

Cottam Solar Project

Environmental Statement Table of Contents, Glossary and Abbreviations

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Contents

<u>1</u>	<u>ENVIRONMENTAL STATEMENT TABLE OF CONTENTS</u>	<u>3</u>
<u>2</u>	<u>GLOSSARY</u>	<u>13</u>
<u>3</u>	<u>LIST OF ABBREVIATIONS AND ACRONYMS</u>	<u>20</u>

Issue Sheet

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

Environmental Statement: Contents, Glossary and Abbreviations

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1 Environmental Statement Table of Contents

ES Part	Document Title
	Contents, Glossary and Abbreviations
Volume 1:	Environmental Statement Report
Chapter 1	Introduction
Chapter 2	EIA Process and Methodology
Chapter 3	The Order Limits
Chapter 4	Scheme Description
Chapter 5	Alternatives and Design Evolution
Chapter 6	Energy Need, Legislative Context, and Energy Policy
Chapter 7	Climate Change
Chapter 8	Landscape and Visual Impact
Chapter 9	Ecology and Biodiversity
Chapter 10	Hydrology, Flood Risk and Drainage
Chapter 11	Ground Conditions and Contamination
Chapter 12	Minerals
Chapter 13	Cultural Heritage
Chapter 14	Transport and Access
Chapter 15	Noise and Vibration
Chapter 16	Glint and Glare
Chapter 17	Air Quality
Chapter 18	Socio-Economics, Tourism and Recreation
Chapter 19	Soils and Agriculture
Chapter 20	Waste
Chapter 21	Other Environmental Matters
Chapter 22	Mitigation Schedule
Chapter 23	Summary of Significant Effects
Volume 2:	Environmental Statement Appendices
Appendix 1.1	Statement of Competence
Appendix 2.1	EIA Scoping Report

Appendix 2.2	EIA Scoping Opinion
Appendix 2.3	Long List of Cumulative Assessment Sites
Appendix 4.1	Engineering Drawings and Sections
Appendix 5.1	Site Selection Assessment Report
Appendix 8.1	LVIA Methodology (includes sub-appendices 8.1.1-8.1.4)
Appendix 8.1.5	Photography and Photomontage Methodology
Appendix 8.2	Assessment of Potential Landscape Effects (includes sub-appendices 8.2.1-8.2.12)
Appendix 8.3	Assessment of Potential Visual Effects (includes sub-appendices 8.3.1-8.3.5)
Appendix 8.4	Consultation (includes sub-appendices 8.4.1-8.4.4)
Appendix 8.5	Policy Commentary
Appendix 9.1	Consultation Responses
Appendix 9.2	Preliminary Ecological Appraisals
Appendix 9.3	Extended Phase 1 Habitat Surveys
Appendix 9.4	Cable Route Preliminary Ecological Assessment
Appendix 9.5	Bat Survey Report
Appendix 9.6	Otter and Water Vole Survey
Appendix 9.7	Great Crested Newt Survey Report
Appendix 9.8	Breeding Bird Survey Report
Appendix 9.9	Overwintering Bird Survey Report
Appendix 9.10	CONFIDENTIAL Protected Species Surveys
Appendix 9.11	Schedule of Protective Ecological Buffers
Appendix 9.12	Biodiversity Net Gain Report
Appendix 10.1	Flood Risk Assessment and Drainage Strategy Report (and annexes): Annex B - 10.1.1: Flood Risk Assessment and Drainage Strategy – Cable Route Annex C - 10.1.2: Flood Risk Assessment and Drainage Strategy – Cottam 1 North Annex D - 10.1.3: Flood Risk Assessment and Drainage Strategy – Cottam 1 West Annex E - 10.1.4: Flood Risk Assessment and Drainage Strategy – Cottam 1 South Annex F - 10.1.5: Flood Risk Assessment and Drainage Strategy – Cottam 2 Annex G - 10.1.6: Flood Risk Assessment and Drainage Strategy – Cottam 3A

	Annex H - 10.1.7: Flood Risk Assessment and Drainage Strategy – Cottam 3B
Appendix 11.1	Geo-Environmental Risk Assessment (CO1)
Appendix 11.2	Geo-Environmental Risk Assessment (CO2)
Appendix 11.3	Geo-Environmental Risk Assessment (CO3)
Appendix 11.4	Geo-Environmental Risk Assessment (Cable Corridor)
Appendix 13.1	Archaeological Desk Based Assessments
Appendix 13.2	Archaeological Geophysical Survey Reports
Appendix 13.3	Geoarchaeological Desk-Based Assessment
Appendix 13.4	Air Photo and LiDAR Mapping and Interpretation Reports
Appendix 13.5	Heritage Assessment
Appendix 13.6	Archaeological Evaluation Trenching Reports
Appendix 13.7	Archaeological Written Scheme of Investigation (WSI)
Appendix 13.8	Cultural Heritage Impact Assessment Tables
Appendix 13.9	Consultation
Appendix 14.1	Transport Assessment
Appendix 14.2	Construction Traffic Management Plan
Appendix 14.3	Public Rights of Way Management Plan
Appendix 15.1	Noise Survey Information
Appendix 15.2	Acoustic Terminology
Appendix 15.3	Assessment of Key Effects
Appendix 16.1	Solar Photovoltaic Glint and Glare Study
Appendix 17.1	Qualitative Dust Assessment and Construction Dust Management Plan (CO1)
Appendix 17.2	Qualitative Dust Assessment and Construction Dust Management Plan (CO2)
Appendix 17.3	Qualitative Dust Assessment and Construction Dust Management Plan (CO3)
Appendix 17.4	BESS Fire Technical Note
Appendix 19.1	Agricultural Land Quality, Soil Resources Report
Appendix 19.2	Outline Soils Management Plan
Volume 3:	Environmental Statement Figures
Figure 1.1	Location Plan
Figure 2.1	Cumulative Assessments Site Plan
Figure 3.1	Field Numbering Plan Cottam 1

Figure 3.2	Field Numbering Plan Cottam 2
Figure 3.3	Field Numbering Plan Cottam 3a and 3b
Figure 4.1	Illustrative Site Layout Plan (CO1 N)
Figure 4.2	Illustrative Site Layout Plan (CO1 S)
Figure 4.3	Illustrative Site Layout Plan (CO1 West A)
Figure 4.4	Illustrative Site Layout Plan (CO1 West B)
Figure 4.5	Illustrative Site Layout Plan (CO2)
Figure 4.6	Illustrative Site Layout Plan (CO3A)
Figure 4.7	Illustrative Site Layout Plan (CO3B)
Figure 4.8	Cottam Energy Storage, Illustrative Layout Plan
Figure 8.1	Site Location and Study Areas
Figure 8.2	Aerial Photography
Figure 8.2.1	Cottam 1 Aerial Photography
Figure 8.2.2	Cottam 2 Aerial Photography
Figure 8.2.3	Cottam 3 Aerial Photography
Figure 8.2.4	Cottam Power Station to Cottom 1 Aerial Photography
Figure 8.3	Landform
Figure 8.4	Landscape Character - National
Figure 8.5	Landscape Character - Regional
Figure 8.6	Landscape Receptors
Figure 8.6.1	Cottam 1 Detailed Landscape Receptors
Figure 8.6.2	Cottam 2 Detailed Landscape Receptors
Figure 8.6.3	Cottam 3 Detailed Landscape Receptors
Figure 8.6.4	Cottam Power Station to Cottam 1 Landscape Receptors
Figure 8.7	Visual Receptors
Figure 8.7.1	Cottam 1 Detailed Visual Receptors
Figure 8.7.2	Cottam 2 Detailed Visual Receptors
Figure 8.7.3	Cottam 3 Detailed Visual Receptors
Figure 8.7.4	Cottam Power Station to Cottam 1 Visual Receptors
Figure 8.7.5	Cottam 1 Residential Receptors
Figure 8.7.6	Cottam 2 Residential Receptors

Figure 8.7.7	Cottam 3 Residential Receptors
Figure 8.7.8	Cottam Power Station to Cottam 1 Residential Receptors
Figure 8.7.9	Cottam 1 Transport Receptors
Figure 8.7.10	Cottam 2 Transport Receptors
Figure 8.7.11	Cottam 3 Transport Receptors
Figure 8.7.12	Cottam Power Station to Cottam 1 Transport Receptors
Figure 8.7.13	Cottam 1 PRow Receptors
Figure 8.7.14	Cottam 2 PRow Receptors
Figure 8.7.15	Cottam 3 PRow Receptors
Figure 8.7.16	Cottam Power Station to Cottam 1 PRow Receptor
Figure 8.7.17	Cottam 1,2 and 3 Bare Earth ZTV
Figure 8.8	Cottam 1 Bare Earth ZTV
Figure 8.9	Cottam 2 Bare Earth ZTV
Figure 8.10	Cottam 3 Bare Earth ZTV
Figure 8.10.1	Cottam 1,2 and 3 Augmented ZTV
Figure 8.11	Cottam 1 Augmented ZTV
Figure 8.12	Cottam 2 Augmented ZTV
Figure 8.13	Cottam 3 Augmented ZTV
Figure 8.14.1	Viewpoint 1 Photography and Photomontage
Figure 8.14.2	Viewpoint 2 Photography
Figure 8.14.3	Viewpoint 3 Photography
Figure 8.14.4	Viewpoint 4 Photography and Photomontage
Figure 8.14.5	Viewpoint 5 Photography and Photomontage
Figure 8.14.6	Viewpoint 6 Photography and Photomontage
Figure 8.14.7	Viewpoint 7 Photography and Photomontage
Figure 8.14.8	Viewpoint 8 Photography
Figure 8.14.9	Viewpoint 9 Photography
Figure 8.14.10	Viewpoint 10 Photography and Photomontage
Figure 8.14.11	Viewpoint 11 Photography
Figure 8.14.12	Viewpoint 12 Photography
Figure 8.14.13	Viewpoint 13 Photography

Figure 8.14.14	Viewpoint 14 Photography and Photomontage
Figure 8.14.15	Viewpoint 15 Photography
Figure 8.14.16	Viewpoint 16 Photography and Photomontage
Figure 8.14.17	Viewpoint 17 Photography and Photomontage
Figure 8.14.18	Viewpoint 18 Photography and Photomontage
Figure 8.14.19	Viewpoint 19 Photography and Photomontage
Figure 8.14.20	Viewpoint 20 Photography and Photomontage
Figure 8.14.21	Viewpoint 21 Photography and Photomontage
Figure 8.14.22	Viewpoint 22 Photography and Photomontage
Figure 8.14.23	Viewpoint 23 Photography and Photomontage
Figure 8.14.24	Viewpoint 24 Photography
Figure 8.14.25	Viewpoint 25 Photography
Figure 8.14.26	Viewpoint 26 Photography and Photomontage
Figure 8.14.27	Viewpoint 27 Photography
Figure 8.14.28	Viewpoint 28 Photography
Figure 8.14.29	Viewpoint 29 Photography and Photomontage
Figure 8.14.30	Viewpoint 30 Photography and Photomontage
Figure 8.14.31	Viewpoint 31 Photography
Figure 8.14.32	Viewpoint 32 Photography and Photomontage
Figure 8.14.33	Viewpoint 33 Photography and Photomontage
Figure 8.14.34	Viewpoint 34 Photography and Photomontage
Figure 8.14.35	Viewpoint 35 Photography and Photomontage
Figure 8.14.36	Viewpoint 36 Photography and Photomontage
Figure 8.14.37	Viewpoint 37 Photography and Photomontage
Figure 8.14.38	Viewpoint 38 Photography and Photomontage
Figure 8.14.39	Viewpoint 39 Photography and Photomontage
Figure 8.14.40	Viewpoint 40 Photography
Figure 8.14.41	Viewpoint 41 Photography
Figure 8.14.42	Viewpoint 42 Photography
Figure 8.14.43	Viewpoint 43 Photography
Figure 8.14.44	Viewpoint 44 Photography

Figure 8.14.45	Viewpoint 45 Photography
Figure 8.14.46	Viewpoint 46 Photography
Figure 8.14.47	Viewpoint 47 Photography and Photomontage
Figure 8.14.48	Viewpoint 48 Photography
Figure 8.14.49	Viewpoint 49 Photography and Photomontage
Figure 8.14.50	Viewpoint 50 Photography and Photomontage
Figure 8.14.51	Viewpoint 51 Photography and Photomontage
Figure 8.14.52	Viewpoint 52 Photography
Figure 8.14.53	Viewpoint 53 Photography
Figure 8.14.54	Viewpoint 54 Photography
Figure 8.14.55	Viewpoint 55 Photography and Photomontage
Figure 8.14.56	Viewpoint 56 Photography and Photomontage
Figure 8.14.57	Viewpoint 57 Photography and Photomontage
Figure 8.14.58	Viewpoint 58 Photography and Photomontage
Figure 8.14.59	Viewpoint 59 Photography and Photomontage
Figure 8.14.60	Viewpoint 60 Photography and Photomontage
Figure 8.14.61	Viewpoint 61 Photography and Photomontage
Figure 8.14.62	Viewpoint 62 Photography and Photomontage
Figure 8.14.63	Viewpoint 63 Photography and Photomontage
Figure 8.14.64	Viewpoint 64 Photography
Figure 8.14.65	Viewpoint 65 Photography
Figure 8.14.66	Viewpoint 66 Photography and Photomontage
Figure 8.14.67	Viewpoint 67 Photography and Photomontage
Figure 8.14.68	LCC-C-A Viewpoint 68 Photography Photomontage
Figure 8.14.69	LCC-C-B Viewpoint 69 Photography
Figure 8.14.70	LCC-C-C Viewpoint 70 Photography Photomontage
Figure 8.14.71	LCC-C-D Viewpoint 71 Photography Photomontage
Figure 8.14.72	LCC-C-E Viewpoint 72 Photography Photomontage
Figure 8.14.73	LCC-C-F Viewpoint 73 Photography Photomontage
Figure 8.14.74	LCC-C-G Viewpoint 74 Photography Photomontage
Figure 8.14.75	LCC-C-H Viewpoint 75 Photography Photomontage

Figure 8.14.76	LCC-C-I Viewpoint 76 Photography Photomontage
Figure 8.14.77	LCC-C-J Viewpoint 77 Photography Photomontage
Figure 8.14.78	LCC-C-K Viewpoint 78 Photography Photomontage
Figure 8.14.79	LCC-C-L Viewpoint 79 Photography Photomontage
Figure 8.14.80	LCC-C-M Viewpoint 80 Photography
Figure 8.14.81	LCC-C-N Viewpoint 81 Photography
Figure 8.14.82	LCC-C-O Viewpoint 82 Photography
Figure 8.14.83	LCC-C-P Viewpoint 83 Photography Photomontage
Figure 8.14.84	LCC-C-Q Viewpoint 84 Photography
Figure 8.14.85	LCC-C-R Viewpoint 85 Photography
Figure 8.14.86	LCC-C-S Viewpoint 86 Photography
Figure 8.14.87	LCC-C-T Viewpoint 87 Photography Photomontage
Figure 8.14.88	LCC-C-U Viewpoint 88 Photography
Figure 8.14.89	LCC-C-V Viewpoint 89 Photography
Figure 8.14.90	LCC-C-W Viewpoint 90 Photography
Figure 8.15	Cumulative Developments
Figure 8.15.1	Cottam 1,2 and 3 Cumulative Sites Cottam Augmented ZTV
Figure 8.15.1.1	Cumulative Sites Cottam 1 Augmented ZTV
Figure 8.15.1.2	Cumulative Sites Cottam 2 Augmented ZTV
Figure 8.15.1.3	Cumulative Sites Cottam 3 Augmented ZTV
Figure 8.15.2	Cottam 1,2 and 3 Cumulative Developments Augmented ZTV
Figure 8.15.2.1	Cumulative Developments Cottam 1 Augmented ZTV
Figure 8.15.2.2	Cumulative Developments Cottam 2 Augmented ZTV
Figure 8.15.2.3	Cumulative Developments Cottam 3 Augmented ZTV
Figure 8.15.2.4	Cottam 1, 2 and 3 Bumble Bee Farm Cumulative Development Augmented ZTV
Figure 8.15.2.5	Cottam 1, 2 and 3 Field Farm Cumulative Development Augmented ZTV
Figure 8.15.2.6	Cottam 1, 2 and 3 Gate Burton Cumulative Development Augmented ZTV
Figure 8.15.2.7	Cottam 1, 2 and 3 High Marnham Cumulative Development Augmented ZTV
Figure 8.15.2.8	Cottam 1, 2 and 3 Tillbridge Solar Cumulative Development Augmented ZTV
Figure 8.15.2.9	Cottam 1, 2 and 3 West Burton Cumulative Development Augmented ZTV
Figure 8.16	Central Lincolnshire Biodiversity Opportunity Mapping

Figure 8.16.1	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 1_North_Sheet 1
Figure 8.16.2	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 1_North_Sheet 2
Figure 8.16.3	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 1_North_Sheet 3
Figure 8.16.4	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 1_South_Sheet 1
Figure 8.16.5	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 1_South_Sheet 2
Figure 8.16.6	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 1_West_Sheet 1
Figure 8.16.7.1	Landscape and Ecology Mitigation and Enhancement - Cottam 1_West_A_Sheet 2
Figure 8.16.7.2	Landscape and Ecology Mitigation and Enhancement - Cottam 1_West_B_Sheet 3
Figure 8.16.8	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 2
Figure 8.16.9	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 3b_Rev D
Figure 8.16.10	Landscape and Ecology Mitigation and Enhancement Plan - Cottam 3a
Figure 8.16.11	Indicative Landscape Sections
Figure 12.1	Minerals Resource Plans
Figure 12.2	Minerals Resource Plans
Figure 12.3	Minerals Resource Plans
Figure 12.4	Minerals Resource Plans
Figure 13.1	Site Location and Figure Key Plan
Figure 13.2	AARHB Cottam 1
Figure 13.3	AARHB Cottam 2
Figure 13.4	AARHB Cottam 2, 3a and 3b
Figure 13.5	AARHB Cottam Cable Route
Figure 13.6	HLC Cottam 1
Figure 13.7	HLC Cottam 2
Figure 13.8	HLC Cottam 2, 3a and 3b
Figure 13.9	HLC Cottam Cable Route
Figure 13.10	Designated Heritage Assets – Cottam Cable Route

Figure 19.1	Cottam 1 Agricultural Land Classification Grade Distribution
Figure 19.2	Cottam 2 Agricultural Land Classification Grade Distribution
Figure 19.3	Cottam 3a and 3b Agricultural Land Classification Grade Distribution
Figure 19.4	Farm Business Occupancy
Figure 19.5	Predictive Best and Most Versatile Land
Volume 4:	Non-Technical Summary

2 Glossary

Term	Description
"A" Weighting (dB(A))	The human ear does not respond uniformly across the audible frequency range. The "A" weighting is commonly used to simulate the frequency response of the ear.
Agricultural Land Classification (ALC)	A means of assessing the quality of farmland. Its assessment is based on physical limitations of the land, such as climate, site characteristics (for example gradient) and soil. The assessment gives an indication of the versatility and expected yield of the land. The system classifies agricultural land in 5 grades. The best and most versatile land is classified as 1, 2 and 3a. The Agricultural Land Classification was developed by the former Ministry of Agriculture, Fisheries and Food (MAFF) in 1988 and revised in 1996.
Air Quality Management Area (AQMA)	Places where air quality objectives are not likely to be achieved. Where an AQMA is declared, the local authority is obliged to produce an Action Plan in pursuit of the achievement of the air quality objectives.
Ambient noise Level, LAeq,T	The total sound in a certain situation at a given time usually composed of sound from many sources, near and far.
Amenity	The ability of communities to achieve enjoyment and/or quality of life.
Annual Average Daily Traffic (AADT)	Traffic data obtained by calculating daily traffic flows and then calculating the annual average. Often used in predicting noise levels and air quality, usually in conjunction with other parameters such as average vehicle speed and percentage heavy vehicles.
Annual Average Weekly Traffic (AAWT)	Traffic data obtained by calculating weekly traffic flows and then calculating the annual average. Often used in predicting noise levels and air quality, usually in conjunction with other parameters such as average vehicle speed and percentage heavy vehicles.
Annual Exceedance Probability (AEP)	The probability of a certain accumulation being exceeded in a particular year.
Applicant	Cottam Solar Project Ltd.
Application	The application for a Development Consent Order (DCO) submitted by the Applicant for the Scheme.
Background Noise Level LA90,T	The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval, T, measured using the fast time weighting, F, and quoted to the nearest whole number.
Baseline Conditions	The environment as it appears (or would appear) immediately prior to the implementation of the Scheme together with any known or foreseeable future changes that will take place before completion of the Scheme.

Term	Description
Battery Energy Storage System	A battery storage installation to allow for the storage, importation, and exportation of energy to the National Grid. Sometimes referred to in the DCO application documentation as 'BESS'.
Biodiversity	The biological diversity of the earth's living resources. The total range of variability among systems and organisms at the following levels of organisation: bioregional, landscape, ecosystem, habitat, communities, species, populations, individuals, genes and the structural and functional relationships within and between these different levels.
Biodiversity Net Gain (BNG)	Development that leaves biodiversity in a better state than before and involves an approach where developers work with local governments, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation.
Bund	An embankment structure.
Cable circuit	An electrical conductor necessary to transmit electricity between two points within the Scheme and may include one or more auxiliary cables for the purpose of gathering monitoring data, earthing cables, cables for auxiliary supply, optical fibre and other types of communication cables, cables connecting to direct current boxes.
Cable Route Corridor	An area of land identified within which the trench and working width for the cable circuits, the cables themselves and associated cable ducts, will be sited. This is identified as a 50m wide corridor for the extent of the scheme. The corridor will also accommodate temporary construction works such as accesses, haul roads, Horizontal Directional Drilling locations and laydown areas and construction compounds associated with the construction of the cable.
Conservation Area	An area of special environmental or historic interest or importance, of which the character or appearance is protected (Section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990).
Construction Environmental Management Plan (CEMP)	A specific plan developed to ensure that appropriate environmental management practices are followed during the construction phase of a Scheme.
Conversion Units	Conversion Units incorporate the inverters, transformers and switchgear and are required to manage the electricity generated by the PV Panels. These would either be standalone equipment or they would be housed ('integrated') together within a container.
County Wildlife Sites (CWS)	CWS designation is non-statutory but is recognition of a site's high value for wildlife, with many sites being of county and often regional or national importance. They often support characteristic or threatened species and habitats included in Local and National Biodiversity Action Plans
Cumulative Effects	Effects upon the environment that result from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions.

Term	Description
	Each impact by itself may not be significant but can become a significant effect when combined with other impacts.
Decibel (dB)	The decibel is a logarithmic ratio of two values of a variable. The range of audible sound pressures is approximately 2×10^{-5} Pascals (Pa) to 200 Pa. Using decibel notation presents this range in a more manageable form, 0 dB to 140 dB.
Decommissioning Environmental Management Plan (DEMP)	A specific plan developed to ensure that appropriate environmental management practices are followed during the decommissioning phase of a project.
Design Manual for Roads and Bridges (DMRB)	A series of 15 volumes authored by Highways England that provide standards, advice notes and other published documents relating to the design, assessment and operation of trunk roads, including motorways in the United Kingdom, and, with some amendments, the Republic of Ireland.
Development Consent Order (DCO)	Development consent is required pursuant to the Planning Act 2008 for Nationally Significant Infrastructure Projects. A development consent order is the order which grants development consent when an application is made to the Secretary of State.
Electric field	An electric field is the physical field that surrounds electrically charged particles and exerts force on all other charged particles in the field, either attracting or repelling them. Measured in volt per meter (Vm^{-1}) or newton per coulomb (NC^{-1}).
Electromagnetic field	Property of space caused by the motion of an electric charge and is the product of mutual interaction between electric fields and magnetic fields. As such, these are produced in the surrounding area of anywhere there is an electric current.
Energy Storage Facility	The term used in the Draft DCO, Schedule 1 (Work No's 2 and 3), to describe the battery storage installation to allow for the storage, importation, and exportation of energy to the National Grid. For the purposes of the Environmental Impact Assessment, it has been assumed battery technology will be adopted for the Energy Storage Facility. As such (and as noted in the glossary above), the Energy Storage Facility is sometimes referred to in the Application documentation, as the Battery Energy Storage System or 'BESS'.
Environmental effect	The consequence of an action (impact) upon the environment.
Environmental impact	The change in the environment from a development such as the removal of a hedgerow.
Environmental Impact Assessment (EIA)	A process by which information about environmental effects of a proposed development is collected, assessed and used to inform decision making.

Term	Description
Environmental Impact Assessment (EIA) Regulations	Regulations that give planning authorities a means of ensuring that they can take account of the environmental, economic and social implications of individual developments in their decisions on planning applications.
Environmental Statement (ES)	A document produced reporting on the findings of the EIA process.
Flood Zone	Flood Zone definitions are set out in the National Planning Policy Guidance. There are three flood zones which refer to the probability of river and sea flooding, not taking account of the presence of flood defences.
Frequency (Hz)	The number of cycles per second (i.e., the number of vibrations that occur in one second); subjectively this is perceived as pitch.
Frequency Spectrum	The relative frequency contributions that make up a noise.
Generating Station	The elements of the project that generate the electricity output, namely: solar modules fitted to mounting structures; DC electrical cabling; conversion units including inverters, transformers, switchgear, and monitoring and control systems; and electrical and communications cabling connecting the generating station to a sub-station.
Green Infrastructure	A network of multi-functional green space and other green features, urban and rural, which can deliver quality of life and environmental benefits for communities.
Ground mounted PV Modules	Solar photovoltaic (PV) modules attached to structures that are fixed to the ground.
Important Ecological Features (IEFs)	Each habitat, species or site of 'Site' importance or above.
Inverter	Inverters convert the direct current (DC) electricity into alternating current (AC), which allows the electricity generated to be exported to the national grid.
Jointing bay	Underground structures constructed at regular intervals along the cable route to join sections of the cable circuits and facilitate installation of the cable circuits into the buried ducts.
Level LA10,T	The A-weighted sound pressure level exceeded for 10% of a given time interval, T, measured using the fast time weighting, F.
Lowest Observed Adverse Effect Level	This is the level of noise above which adverse effects on health and quality of life can be detected.
Magnetic field	A magnetic field is a vector field that describes the magnetic influence on moving electric charges, electric currents, and magnetic materials. The magnetic flux density of the field is measured in tesla (T), based on the SI unit kilogram per second squared per ampere ($\text{kgm}^{-2}\text{A}^{-1}$).
Mitigation	Measures including any process, activity, or design to avoid, reduce, or remedy for negative environmental impacts or effects of a development.

Term	Description
Mounting Structures	The metal frames onto which the PV Panels are attached.
Nationally Significant Infrastructure Project	Nationally Significant Infrastructure Projects (NSIPs) are large scale developments which require development consent pursuant to the PA 2008.
On-site cables	The low or medium voltage cables within the Solar Farm, which transmit electricity between solar PV Modules to inverters and transformers, and from there to the proposed on-site substation and BESS. These cables consist of 33, 132 and 400 kilovolt cables, as well as earthing cables and optical fibre cables.
Operation Environmental Management Plan (OEMP)	The OEMP identifies environmental mitigation measures required during operation of the Scheme that have been identified as part of the EIA. It defines those environmental commitments and actions that will be implemented during the operation and maintenance of the Scheme.
Order limits	The land shown on the Works Plans within which the Scheme can be carried out.
Outline Battery Fire Safety Management Plan	This document identifies the measures required to avoid and reduce the risk of fire from the batteries within the Scheme, as well as how to effectively manage a fire should the event occur.
Outline Landscape and Ecology Management Plan	The OLEMP sets out the landscape and ecological management actions for the Scheme, outlining how mitigation measures, identified within the Environmental Statement, will be delivered through future landscape works and management.
PA 2008	Planning Act 2008
Photovoltaic (PV)	The process of converting sunlight to electrical energy.
Point of Connection (POC)	The National Grid Substation located at Cottam Power Station, which the Scheme connects to, to transfer the energy generated to the grid.
Preliminary Environmental Information	<p>Preliminary Environmental Information is defined in the EIA Regulations as: ‘information referred to in regulation 14(2) which -</p> <p>(a) has been compiled by the applicant; and</p> <p>(b) is reasonably required for the consultation bodies to develop and informed view of the likely significant environmental effects of the development (and of any associated development).</p> <p>A Preliminary Environmental Information Report for the Scheme was produced in July 2022.</p>
Principal Aquifer	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability – meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

Term	Description
PV Panel	Solar photovoltaic panel designed to convert solar irradiance to electrical energy
Receptor	A component of the natural or man-made environment that is affected by an impact, including people.
Reference Time Interval, Tr	The specified interval over which an equivalent continuous A-weighted sound pressure level is determined.
Scheduled Monument	A 'nationally important' archaeological site or historic building, given protection against unauthorised change and included in the Schedule of Monuments kept by the Secretary of State for Culture, Media and Sport. The protection given to scheduled monuments is given under the Ancient Monuments and Archaeological Areas Act 1979.
The Scheme	A nationally significant infrastructure project comprising a ground mounted solar photovoltaic generating station with a gross electrical capacity of over 50 megawatts and associated development: The details of the Scheme are described in Chapter 4 of this Environmental Statement and Schedule 1 of the draft DCO submitted with the Application. The Scheme will be known as "Cottam Solar Project".
Setting	The surroundings within which a heritage asset is experienced and any element which contributes to the understanding of its significance.
Shared Cable Route Corridor	The areas where part of the Gate Burton Energy Project cable route and West Burton Solar Project cable route will fall within the cable corridor that also accommodates the Cottam cable.
Significant Observed Adverse Effect Level	This is the level of noise above which significant adverse effects on health and quality of life occur.
Sites	Cottam 1, Cottam 2, Cottam 3a and 3b
Solar Arrays	A term used to describe the land or Sites that accommodate the Solar PV modules and associated development.
Solar Farm Sites	The sites (Cottam 1, Cottam 2, Cottam 3a and 3b) that accommodate the ground mounted solar photovoltaic generating stations and associated development, excluding the Cable Route Corridor.
Source Protection Zone	Source Protection Zones ("SPZ") show the risk of contamination from any activities that might cause pollution to groundwater sources such as wells, boreholes and springs used for public water supplies. The closer the activity, the greater the risk. SPZs can comprise of up to three main zones (inner, outer and total catchment). A fourth zone of special interest can also occasionally be applied to a groundwater source.
Study Area	The area in which a particular assessment or survey targets. The study area will vary depending on the nature of the technical assessment. Where relevant, these are defined within the relevant technical chapter of the ES.

Term	Description
Switchgear	A combination of electrical disconnect switches, fuses or circuit breakers used to control, protect, and isolate electrical equipment.
Transformers	Transformers increase and decrease the voltage of the electricity.
Tesla (T)	Unit of measurement for the magnetic flux density of a magnetic field. Usually scaled to micro Tesla (μT) for everyday applications and for measuring magnetic fields around electrical infrastructure.
Volt per metre (Vm^{-1})	Unit of measurement for the strength of an electric field. Usually scaled to kilovolts per meter (kVm^{-1}) for measuring electric fields around electrical infrastructure.
Water Framework Directive	The Water Framework Directive (“WFD”) introduced a new system for monitoring and classifying the quality of surface and ground waters. The Directive requires that Environmental Objectives be set for all surface waters and groundwater to enable them to achieve Good Ecological Potential/Status by a defined date.
Works Plans	The plans submitted with the Application known as the Works Plans and which delineate the Order limits for the Scheme.
Written Scheme of Investigation	A Written Scheme of Investigation outlines known and potential archaeological features and deposits or built heritage elements on a site and suggests a structure for exploring them using the latest, most appropriate and cost-effective archaeological techniques.
Zone of Influence	The area for the assessment of combined effects. Zones of Influence are variable depending on the environmental factor being discussed.
Zone of Theoretical Visibility	A map, usually digitally produced, showing areas of land within which, the Scheme is theoretically visible.

3 List of Abbreviations and Acronyms

Term	Meaning
AADT	Annual Average Daily Traffic
AC	Alternating current
AEP	Annual Exceedance Probability
ALC	Agricultural Land Classification
AOD	Above Ordnance Datum
APFP Regulations	Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
AQMA	Air Quality Management Area
AQO	Air Quality Objective
ASA	Alternative Sites Assessment
BDC	Bassetlaw District Council
BAP	Biodiversity Action Plan
BAT	Best Available Technique
BEIS	Department for Business, Energy and Industrial Strategy
BESS	Battery Energy Storage System
BGS	British Geological Survey
BMS	Battery Management System
BMW	Best and Most Versatile
BNL	Basic Noise Level
BPM	Best Practicable Means
BS	British Standard
CCRA	Climate Change Risk Assessment
CCS	Considerate Constructors Scheme
CCTV	Closed Circuit Television
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
COPA	Control of Pollution Act
COSHH	Control of Substances Hazardous to Health

Term	Meaning
CPRE	Campaign to Protect Rural England
CRC	Cable Route Corridor
CRMP	Construction Resource Management Plan
CSM	Conceptual Site Model
CTMP	Construction Traffic Management Plan
CWS	County Wildlife Site
DAS	Design and Access Statement
dB	Decibel
DC	Direct current
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
DEMP	Decommissioning Environmental Management Plan
DMRB	Design Manual for Roads and Bridges
DRMP	Decommissioning Resource Management Plan
DSEAR	Dangerous Substances and Explosive Atmospheres Regulations 2002
DTMP	Decommissioning Traffic Management Plan
DWS	Drinking Water Standards
EA	Environment Agency
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
END	Environmental Noise Directive
EPS	European Protected Species
ES	Environmental Statement
FAT	Factory Acceptance Testing
FMEA	Failure Mode and Effects Analysis
FRA	Flood Risk Assessment
GCN	Great Crested Newt
GHG	Greenhouse Gas
GI	Ground Investigations
GIS	Geographical Information System

Term	Meaning
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GPR	Ground Penetrating Radar
GRA	Groundwater Risk Assessment
GRP	Glass Reinforced Plastic
HAZOP/HAZIP	Hazard and Operability Analysis and Hazard Identification
HDD	Horizontal Directional Drilling
HDV	Heavy Duty Vehicles
HER	Historic Environment Record
HGV	Heavy Goods Vehicle
HIA	Heritage Impact Assessment
HSC	Hazardous Substances Consent
HSE	Health and Safety Executive
IAN	Interim Advice Note
IAQM	Institute of Air Quality Management
ICOMOS	International Council on Monuments and Sites
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEMA	Institute of Environmental Management and Assessment
IEFs	Important Ecological Features
JNCC	Joint Nature Conservation Committee
$kV\text{m}^{-1}$	Kilovolt per metre, unit of measurement for electric fields, 1,000 times greater than volt per metre ($V\text{m}^{-1}$).
L_{A10}	A-weighted, sound level exceeded for 10% of the measurement period.
L_{A90}	A-weighted, sound level exceeded for 90% of the measurement period.
L_{Aeq}	A-weighted, equivalent sound level over the measurement period.
L_{AFmax}	A-weighted, maximum sound level over the measurement period, measured on 'fast' response.
LAQM	Local Air Quality Management
LCA	Landscape Character Area
LCT	Landscape Character Type
LEMP	Landscape and Ecological Management Plan

Term	Meaning
LFP	Lithium Iron Phosphate
LGS	Local Geological Sites
LiDAR	Light Detection And Ranging
LCC	Lincolnshire County Council
LLCA	Local Landscape Character Area
LNR	Local Nature Reserve
LOAEL	Lowest Observable Adverse Effect Level
LTCA	Local Townscape Character Area
LV	Limit Value
LVIA	Landscape and Visual Impact Assessment
L _w	Sound Power Level
MCA	Mineral Consultation Areas
MOD	Ministry of Defence
MSA	Mineral Safeguarding Areas
MT	Motorised Travellers
μT	Micro tesla, unit of measurement for magnetic flux density of magnetic fields, 1,000,000 times smaller than a tesla (T).
NCA	National Character Areas
NETS	National Electricity Transmission System
NGESO	National Grid Electricity System Operator Limited
NHLE	National Heritage List for England
NIA	Noise Impact Area
NMC	Lithium Nickel Manganese Cobalt Oxide
NMU	Non-Motorised Users
NCC	Nottinghamshire County Council
NNR	National Nature Reserve
NRMM	Non-road Mobile Machinery
NOEL	No Observed Effect Level
NPPF	National Planning Policy Framework 2021
NPS	National Policy Statement

Term	Meaning
NRMM	Non-Road Mobile Machinery
NSIP	Nationally Significant Infrastructure Project, as defined by the Planning Act 2008 (as amended)
NTS	Non-Technical Summary
NVC	National Vegetation Classification
OEMP	Operation Environmental Management Plan
OS	Ordnance Survey
OUV	Outstanding Universal Value
PA 2008	Planning Act 2008
PEI	Preliminary Environmental Information
PEIR	Preliminary Environmental Information Report
PHE	Public Health England
POC	Point of Connection
PPE	Personal Protective Equipment
PPG	Planning Practice Guidance
PPV	Peak Particle Velocity
PRA	Preliminary Geo-Environmental Risk Assessment
PRoW	Public Right of Way
PWS	Private Water Supplies
RAF	Royal Air Force
RBMP	River Basin Management Plan
RHS	River Habitat Survey
RPG	Registered Park and Garden
RSPB	Royal Society for the Protection of Birds
RV	Representative Viewpoint
SAO	Study Area Only
SAT	Site Acceptance Testing
SLA	Special Landscape Area
SM	Scheduled Monument
SOCC	Statement of Community Consultation

Term	Meaning
SOAEL	Significant Observed Adverse Effect Level
SoCG	Statement of Common Ground
SoS	Secretary of State
SPI	Species of Principal Importance
SPZ	Source Protection Zone
SQEP	Suitable Qualified and Experienced Persons
SRMP	Soil Resource Management Plan
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Strategy
TA	Transport Assessment
TPO	Tree Preservation Order
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VP	Viewpoints
VR	Visual Receptor
WFD	Water Framework Directive
WLDC	West Lindsey District Council
WHO	World Health Organisation
WHS	World Heritage Site
ZTV	Zone of Theoretical Visibility