for Department for Business, Energy & Industrial Strategy (BEIS), under Section 37 of the Planning Act 2008.
- 23.1.3 The Application is for a Development Consent Order (DCO) for the construction, operation and maintenance, and decommissioning of Cottam Solar Project. The Development is classified as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008. An Environmental Impact Assessment (EIA) has been undertaken for the Development and as such The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) apply.
- 23.1.4 This Summary of Significant Effects forms part of the application to PINS for a DCO for the Scheme. Its purpose is to summarise significant residual effects of the Scheme identified within the technical chapters of the ES [EN010133/APP/C6.1].
- 23.1.5 Each technical chapter considers in detail the beneficial and adverse residual effects of the Scheme after the implementation of mitigation measures, both through the design of the Scheme ('embedded mitigation') and through further measures ('additional mitigation'). This assessment covers the construction, operation and decommissioning phases of the Scheme.
- 23.1.6 Each effect is described in the technical chapters in terms of the scale of the effect (for example, major or moderate), in terms of the nature of the effect (adverse, beneficial or neutral), and in terms of the significance of the effect (significant, not significant).
- 23.1.7 A summary of the significant residual effects identified in the technical chapters is set out in **Table 23.1**. This does not include effects the scale of which are 'negligible' or 'minor' nor effects which are 'neutral' in nature.

Table 23.1: Schedule of Significant Effects

ES Chapter [Doc. Ref]	Phase of Development	Description of effect	Significance of potential effect prior to mitigation	Additional mitigation	Significance of residual effect
Climate Change [EN010133/APP/C6.2.7]	Operation	Generation of electricity with low GHG intensity	Major beneficial significant	None	Major beneficial, significant
Landscape and Visual Impact [EN010133/APP/C6.2.8]	Operation (Year 15)	Landscape: RLCT 4a Unwooded Vales, quality of field boundaries: Cottam 1.	Minor beneficial, not significant	New and augmented hedgerows and new shelterbelt and scattered tree planting; grassland	Moderate beneficial, significant
	Operation (Year 15)	Landscape: RLCT 4a Unwooded Vales, quality of field boundaries: Cottam 2.	Minor beneficial, not significant	New and augmented hedgerows and new shelterbelt and scattered tree planting; grassland	Moderate beneficial, significant
	Operation (Year 15)	Landscape: RLCT 4a Unwooded Vales, quality of field boundaries: Cottam 3a and 3b.	Minor beneficial, not significant	New and augmented hedgerows and new shelterbelt and scattered tree planting; grassland	Moderate beneficial, significant
	Operation (Year 15)	Landscape: Character of land use: All Sites. All solar array fields.	Minor beneficial, not significant	New and augmented hedgerows and new shelterbelt and scattered tree planting; grassland; restoration of historic field patterns where possible.	Moderate beneficial, significant
	Operation (Year 15)	Landscape: Character of land use: All substation sites.	Moderate adverse, significant	Allow existing hedgerows to grow out. New grassland, new hedgerows and new hedgerow trees.	Moderate adverse, significant

	Operation (Year 15)	Landscape: Character of the topography and watercourses: All Sites: All solar array fields.	Minor beneficial, not significant	Grassland buffers, scattered tree belts, reinforcement of historic field patterns.	Moderate beneficial, significant
	Operation (Year 15)	Landscape: Character of the topography and watercourses,: All substation sites	Moderate adverse, significant	Allow existing hedgerows to grow out. New grassland, new hedgerows and new hedgerow trees.	Moderate adverse, significant
	Operation (Year 15)	Landscape: Character of national and locally designated landscapes: All Sites: All solar array fields.	Minor beneficial, not significant	Grassland buffers, scattered tree belts, reinforcement of historic field patterns. New and augmented hedgerows and new shelterbelt planting.	Moderate beneficial, significant
	Operation (Year 15)	Landscape: Character of ancient woodlands and natural designations: All sites: All solar array fields.	Minor beneficial, not significant	New and enhanced hedgerow planting, irregularly spaced hedgerow trees and new shelterbelts.	Moderate beneficial, significant
	Operation (Year 15)	Visual: Viewpoints: Cottam 1 (LCC-C-D)	Moderate adverse - 1 Moderate-major adverse, significant -	Scattered tree planting, new and augmented hedgerows, additional hedgerow trees, shelterbelt	Moderate beneficial, significant
	Operation (Year 15)	Visual: Viewpoints: Cottam 1 (VP04, VP10, VP13, LCC-C-G, LCC-C-J) Cottam 3a (VP60, LCC-C_T) Cottam 3b (VP59)	Moderate-major adverse, significant-1	New and augmented hedgerows, shelterbelt, scattered tree planting, grassland, hedgerow trees, strengthening of field boundaries	Moderate adverse, significant - Moderate-major adverse, significant
	Operation (Year 15)	Visual: Transport receptors: Cottam 2 (T040, T045) Cottam 3a (T016) Cottam 3b (T021)	Moderate adverse, significant Moderate-major adverse, significant	Planting, including grass seeding, hedgerows and hedgerow trees	Moderate adverse, significant

	Operation (Year 15)	Visual: Public rights of way and access: Cottam 3b	Major adverse, significant	Planting of a new hedgerow, Intermittent tree planting	Moderate-Major beneficial, significant
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Hedgerows and trees – PV and BESS Sites	Adverse	Habitat reinstatement and enhancement.	Beneficial, significant at District level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Hedgerows and trees – Cable Installation	Adverse in the medium term	Implementation of protection and good practice surrounding hedgerow removal and reinstatement; buffer zones and enhancement measures	Adverse, significant at Site level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Grassland (Including Arable Field Margins, Lowland Meadow, Floodplain Grazing Marsh and Traditional Orchard)	Neutral	Creation of the protective buffer zones; remediation of lowland meadow and floodplain grazing marsh grassland habitats	Beneficial, significant at District level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Ponds	Adverse	Creation of new ponds, enhancement of retained ponds	Beneficial, significant at Local level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Bats	Neutral	Adoption of development free buffers at field boundaries; construction protocols; protocols for removal of trees; grassland, scrub, tree and hedgerow creation.	Beneficial, significant at District level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Harvest mice	Adverse	Grassland habitat creation and management, hedgerow and tree planting; field margin buffer zones	Adverse, significant at Site level

Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Reptiles	Adverse	Protective construction-phase measures; field margin buffer zones and habitat creation.	Beneficial, significant at Local level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Breeding Birds: skylark, yellow wagtail, grey partridge and quail	Adverse	Creation of optimal foraging habitat of diverse grassland types; provision of areas of open, undeveloped land for set-aside habitat	Adverse, significant at Local level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Breeding Birds: lapwing and curlew	Adverse	Creation of wetland and grassland breeding habitats.	Beneficial, significant at least at Site level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Breeding Birds – Other Species	Adverse	Measures to be taken during the cabling work, including timing of work near potential nesting sites, monitoring, information to staff and buffering; area reserved for foraging habitat of turtle dove; planting of hedging, trees and woody vegetation	Beneficial, significant at Local-District level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Invertebrates	Adverse	Measures to minimise the risk of pollution, run-off and dust deposition; reinstatement of habitat losses; prescriptions on working methods; retained and protected buffer zones and the grassland habitats	Beneficial, significant at Local level
Ecology and Biodiversity [EN010133/APP/C6.2.9]	Construction, Operation	Badgers	Adverse	Requirements for fencing installation; information provided to contractors; measures to reduce the probability of incidental mortality	Beneficial, significant at Site level

Hydrology, Flood Risk and Drainage [EN010133/APP/C6.2.10]	No significant residual effects are predicted during construction, operation and decommissioning of the Scheme				
Ground Conditions and Contamination [EN010133/APP/C6.2.11]	No significant residual effects are predicted during construction, operation and decommissioning of the Scheme				
Minerals [EN010133/APP/C6.2.12]	No significant residual effects are predicted during construction, operation and decommissioning of the Scheme				
Cultural Heritage [EN010133/APP/C6.2.13]	Construction, Operation	Medium-term and long-term and reversible effect on Thorpe medieval settlement (NHLE 1016978)	Moderate adverse	Landscape mitigation proposals which should reach maturity by Year 15	Moderate adverse, significant
Cultural Heritage [EN010133/APP/C6.2.13]	Construction	Permanent and irreversible effect on Non-Designated Archaeological Remains - AR22a (undated possible kiln)	Slight to Large Adverse (depending on	Strip, Map and Sample (SMS) excavation and 'preservation by record'	Slight to large adverse, (potentially) significant
Cultural Heritage [EN010133/APP/C6.2.13]	Construction	Permanent and irreversible effect on Non-Designated Archaeological Remains - AR24 (RB settlement & Anglo-Saxon cemetery)	Slight Adverse	Full open area excavation of burials, (alongside embedded mitigation to achieve preservation <i>in situ</i> (of RB settlement remains) through solar panel installation design	Large adverse, significant
Cultural Heritage [EN010133/APP/C6.2.13]	Construction	Permanent and irreversible effect on Non-Designated Archaeological Remains - AR67 to AR75	Uncertain, but likely to range from Neutral up to Large Adverse	Strip, Map and Sample (SMS) excavation and 'preservation by record'; Embedded mitigation to achieve preservation in situ by horizontal directional drilling; Watching Brief scalable to SMS	Neutral to moderate adverse, (potentially) significant

				excavation and 'preservation by record'	
Cultural Heritage [EN010133/APP/C6.2.13]	Operational	Long-term reversible effect on Non-Designated Archaeological Remains - AR07, AR23, AR25, AR26, AR28, AR35, AR37, AR38, AR41, AR42, AR43, AR45, AR46, AR47, AR48, AR49, AR50, AR52, AR54, AR55, AR56	Negligible to major beneficial	Embedded mitigation to achieve preservation <i>in situ</i> , Informative trenching	Slight to large beneficial, (potentially) significant
Cultural Heritage [EN010133/APP/C6.2.13]	Operational	Long-term reversible effect on Non-Designated Archaeological Remains - AR24 (RB settlement & Anglo-Saxon cemetery)	Slight to large beneficial	Embedded mitigation to achieve preservation <i>in situ</i> of RB settlement remains (Anglo Saxon cemetery already excavated and removed during construction)	Slight to large beneficial, significant
Cultural Heritage [EN010133/APP/C6.2.13]	Operational	Long-term reversible effect on Non-Designated Historic Buildings - HB11: Turpin Farm, Fillingham	Moderate adverse	Landscape mitigation proposals which should reach maturity by Year 15	Moderate adverse, significant
Cultural Heritage [EN010133/APP/C6.2.13]	Operational	Long-term reversible effect on Non-Designated Historic Landscape - Ancient Enclosures HLI20759, HLI20786, HLI21000 and HLI21001	Moderate to large adverse, significant	None	Moderate to large adverse, significant
Cultural Heritage [EN010133/APP/C6.2.13]	Operational	Long-term reversible effect on Non-Designated Historic Landscape - Parliamentary Planned Enclosures HLI156 and HLI19276	Moderate adverse, significant	None	Moderate adverse, significant
Cultural Heritage [EN010133/APP/C6.2.13]	Operational	Long-term reversible effect on Non-Designated Historic Landscape - Military Airfield HLI18742	Moderate adverse, significant	None	Moderate adverse, significant

Cultural Heritage [EN010133/APP/C6.2.13]	Operation	Cumulative effect on views from the Lincoln Edge that contribute to the significance of heritage assets	Possible moderate adverse, significant	None	Possible moderate adverse, significant
Transport and Access [EN010133/APP/C6.2.14]	No significant residual effects are predicted during construction, operation and decommissioning of the Scheme				
Noise and Vibration [EN010133/APP/C6.2.15]	No significant residual effects are predicted during construction, operation and decommissioning of the Scheme				
Glint and Glare [EN010133/APP/C6.2.16]	No significant residual effects are predicted during construction, operation and decommissioning of the Scheme				
Air Quality [EN010133/APP/C6.2.17]	No significant residual effects are predicted during construction, operation and decommissioning of the Scheme				
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction (Cumulative), Decommissioning (Cumulative)	Construction sector employment: Increase in construction employment opportunities generated from Scheme construction	n/a	None	Peak cumulative moderate beneficial, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction, Construction (Cumulative), Decommissioning, Decommissioning (Cumulative)	Accommodation and services sector employment: Increase in demand for temporary accommodation units	Medium-term temporary major-moderate beneficial, significant at Local level Cumulative: n/a	None None	Medium-term temporary major-moderate beneficial, significant at Local level Cumulative: Not substantively different

Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction, Construction (Cumulative)	Economic activity and employment: Changes in overall employment opportunities generated from Scheme construction	Medium-term temporary moderate-minor beneficial, not significant at Local level Cumulative: n/a	Promotion of local recruitment and procurement, education and skills uplifting, apprenticeship and training schemes None	Medium-term temporary moderate beneficial, significant at Local level Cumulative: Not substantively different
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction, Construction (Cumulative)	Accommodation stock (construction): Increase in accommodation occupancy for temporary or short-term workers	Medium-term temporary major-moderate beneficial, significant at Local level Cumulative: n/a	None None	Medium-term temporary major-moderate beneficial, significant at Local level Cumulative: Not substantively different
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction (Cumulative)	Accommodation stock (housing): Increase in accommodation requirement for workers and families	n/a	None	Peak cumulative moderate beneficial, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction, Construction (Cumulative)	Access to employment (IMD): Changes in overall employment opportunities generated from Scheme construction	Medium-term temporary moderate beneficial, significant at Local level Cumulative: n/a	Promotion of local recruitment and procurement, education and skills uplifting, apprenticeship and training schemes None	Medium-term temporary major-moderate beneficial, significant at Local level Cumulative: Not substantively different
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction, Construction (Cumulative)	Access to education (IMD): Increase in sector-based skills training and qualification opportunities	Medium-term temporary moderate-minor beneficial, not significant at Local level Cumulative: n/a	Promotion of education and skills uplifting, apprenticeship and training schemes None	Medium-term temporary moderate beneficial, significant at Local level Cumulative: Not substantively different

Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction (Cumulative)	Construction economy: Economic impacts on existing construction economy	n/a	None	Peak cumulative moderate beneficial, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction (Cumulative)	Accommodation economy: Economic impacts on existing accommodation economy	n/a	None	Peak cumulative moderate beneficial, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction, Construction (Cumulative)	Economic prosperity: Total GVA and GVA/head change associated with construction of Scheme	Medium-term temporary moderate-minor beneficial, not significant at Local level Cumulative: n/a	Promotion of local recruitment and procurement None	Medium-term temporary moderate beneficial, significant at Local level Cumulative: Not substantively different
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction, Construction (Cumulative)	Resident and working population income: Changes in overall employment opportunities and personal income from Scheme construction	Medium-term temporary moderate-minor beneficial, not significant at Local level Cumulative: n/a	Promotion of local recruitment and procurement None	Medium-term temporary moderate beneficial, significant at Local level Cumulative: Not substantively different
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction, Construction (Cumulative)	Local tourist attractions (landscape): Impacts from construction noise, traffic, and views on desirability and use	Peak medium-term temporary moderate adverse, significant at Local level Cumulative: n/a	Landscape planting set out in OLEMP, and in OOEMP. Traffic impacts to be minimised through CTMP/OCEMP measures.	Peak medium-term temporary moderate adverse, significant at Local level Cumulative: Not substantively different
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Construction (Cumulative)	Public Rights of Way: Impacts from construction noise, traffic, views, and diversions and closures of routes on PRoW desirability and use	n/a	Working with other developers to seek to ensure that relevant the impacts to affected Public Rights of Way and long-distance recreation routes are mitigated and kept to a minimum	Peak cumulative moderate adverse, significant at Local level

Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Operation (Cumulative)	Energy sector employment: Increase in energy sector employment opportunities generated from Scheme operation and maintenance	n/a	None	Long-term cumulative moderate adverse, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Decommissioning (Cumulative)	Energy sector employment: Conclusion of energy sector employment generated from Scheme operation and maintenance	n/a	None	Peak cumulative moderate adverse, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Decommissioning (Cumulative)	Economic activity and employment: Changes in overall employment opportunities generated from Scheme decommissioning	n/a	None	Peak cumulative moderate beneficial, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Decommissioning (Cumulative)	Construction economy: Economic impacts on existing construction economy	n/a	None	Peak cumulative moderate beneficial, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Decommissioning (Cumulative)	Economic prosperity: Total GVA and GVA/head change associated with decommissioning of Scheme	n/a	None	Peak cumulative moderate beneficial, significant at Local level
Socio-Economic, Tourism and Recreation [EN010133/APP/C6.2.18]	Decommissioning (Cumulative)	Resident and working population income: Changes in overall employment opportunities and personal income from Scheme decommissioning	n/a	None	Peak cumulative moderate beneficial, significant at Local level
Soils and Agriculture [EN010133/APP/C6.2.19]	Operation	Recovery of soil organic matter under extended fallow	Moderate beneficial significant	None	Moderate beneficial, significant
Soils and Agriculture [EN010133/APP/C6.2.19]	Operation	Transfer of arable land to new diversified enterprise	Moderate beneficial significant	New land for local sheep grazers	Moderate beneficial, significant

Waste [EN010133/APP/C6.2.20]	Decommissioning	Potential effect of waste disposal from the Scheme and cumulatively	Moderate/large adverse significant	None	Moderate/large adverse, significant
Other Environmental Matters [EN010133/APP/C6.2.21]	No significant residual effects are predicted during construction, operation and decommissioning of the Scheme				