Kingsway Solar Farm

PEIR

Non-Technical Summary

September 2025

Glossary and Abbreviations List

Glossary of Terms

Term	Definition
Above-ground electric transmission line	A high-voltage power line supported by towers or poles that transmits electricity over long distances across the landscape. These lines are used to transport electricity from generation sources such as the Scheme to distribution networks or large-scale consumers. Their design and routing are subject to technical, environmental, and planning considerations.
Agricultural Land Classification (ALC)	A system used in England and Wales to assess the quality of land for agricultural use. ALC grades land from Grade 1 (excellent quality) to Grade 5 (very poor quality), with Grade 3 subdivided into 3a and 3b. It is based on factors such as climate, soil, and topography.
Air Quality Management Area (AQMA)	A designated area where air pollution levels exceed national air quality objectives. Local authorities declare AQMAs when pollutants such as nitrogen dioxide (NO_2) or particulate matter (PM_{10}) pose a risk to public health. Once declared, the authority must develop an action plan to improve air quality in the area.
Applicant	The Applicant is Kingsway Solar Farm Limited, a wholly owned subsidiary of Downing LLP which established Downing Renewable Developments ('DRD') to deliver renewable energy infrastructure across the UK. For the DCO Application, the Applicant is responsible for preparing and submitting documentation, conducting consultations, and ensuring compliance with relevant legislation and policy requirements.
Arable land	Land suitable for growing crops. It is typically ploughed and used for the cultivation of cereals, vegetables, and other field crops, as opposed to land used for permanent pasture or woodland.
Associated Development	Development that is directly related to a NSIP and necessary to support its construction or operation. Under Section 115 of the Planning Act 2008, associated development may be included within a DCO if it facilitates or is integral to the NSIP.
Baseline	A reference point or set of environmental conditions used for comparison over time. In EIA contexts, a baseline a baseline typically represents the existing state of a system or environment before any changes, interventions, or developments occur.
Battery Energy Storage System (BESS) Unit	A system (unit) that stores electrical energy in batteries for later use. BESS helps balance energy supply and demand, supports grid stability, and enables the integration of renewable energy sources by storing (Import) excess power and releasing (Export) it when needed.
BESS Compound	The physical site containing the Battery Energy Storage System (BESS) Units, and other associated equipment. To be located within Developable Area B.
On-Site Substations	The equipment that transforms the voltage of electricity to be switched for transmission/distribution, and typical in a compound with a building.

Term	Definition
Best and Most Versatile Quality (BMV)	A classification of agricultural land in England and Wales that includes Grades 1, 2, and Subgrade 3a under the ALC system. BMV land is considered the most productive and flexible for a wide range of agricultural uses and is given significant protection in planning policy due to its value for food production.
Biodiversity Net Gain (BNG)	An approach to development and land management that requires developers to assess the biodiversity value of a site before development and ensure that, after development, the biodiversity value is increased by a minimum percentage—typically 10% in England under current planning policy.
Chartered Institute of Ecology and Environmental Management (CIEEM)	The professional body of ecologists and environmental managers, many of which are either Chartered Ecologists or Chartered Environmentalists.
Conservation Area	An area designated under section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990 as being of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance. Local planning authorities identify and manage these areas to protect their distinctive heritage and townscape qualities.
Cumulative effects	The summation of effects that result from changes resulting from the Scheme in conjunction with other reasonably foreseeable human induced effects. Effects can be direct and indirect and are within a specified geography across a certain time frame.
Decommissioning	The process of safely dismantling and removing infrastructure, equipment, or facilities that are no longer in use.
Decommissioning Phase	The phase of the Scheme where all above-ground components would be dismantled and removed from the Site. It is generally assumed that below-ground infrastructure, such as concrete foundations for the substations and pylon bases, would be removed, subject to landowner agreement, and the land reinstated. Any underground cable sections would also be removed, unless designations or environmental sensitivities determine otherwise.
Developable Areas	This refers to the land needed for the Scheme, excluding the Inter-Array Connection Corridor and the Grid Connection Corridor. It is the designated area for the solar PV generating station, Battery Energy Storage System (BESS), and other associated development. The Developable Areas covers approximately 1,255 hectares (ha) and comprise three key areas—Development Areas A, B, and C.
Developable Area A - West	This area comprises approximately 213ha. Located north east to Worsted Lodge and east of the A11. It is bounded to the north by a length of deciduous broadleaved woodland, with arable fields divided by native hedgerows.
Developable Area B – Central	This area comprises approximately 490ha. Located between the A11 to the north west and Balsham to the south east. The Wadlow Wind Farm is located centrally within the Site, with arable fields divided by hedgerows, ditches and small areas of woodland.
Developable Area C - East	This area comprises approximately 543ha. Located between Willingham Green, Weston Colville and West Wratting.

Term	Definition
Development Consent Order (DCO)	A statutory instrument granted by the Secretary of State under the Planning Act 2008 for nationally significant infrastructure projects (NSIPs) in England and Wales. A DCO provides consent for all necessary planning and related permissions in a single approval process, streamlining the delivery of major developments such as energy, transport, and water infrastructure.
DCO Application	An application made to the Planning Inspectorate for consent to carry out a Nationally Significant Infrastructure Project. The Planning Inspectorate issues a recommendation to the relevant Secretary of State who decides if development consent is granted.
DCO Requirement	the conditions and stipulations within DCO which are legally binding rules that must be followed to implement the approved development. The DCO Requirements state the specific actions, design specifics, and processes that the developer must undertake after the DCO is granted.
Direct effect	An effect directly attributable to the Scheme.
Enhancement	Beneficial effects through restoration, reconstruction or creation as a result of the Scheme.
Environmental effect	The consequence of an impact on the environment. For example, removal of soils and lithology (impact) potentially disturbing underlying buried heritage sensitive receptors (effect).
Environmental impact	A physical or measurable change to the environment that is caused by an action attributable to the Scheme. For example, excavation works leading to the removal of underlying soils and lithology. Impacts can be direct, indirect, secondary, cumulative and inter-related, and can be either positive (beneficial) or negative (adverse).
Environmental Impact Assessment (EIA)	A formal process used to evaluate the likely significant environmental effects of a proposed development before consent is granted. Required under UK law for certain projects, particularly NSIPs, the EIA identifies, predicts, and assesses effect on factors such as air, noise and biodiversity. The findings are presented in an Environmental Statement (ES).
Environmental Management Plan	An Environmental Management Plan is a project-specific document or a set of documents outlining how to mitigate, avoid, or offset negative environmental impacts and ensure compliance with regulations at different stages of a project. They become legally binding if they are required planning condition, or 'Requirement' in the case of a DCO. Local Planning Authorities and local councils will expect the steps outlined in the Management Plan to be followed and have the power to take enforcement action against developers who do not follow them.
Environmental Statement (ES)	A formalised statement prepared as part of the EIA process. It will present the findings of the EIA, detailing the likely significant environmental effects of the Scheme, proposed mitigation measures, and any alternatives that were considered. The ES will include information reasonably required to assess the environmental effects of the Scheme, based on current knowledge and assessment methods, but at the least include the information specified in the EIA Regulations. This document will be submitted with the DCO Application to provide decision-makers and the public with necessary information during the DCO process.
Examining Authority	A person or panel appointed by the Planning Inspectorate to examine applications for DCOs under the Planning Act 2008. The Examining Authority is responsible for conducting the examination of a NSIP, considering all relevant representations, and

Term	Definition
	making a recommendation to the Secretary of State on whether consent should be granted. The panel may consist of a single inspector or up to five inspectors, depending on the complexity of the project
Flood Zone 1	Land with a low probability of flooding. It has less than a 1 in 1,000 annual probability of river or sea flooding (i.e. <0.1%). All land outside Zones 2 and 3 is considered Zone 1.
Flood Zone 2	Land with a medium probability of flooding. It has between a 1 in 100 and 1 in 1,000 annual probability of river flooding, or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (i.e. 0.1%–1%).
Flood Zone 3a	Land with a high probability of flooding. It has a greater than 1 in 100 annual probability of river flooding or greater than 1 in 200 annual probability of sea flooding (i.e. >1%).
Flood Zone 3b	Land where water has to flow or be stored in times of flood. Typically defined as land that would flood with an annual probability of 1 in 20 (i.e. 5%) or greater. This zone is classified as functional floodplain, and is deemed to be the most at risk land of flooding from rivers or the sea. This zone is usually identified through Strategic Flood Risk Assessments and is subject to the strictest development controls.
Fluvial	Relating to a river.
Gigawatt (GW)	A unit of power equal to 1 billion watts (1,000,000,000 W). It is commonly used to express the capacity of large-scale power generation facilities, such as power stations or national energy grids.
Glare	A continuous source of bright light typically received by static receptors or from large reflective surfaces.
Glint	A momentary flash of bright light typically received by moving receptors or from moving reflectors.
Grid Connection	The 400kV overhead line connection would be installed within the Grid Connection Corridor, connecting the northern extent of the Developable Areas to the planned Burwell South Substation. Steel lattice pylons would be used, typically standing around 50m tall, but some may reach up to 65m for the A14 crossing. Typical span lengths are expected to be between 330m and 340m. Pylon heights and span lengths may be adjusted based on detailed routeing, crossings (roads, railways), topography and other local site constraints. This Grid Connection would connect the Scheme to the national electricity transmission system (NETS).
Grid Connection Corridor	The land within which the connection from the northern extent of the Developable Areas to the planned Burwell South Substation would be installed. The exact location of the Burwell South Substation is to be confirmed, so the Grid Connection Corridor has been defined with flexibility to accommodate the final connection location. It covers an area of approximately 1,116ha.
Groundwater	Water held underground in soil or rock crevices.
Historic England	The statutory body responsible for matters relating to designated heritage assets.
Historic Environmental Record	A record of know archaeological features, historic buildings and historic landscape features maintained by each County and Unitary Authority within the United Kingdom.

Term	Definition
Impact	See 'Environmental impact' above.
Indirect effects	Effects that result indirectly from the Scheme as a consequence of the direct effects, often occurring away from the Site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or time from the source of the effects.
Inter-Array Connections 1 and 2	The two separate connections required to link the Developable Areas. Inter-Array Connection 1 joins Developable Area A – West with Developable Area B – Central, while Inter-Array Connection 2 links two distinct land parcels within Developable Area C – East. Both overhead line and underground cable options, each cable of operating at up to 132 kV, are being considered.
Inter-Array Connection Corridors	The land within which Inter-Array Connections 1 and 2 would be installed to link the Developable Areas.
Inter-Array Connection Corridor 1	Inter-Array Connection 1 links Developable Area A – West with Developable Area B – Central. This corridor runs approximately from Dungate Farm in the west to Rectory Farm in the east, covering about 277ha.
Inter-Array Connection Corridor 2	Inter-Array Connection 2 links two distinct land parcels within Developable Area C – East, situated in fields south of Brook Lane and north east of Weston Colville, spanning roughly 35ha.
Inverters	Devices used to convert power between direct current (DC) electricity to alternating current (AC).
Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended in 2018) (EIA Regulations)	A set of statutory regulations that govern the EIA process for NSIPs in England and Wales. The EIA Regulations outline the procedures for screening, scoping, consultation, and the preparation of ES. They ensure that environmental considerations are integrated into the planning and decision-making process for major infrastructure developments.
Listed building	A building or structure included in the list made by the Secretary of State for Culture, Media and Sport of special architectural or historic interest.
Main river	Main rivers are usually larger rivers and streams, designated as such, and shown on the "Main River Map". The Environment Agency carries out maintenance, improvement or construction work on main rivers to manage flood risk.
Magnitude	A combination of the scale, extent and duration of an effect.
Megawatt (MW)	A unit of power equal to 1 million watts (1,000,000 W). It is typically used to measure the output of medium-scale energy systems, such as wind turbines, solar farms, or industrial facilities.
Mitigation Measures	An action or process proposed to avoid, prevent, reduce and where possible offset significant adverse environmental effects arising.

Term	Definition
National Electricity Transmission System (NETS)	High voltage electricity transmission network across England and Wales comprising pylons, overhead lines, cables and substations that supply low voltage local distribution networks.
National Grid	The system operator of electricity and gas supply within Great Britain.
National Planning Policy Framework (NPPF)	The framework for the Government's planning policies for England and how these policies should be applied.
National Policy Statements (NPS)	Statutory documents published in accordance with the Planning Act 2008 (PA 2008) for nationally significant infrastructure projects (NSIPs). They set out the Government's policy for the delivery of energy infrastructure and provide the legal framework for planning decisions in key energy policy areas.
Nationally Significant Infrastructure Project (NSIP)	Major infrastructure projects in England and Wales that require a national-level decision-making process.
Non-Technical Summary	A clear and concise document that simplifies technical information, making it easily understandable and accessible to a wider audience, including the general public.
On-Site Substations	The equipment within the BESS and On-Site Substation Compounds that transforms the voltage of electricity to be switched for transmission.
Ordinary watercourse	An ordinary watercourse is any river, stream, brook, ditch, drain, culvert, pipe or any other passage that water flows through. It is not designated as a Main river (as marked on Environment Agency main river map and defined above). Lead local flood authorities, district councils and internal drainage boards carry out flood risk management work on ordinary watercourses.
Outline Construction Environmental Management Plan (Outline CEMP)	An overarching document that outlines the proposed measures to manage and mitigate environmental impacts during the Scheme's construction phase. It outlines key principles, responsibilities, and procedures for controlling issues such as noise, dust, water pollution, and ecological protection. The Outline CEMP would be refined into detailed CEMP(s) prior to the commencement of works.
Outline Construction Traffic Management Plan (CTMP)	An overarching document that outlines the proposed measures for managing construction-related traffic during the Scheme's construction phase. It typically includes details on access routes, vehicle types and volumes, delivery schedules, site access arrangements, and safety measures. The Outline CTMP would be refined into detailed CTMP(s) prior to the commencement of works.
Outline Landscape and Ecological Management Plan	An overarching document that outlines the long-term strategies for managing and maintaining habitats, biodiversity, and landscaping after a development is completed.

Term	Definition
Outline Operational Environmental Management Plan	An overarching document that outlines the proposed measures to manage and mitigate environmental impacts during the Scheme's operational phase. It outlines key principles, responsibilities, and procedures for controlling issues such as noise, air quality, water management and ecological protection. The Outline OEMP would be refined into detailed OEMP(s) prior to the commencement of the operational phase.
Outline Decommissioning Environmental Management Plan	An overarching document that outlines the proposed measures to manage and mitigate environmental impacts during the Scheme's decommissioning phase. It outlines key principles, responsibilities, and procedures for controlling issues such as noise, air quality, water management and ecological protection. The Outline DEMP would be refined into detailed DEMP(s) prior to the commencement of the decommissioning.
Overhead line (OHL)	An electric power transmission or distribution line that is suspended above the ground using poles or towers. OHLs are used to transport electricity over long distances and are a visible component of the electrical grid. They are designed to carry high-voltage electricity and are subject to safety, environmental, and planning regulations.
Photovoltaic (PV)	A technology that converts sunlight directly into electricity using semiconductor materials, typically in the form of solar panels.
Planning Act 2008 (PA 2008)	A key piece of UK legislation that establishes the legal framework for the consenting process of NSIPs in England and Wales. The Act streamlines the approval process by introducing the DCO system, allowing multiple consents to be granted through a single application. It is administered by the Planning Inspectorate and applies to sectors such as energy, transport, water, and waste.
Planning Inspectorate	An executive agency of the UK government responsible for operating the planning process for NSIPs under the PA 2008. It also handles planning appeals, examinations of local plans, and other planning-related casework in England and Wales. For NSIPs, the Planning Inspectorate appoints the Examining Authority, manages the examination process, and makes recommendations to the relevant Secretary of State on whether to grant DCOs.
Preliminary Environmental Information	Information compiled by a developer about the likely environmental effects of a proposed development, provided during the pre-application stage of a NSIP under the PA 2008. PEI is shared with statutory consultees and the public as part of the consultation process and typically includes early findings from environmental assessments, proposed mitigation measures, and alternatives considered. It helps inform feedback before the final ES is submitted with the DCO application.
Preliminary Environmental Information Report (PEIR)	A technical report produced as part of the planning process for NSIPs that provides an early assessment of the potential effects of a proposed development. It allows the community, stakeholders and consultees to develop an informed view of the likely environmental impacts of a development.
Preliminary Risk Assessment (PRA)	A desk-based review on the potential risks in relation to contaminated land in regard to human health, controlled waters and the wider environment.
Priority habitat	Habitats conserved to be of principal importance for conserving habitats, listed in the UK Biodiversity Action Plan.
Receptor	A component of the natural, created or built environment such as humans, water, air, a building, or a plant that has the potential to be affected by the Scheme.

Term	Definition
Residual Effects	Those impacts of the Scheme that cannot be mitigated following implementation of mitigation proposals.
Scheduled Monument	A 'nationally important' archaeological site or historic building, given protection against unauthorised change.
The Scheme	All components within the Site, including but not limited to the solar PV electricity generating station, an above-ground electric transmission line, and associated development including a BESS, On-Site Substations and Inter-Array Connections.
(EIA) Scoping	An initial stage in determining the nature and potential scale of the environmental impacts arising from the proposed development and assessing what further studies are required to establish their significance.
Sensitivity	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor.
Significance (effect)	A measure of the importance or gravity of the environmental effect defined by significance criteria specific to the environmental topic.
Site	The total land area required for the Scheme. The Site comprises three Developable Areas (A, B, and C), Inter-Array Connection Corridors 1 and 2, and the Grid Connection Corridor.
Site of Special Scientific Interest (SSSI)	The land notified as a Site of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act (1981), as amended. SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features.
Solar PV modules	A connected collection of multiple solar PV cells within a protective laminate.
Solar PV supporting infrastructure	The components and equipment, including inverters, transformers, and switchgears, that convert the direct current (DC) electricity generated by the solar PV modules into alternating current (AC) and provide control and onward distribution of electricity across the Site.
Solar PV generating station	A facility that generates electricity using photovoltaic (PV) technology, which converts sunlight directly into electrical energy. These stations typically consist of large arrays of solar PV panels, inverters, and associated infrastructure, and can range from small-scale installations to utility-scale solar farms. The electricity produced is either used on-site or exported to the grid.
Solar Stations	Containerised units containing the equipment that converter the direct current (DC) electricity generated by the solar PV modules into alternating current (AC) and provide control and onward distribution of electricity across the PV Area.
Study area	The spatial area from within which the likely environmental effects resulting from the Scheme are assessed.
Sustainable Drainage System (SuDS)	Sustainable management practices designed to control the rate and quality of surface water runoff into receiving waters, for example the use of swales and wetlands as buffers, as opposed to conventional drainage practices.
Switchgears	A collection of electrical disconnect fuses, switches or circuit breakers that can be used to protect, control and isolate electrical equipment and circuits.
Transformers	The electrical component that allows electricity to transmit between circuits.

Term	Definition
Zone of Theoretical Visibility (ZTV)	The zone which represents visibility of the Scheme as determined through analysis of intervening natural and manmade terrain feature.

Abbreviations List

Acronym	Wording
AAWT	Annual Average Weekday Traffic
AC	Alternating Current
ADBA	Archaeological Desk Based Assessment
AIL	Abnormal Indivisible Loads
ALC	Agricultural Land Classification
AMS	Archaeological Management Strategy
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
ATC	Automatic Traffic Count
ATI	Ancient Tree Inventory
AQMA	Air Quality Management Area
BESS	Battery Energy Storage System
BDS	Biodiversity Data Search
BGS	British Geological Survey
BMV	Best Most Versatile
BNG	Biodiversity Net Gain
BS	British Standards
BSMP	Battery Safety Management Plan
BTO	British Trust for Ornithology
CBC	Common Bird Census

CCC	Cambridge County Council
CCGT	Combined Cycle Gas Turbine
CCRA	Climate Change Resilience and Adaptation
CCS	Carbon Capture and Storage
CCTV	Closed Circuit Television
CEA	Cumulative Effects Assessment
CEMP	Construction Environmental Management Plan
CHEP	Cambridgeshire Historic Environment Team
CIEEM	Chartered Institute of Ecology and Environmental Management
CLMA	Construction Labour Market Area
CNP	Critical National Priority
CMLI	Chartered Member of Landscape Institute
COSHH	Control of Substance Hazardous Health
CPERC	Cambridgeshire and Peterborough Environmental Records Centre
CSM	Conceptual Site Model
CSZ	Core Substance Zone
CTM	Conventional Tunnelling
CTMP	Construction Traffic Management Plan
CWS	County Wildlife Site
DBA	Desk-Based Assessment
DC	Direct Current
DCO	Development Consent Order
DEFRA	Department for Environment, Food and Rural Affairs
DEMP	Decommissioning Environmental Management Plan
DESNZ	Department for Energy Security and Net Zero
DMRB	Design Manual for Roads and Bridges
DTM	Design Terrain Model

DTMP	Decommissioning Transport Management Plan
DSM	Digital Surface Model
ECDC	East Cambridge District Council
EFT	Emissions Factor Toolkit
EIA	Environmental Impact Assessment
EPD	Environmental Product Declaration
EPS	European Protected Species
ES	Environmental Statement
ESDAL	Electronic Service Delivery for Abnormal Loads
ExA	Examining Authority
FBT	Farm Business Tenancy
FCD	Field Capacity Days
FTE	Full-Time Equivalent
GHG	Greenhouse Gases
GLRA	Ground-level roost assessment
GLVIA	Guidelines for Landscape for
GVA	Gross Value Added
GWP	Global Warming Protocol
HDD	Horizontal Directional Drilling
HER	Historic Environment Record
HGV	Heavy Good Vehicle
HIA	Health Impact Assessment
HPI	Habitats of Principle Importance
LCA	Local Character Area
LCT	Landscape Character Types
LGV	Large Goods Vehicle
IAQM	Institute of Air Quality Management

IEMA	Institute of Environmental Management and Assessment
IPPC	Intergovernmental Panel on Climate Change
JNCC	Joint Nature Conservation Committee
LCWIP	Local Cycling and Walking Infrastructure Plan
LEMP	Landscape and Ecological Management Plan
LGV	Light Good Vehicle
IAPA	Important Arable Plant Areas
LIDAR	Light Detection and Ranging
INNS	Invasive non-native species
LNR	Local Nature Reserve
IUCN	International Union for the Conservation of Nature
LVIA	Land and Visual Impact Assessment
MSA	Mineral Safeguarding Area
MSOA	Middle Super Output Area
MTC	Manual Traffic Count
MW	Megawatts
NCA	National Character Area
NCN	National Cycle Network
NCR	National Cycle Routes
NERC	National Environment and Rural Communities
NETS	National Electricity Transmission System
NGR	National Grid Reference
NHLE	National Heritage List for England
NMU	Non-Motorised User
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance

NPS	National Policy Statement
NDHA	Non-Designated Heritage Assets
NRMM	Non-Road Mobile Machinery
NSIP	Nationally Significant Infrastructure Project
OEMP	Operational Environmental Management Plan
OHL	Overhead Line
OSWDS	Operational Surface Water Drainage Strategy
PA	Planning Act
PEIR	Preliminary Environmental Information Report
PIC	Personal Injury Collision
PINS	Planning Inspectorate
PRA	Preliminary Risk Assessment
PRoW	Public Rights of Way
PRoWMP	Public Rights of Way Management Plan
PV	Photovoltaic
RIGS	Regionally Important Geological and Geomorphological Sites
SAC	Special Area of Conservation
SCDC	South Cambridge District Council
SEO	Statement of Environmental Opportunity
SoS	Secretary of State
SPA	Special Protection Area
SPD	Supplementary Planning Document
SPI	Species of Principle Importance
SMP	Soil Management Plan
SMR	Sites and Monuments Record
SRN	Strategic Road Network
SSSI	Site of Special Scientific Interest

SWMP	Site Waste Management Plan
UAA	Utilised Agricultural Area
UNESCO	United Nations Educational Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
VP	Vantage Point
WAC	Waste Acceptance Criteria
WEEE	Waste from Electrical and Electronic Equipment
WHC	Walkers, Cyclists and Horse Riders
WTN	Waste Transfer Note
ZTV	Zone of Theoretical Visibility

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1. Introduction

Background

This document has been prepared on behalf of Kingsway Solar Farm Limited (referred to as 'the Applicant') and provides a Non-Technical Summary (NTS) of the Preliminary Environmental Information Report (PEIR) for the proposed Kingsway Solar Farm.

The proposed Kingsway Solar Farm would comprise a solar electricity generating facility, including solar array sites, battery energy storage, and cable corridors (collectively referred to as 'the Scheme'). The location of the Scheme is shown in Plate 1. For a more detailed description of the Scheme, refer to Section 3 of this NTS, and for a complete understanding of the Scheme, this NTS should be read alongside the PEIR.

The Applicant intends to submit an application to the Secretary of State for Energy Security and Net Zero for a Development Consent Order (DCO)[1]. If approved, this will give consent for the construction, operation and decommissioning of the Scheme. The key components of the Scheme include:

- The '**Developable Areas**', the land parcels (A, B, and C) which would host the solar generation facilities (and associated supporting development), Battery Energy Storage System (BESS) and On-Site Substation Compounds.
- The '**Inter-Array Connection**', overhead lines up to 132kV (via wooden poles with a standard height of approximately 15m above ground level) and/or underground cabling within the land that separates the land parcels of the Developable Areas. The '**Inter-Array Areas**' are the areas within which the route of the Inter-Array Connection will be delivered.
- The '**Grid Connection**', a 400kV overhead line (via steel lattice style towers with a standard height of approximately 50m) connecting the northern extent of Developable Area B to the National Grid's planned Burwell South Substation to the north (distance of approximately 15km). The '**Grid Connection Corridor**' is the area within which the overhead line will be delivered.

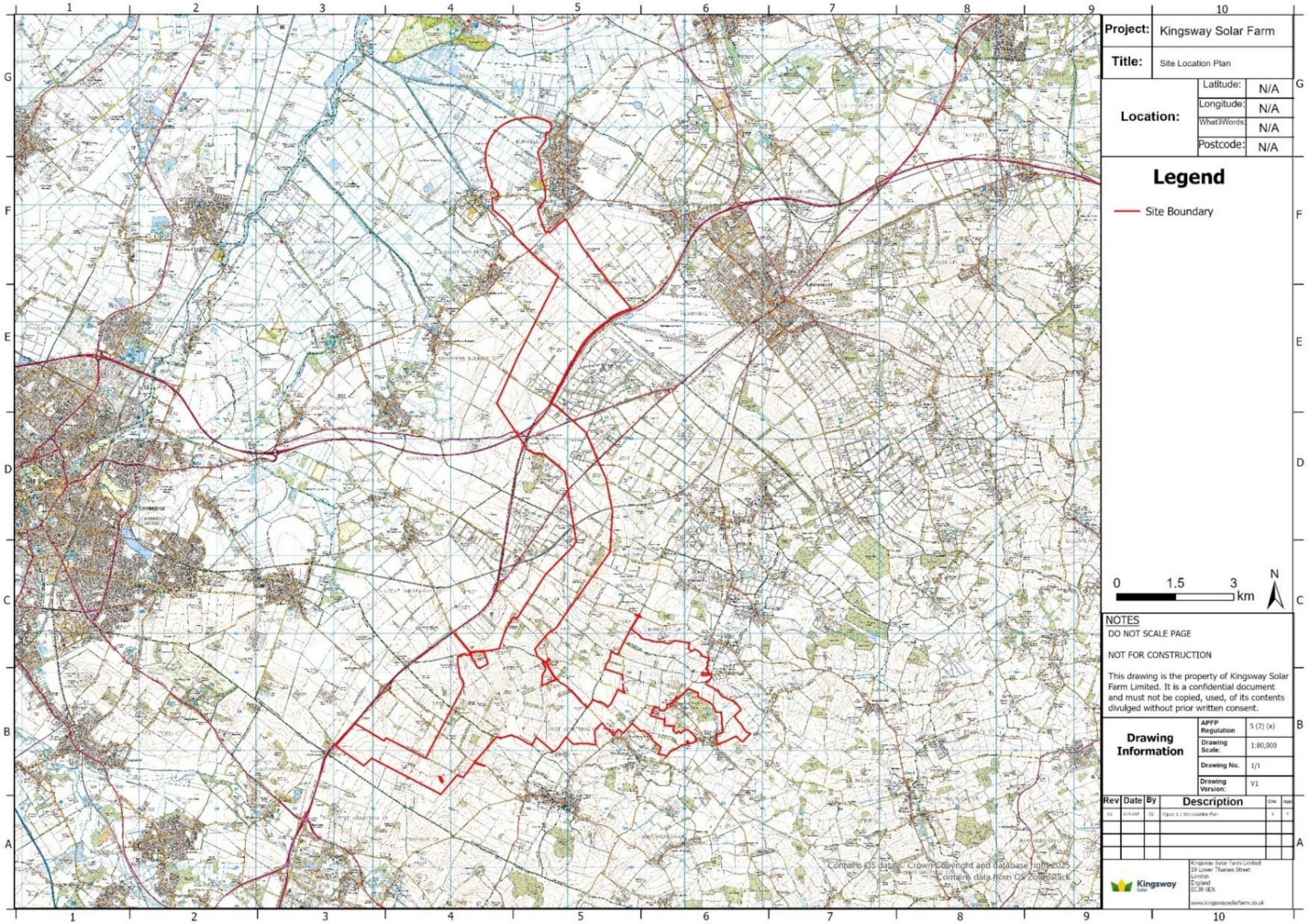
Because of its scale and nature, the Scheme has to complete an Environmental Impact Assessment (EIA) in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (from here on referred to as the 'EIA Regulations').

The PEIR presents the preliminary findings of the EIA undertaken by the Applicant to date, based on the current design for the Scheme and based on currently available baseline information, informed by a combination of desk-based research and site surveys.

While efforts have been made to use non-technical language throughout, this document should also be read alongside the Glossary at the start of this NTS.

[1] A DCO is a means of obtaining permission for a development categorised as a Nationally Significant Infrastructure Project (NSIP).

Plate 1: Site Location Plan



The Applicant

The Applicant promoting the Scheme is Kingsway Solar Farm Limited, a subsidiary of United Kingdom-based investment manager Downing Renewable Developments LLP (DRD) founded by Downing LLP. DRD has invested in renewables since 2010 and has developed, delivered, and operated projects in both the UK and the Nordics - supporting these countries' low-carbon energy future.

Purpose of the PEIR and NTS

The PEIR presents an overview of the preliminary environmental information available about the Scheme based on design information available at this stage. Technical assessments have followed an EIA approach, adopting a reasonable precautionary approach to assessments in the context of ongoing design refinement.

The information presented in the PEIR is 'preliminary' and does not represent a final Scheme design or include final environmental assessment conclusions. Further consultation responses will contribute to the Scheme design and additional information on the impacts of the Scheme will be included in the Environmental Statement (ES) that will accompany the DCO Application. This may result in a revision of the significance of effects in the final ES. The ES will present the detailed findings of the EIA.

The PEIR is being published to accompany the statutory consultation under Sections 42 and 47 of the Planning Act 2008 and follows informal consultation undertaken by the Applicant in early 2025. The formal pre-application consultation runs for a period of six weeks.

The purpose of this NTS is to provide a summary of the PEIR in non-technical language.

Consultation Strategy

Effective and ongoing consultation is crucial to the development of a comprehensive and balanced ES, and to help inform the design of a Scheme. It is also a requirement for DCO Application processes.

Consultation will be, and has been, undertaken with both statutory bodies, which legally require consultation, and non-statutory bodies, which offer voluntary advice. Consultation with these bodies, together with the public will or has happened prior to submission of the DCO Application.

2. The Scheme Location

The Site Location and Extent

The Site is located approximately 10.5km south east of Cambridge city centre, approximately 3.5km west of Newmarket, approximately 1.1km north of the village of Balsham and approximately 200m west of the village of Burwell. The village of West Wratting is adjacent to Developable Area C.

The Site is located within the administrative boundaries of East Cambridgeshire District Council (ECDC) and South Cambridgeshire District Council (SCDC).

The Site covers an area of approximately 2,683 hectares (ha), representing the maximum anticipated area required to facilitate the construction, operation (including maintenance) and decommissioning of the Scheme. The Site boundary may be revised in response to the statutory consultation process and ongoing Scheme design development ahead of the ES and DCO Application submission.

Site Description

The Site includes the following elements, which are shown in Plate 2:

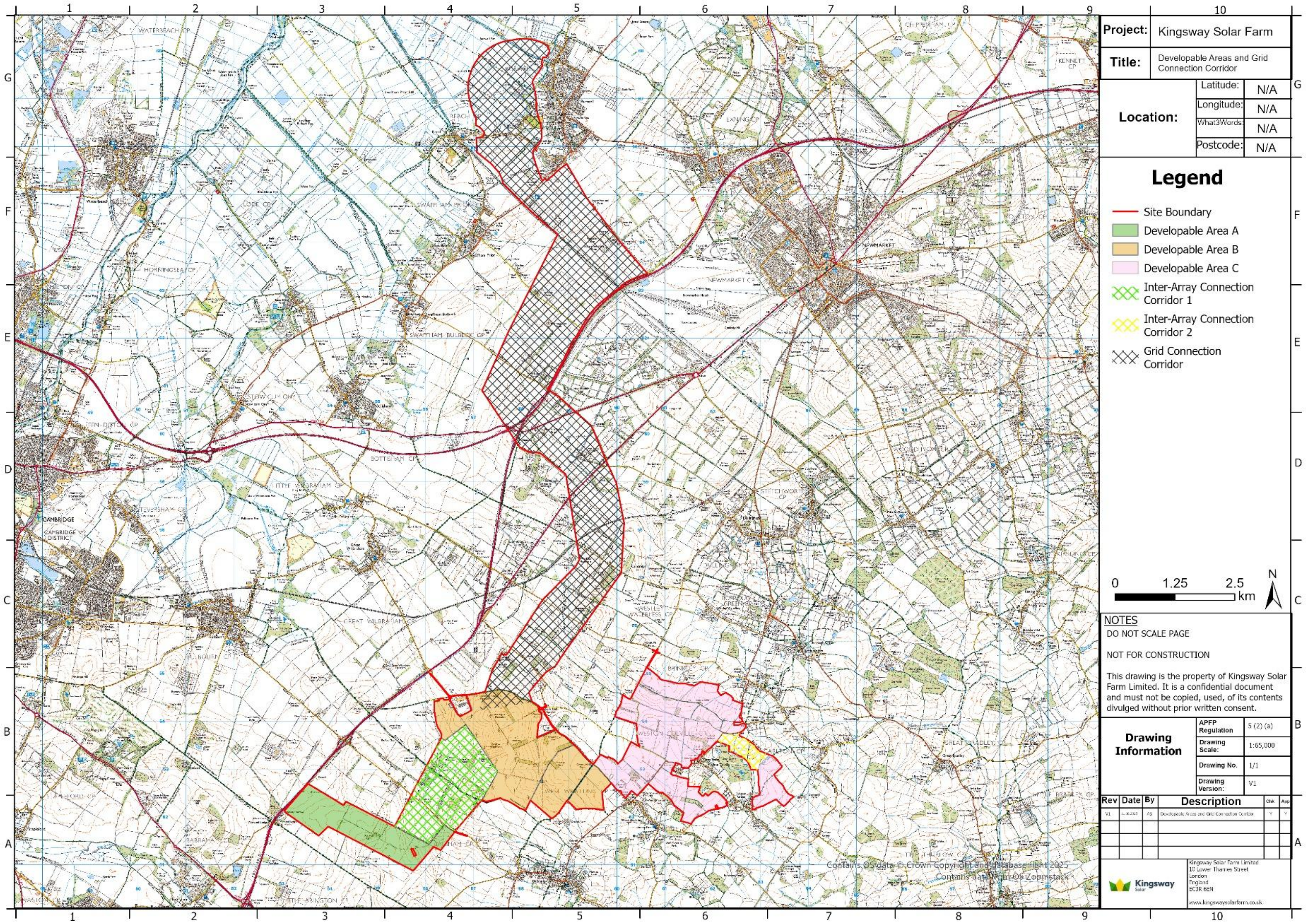
- Developable Area A - West: This area comprises approximately 213ha. Located north east to Worsted Lodge and east of the A11. It is bounded to the north by a length of deciduous broadleaved woodland, with existing farmland divided by native hedgerows.
- Developable Area B – Central: This area comprises approximately 490ha. Located between the A11 to the north west and Balsham to the south east. The Wadlow Wind Farm is located centrally within the Site, with existing farmland divided by hedgerows, ditches and small areas of woodland.
- Developable Area C - East: This area comprises approximately 543ha. Located between Willingham Green, Weston Colville and West Wratting.
- Inter-Array Corridor 1 and 2: These are very similar to the Developable Areas, comprising existing farmland, divided by smaller areas of woodland and hedgerows. Inter-Array Corridor 1 and 2 cover an area of 277ha and 35ha, respectively.
- Grid Connection Corridor: This area is predominately comprised of existing farmland but is also intersected by several major road and rail links cross the corridors including the A14, A11, A1303, A1304, and Greater Anglia Cambridge to Newmarket rail line. It covers an area of 1116ha and extends directly to the west of Newmarket racecourse and Newmarket Heath Airfield and to the north in between the settlements of Swaffham Prior to the west and Burwell to east.

The areas included within the Inter-Array Connection Corridors and Grid Connection Corridor do not represent the exact area required for their installation, but rather shows the area under consideration within which these connections would be routed and then installed. They will continue to be refined as routing for these connections is progressed in the lead up to the DCO Application.

Key Environmental Sensitivities

PEIR Volume 3, Figures 2.1 to 2.9 identifies the existing environmental designations and key features within and close to the Site.

Plate 2: Main Components of the Scheme



3. Scheme Description

The Scheme would include the construction, operation and decommissioning of a solar panel electricity generating facility with associated BESS, Inter-Array Connection (to link the land parcels that form the Developable Areas) and an overhead line Grid Connection from the Developable Areas to a point of connection at the proposed Burwell South Substation to the north west of Burwell. The Scheme would have capacity to generate energy for approximately 175,000 homes.

As with other DCO schemes, flexibility is required at the PEIR stage for elements of the Scheme which is then refined up to the point that the DCO Application is made. This is to allow the design of the Scheme to take advance of the results of ongoing environmental investigations and surveys, evolutions in technology, and ongoing consultation and engagement. For the purposes of the PEIR, assumptions of likely impacts have been applied conservatively against elements of the Scheme where flexibility is sought at this stage. The design parameters from which the preliminary assessment has been completed are outlined in full within **PEIR Volume 1, Chapter 3: The Scheme,** as well as within specific topic chapters where relevant (**PEIR Volume 2, Chapters 6 to 16**).

Developable Areas

The three Developable Areas designated for solar panels and associated development cover a total of approximately 1,246ha, as described in Section 2, and will contain the following elements.

Solar Panels and Mounting Structures

Solar panels convert sunlight into electricity. Solar panels are typically made up of small electricity-generating cells that sit behind strong glass and are held together by a sturdy metal frame.

Each row of solar panels would be mounted on a rack supported by galvanised steel poles, either driven into the ground or on feet mounted on concrete pads. It is anticipated that the solar panels would face predominantly south.

For the purposes of the PEIR, the height of solar panels has been assumed to reach a maximum of up to 4.2m with a minimum height of the lowest part of the solar panels reaching 0.5m.

Battery Units and BESS Compound

The BESS is designed to store electricity generated by the solar panels or imported from the National Grid, allowing energy to be supplied when needed rather than only when it is produced. This system helps balance supply and demand, maximises the use of renewable energy, and supports overall grid stability.

The BESS is included in the Scheme to improve energy management and efficiency. It would store energy during times of low demand and release it during peak periods, allowing the Scheme to better align electricity supply with demand.

Each BESS primarily consists of battery cells housed in shipping container-style enclosures, along with the necessary ancillary infrastructure such as transformers and inverters for integration with the wider Site. Each unit would offer a storage capacity ranging from approximately 3MWh to 7MWh, with the potential for higher capacities as technology develops. The total number of units required will be determined as the Scheme's detailed design evolves with up to 300 units expected as part of the Scheme. Each unit is anticipated to have a footprint similar to a standard shipping container—about 12.5m long, 3m wide, and 4m high.

The BESS infrastructure would be situated within a BESS Compound, located with or alongside the 400kV on-site Substation compound in Developable Area B, to minimise cabling distance and energy losses.

On-Site Substation

In total, there would be three on-site Substation Compounds:

- A main 400 kV/33 kV substation compound located in the northern part of Developable Area B, which would include or be located alongside the BESS Compound.
- Two 132 kV/33 kV substation compounds, one situated in the south east corner of Development Area A, and the other in the south west part of Development Area C.

On-Site Substations would contain the electrical equipment to control, manage and meter electricity transmitted and distributed across the Scheme. The On-Site Substations would facilitate the transfer of electricity between land parcels via the Inter-Array Areas and the export of electricity from the Developable Areas to the proposed Burwell South Substation (and the Grid beyond) via the Grid Connection.

Solar Panels and BESS Supporting Infrastructure

Solar Station

Elements of the Solar panel supporting infrastructure would be housed within shipping containers, referred to as solar stations. The containers would house the solar PV inverters, a medium voltage transformer, and a switchgear. A description of these is provided below.

Inverters

Inverters are required to convert the direct current (DC) electricity generated by the solar panels into alternating current (AC), which is compatible with electricity export to NETS. As the design continues to develop, central inverters are expected to be used and positioned at regular intervals across the Developable Areas, each situated on hardstanding bases.

It is anticipated that an approximate total of 250 inverters would be required, with each inverter housed in a shipping container, likely to measure 6m wide, 2.9m in height, 2.5m in depth.

Transformers

Transformers are required to step-up or step-down voltage of the electricity generated across the Site before it reaches an on-site Substation. These would be located at various points throughout the Site with specific voltages being confirmed through detailed design.

Switchgears

Switchgear equipment is required to control, protect and isolate various pieces of electrical equipment on the Site. Switchgear ensures the safe and efficient distribution of electrical power by enabling the interruption of fault currents, the disconnection of circuits for maintenance, and the protection of equipment from overloads and short circuits. Switchgear infrastructure is typically housed in buildings; however, the configuration of equipment is subject to further refinement as the design of the Scheme progresses.

On-Site Cabling

Low voltage on-site electrical cabling is required to connect the solar panels and BESS to inverters (typically via 1.5/1.8 kV cables), and the inverters to the transformers on-site (typically via 0.6/1 kV cables).

Both overhead line and underground cable options are being considered however cabling from the panels to the inverters would be above ground secured to mounting structures, with a small section placed underground where it leaves the modules and connects to the inverters. Groups of panels are connected to create a “string”.

Data cables would typically run alongside these electrical cables to allow for monitoring during operation.

Associated Infrastructure

In addition to the above, a number of other components will be part of the Scheme, including:

- Fencing, lighting and security;
- Accesses and internal tracks; and
- Sustainable drainage systems.

Inter-Array Area Connection Corridors

Two separate connection corridors are required to link the Developable Areas:

- Inter-Array Connection Corridor 1: Connects Developable Area A – West with Developable Area B – Central. This corridor runs approximately from Dungate Farm in the west to Rectory Farm in the east, covering about 277ha with a maximum span on approximate 2.8km.
- Inter-Array Connection 2: Links two distinct land parcels within Developable Area C – East, situated in fields south of Brook Lane and north east of Weston Colville, spanning roughly 35ha with a maximum span of approximately 1.2km.

Electrical transmission infrastructure within these Inter-Array Connection Corridors would traverse agricultural fields and cross watercourses as needed. Inter-Array Connection Corridors 1 and 2 provide sufficient flexibility to accommodate the final configuration of Inter-Array Connections 1 and 2 that will be developed and form part of the DCO Application. The extent of land required for the Inter-Array Connection Corridors, including temporary areas for construction and access, would likely be less than the total area currently identified for Inter-Array Connection Corridors 1 and 2.

Both overhead line and underground cable options, up to an operating voltage of 132 kV, are being considered. Plate 3 shows an example of an overhead line.

Plate 3: Overhead line and Trident Wood Poles

Grid Connection Corridor

The electricity generated by the Scheme would be exported to National Grid's new sub-station approximately 15km to the north of the Site, Burwell South, via a new grid connection. The Grid Connection Corridor defines the indicative area within which the Grid Connection may be located.

The Grid Connection would be via a 400kV overhead line, installed using steel lattice pylons (see Plate 4). The standard pylon height would be approximately 50m, with pylons reaching up to 65m for the A14 crossing. Typical span lengths are expected to be between 330m and 340m. Pylon heights and span lengths may be adjusted based on detailed routeing, crossings (roads, railways), topography and other local site constraints.

The proposed route for the Grid Connection Corridor will continue to be refined through ongoing evaluation and stakeholder engagement.

Plate 4: Typical L8 Steel Lattice Pylon (Source: telcontar.net)

Access

All accesses into the Scheme, including temporary access for the construction phase and the decommissioning phase, will be confirmed as the Scheme design progresses and in consultation with local authorities' highways team and National Highways where required.

Developable Area A would be accessed via the Brinkley Road, Developable Area B would be accessed via London Road and Six Mile Bottom Road and Developable Area C would be accessed from Six Mile Bottom Road, Grange Road, Brinkley Road, Chapel Road and can also be reached via London Road and routing through Developable Area B.

The Grid Connection Corridor north of the B1102 can be accessed from Hightown Drove and Weirs Drove leading to Reach Road and onto the B1102. Access to the Grid Connection Corridor north on land south of the B1102 is possible via new junctions directly from the road. The Grid Connection Corridor east of Swaffham Prior may be accessed from Heath Road and Swaffham Heath Road, with the A1303 providing a further access. Further access via and internal tracks is possible.

Internal access tracks would be constructed across the solar panel areas, typically 5m wide, with some localised areas being wider to accommodate the turning circles of larger vehicles. These would facilitate maintenance access to key areas of development such as the BESS and On-Site Substations.

Water Management

An outline Drainage Strategy will be developed for the final DCO Application to establish how surface water from the Scheme will be managed in relation to flood risk, which is identified as low for most of the Site. The final Scheme drainage design will consider the results of the hydrological assessment and associated Flood Risk Assessment (FRA) which will be presented within the ES. The Drainage Strategy will be agreed before construction starts and followed throughout the operational phase, not contributing to newly introduced flood risk.

Biodiversity and Landscape

Wherever feasible, existing hedgerows, woodlands, ditches, ponds, and field margins would be retained within the arrangement of the solar arrays, except where small breaks or crossings are necessary for new access tracks, security fencing, and on-site cabling and connections. Any such breaks or crossings would be designed to use existing agricultural gateways or tracks between fields where practicable, and the width of any new breaks would be kept to a minimum. Similarly, new cable routes would make use of existing agricultural tracks where practicable to minimise disruption to habitats.

In keeping with the character of the existing landscape, additional landscaping would be provided to enhance visual screening and support biodiversity. Measures may include restoring hedgerows and introducing new woodland blocks or screening plantings along the edges of the Developable Areas. These enhancements aim to increase biodiversity across the Scheme and help deliver a minimum of 10% Biodiversity Net Gain (BNG). The Scheme will also consider mitigation for any potential temporary loss of habitats, following relevant guidance and industry best practice.

Landscape and ecological features will be managed in accordance with an Outline Landscape and Ecological Management Plan ('Outline LEMP').

Additionally, an Outline Soil Management Plan ('Outline SMP') will be submitted with the DCO Application. The Outline SMP will adhere to best practice principles to maintain the physical properties of the soil, aiming to restore the majority of the land to its pre-construction condition at the end of the Scheme's operational life.

Management Plans

The DCO Application will be supported by a series of outline management plan documents which will be secured in the DCO to avoid and / or minimise effects of the Scheme. These will include:

- Outline Construction Environmental Management Plan ('Outline CEMP');
- Outline Battery Safety Management Plan ('Outline BSMP').
- Outline Soil Management Plan ('Outline SMP');
- Outline Construction Traffic Management Plan ('Outline CTMP');
- Outline Public Rights of Way Management Plan ('Outline PRoWMP');
- Outline Landscape and Environmental Management Plan ('Outline LEMP'); and
- Outline Battery Safety Management Plan ('Outline BSMP').

In addition to the outline management plans listed above, an Archaeology Management Strategy (AMS') will be submitted with the DCO Application. Other management plans to those listed above may be prepared leading into application.

These management plans and strategies set out core principles of good site management to mitigate potential impacts, including dust and noise, and to implement traffic management controls.

Scheme Phases

Construction

Subject to development consent being granted, the earliest construction is assumed to commence is 2028. It is estimated that construction will take between 24 and 36 months for the whole Scheme. Details on the construction programme will be further refined alongside the ongoing Scheme design process and will be outlined in the ES.

The construction activities required may include (not necessarily in order):

- Preparation of the Site;
- Developable Areas construction;
- Installation of the Grid Connection Corridor (overhead lines) and Inter-Array Connections (overhead or underground cabling);
- Testing and compliance checking of Scheme infrastructure; and
- Re-landscaping after construction works and habitat creation around Developable Areas equipment.

Management plans will be employed at all phases which will detail how the Scheme's impacts will be managed. These management plans must be submitted to and approved by the consenting authority and compliant with relevant local policies and regulations.

Construction of the Scheme would be carried out in accordance with the Outline CEMP, which will include measures in relation to the risk management of construction activities, site-specific environmental control and monitoring measures, working hours and pollution prevention practices among other matters. Plans to restore the site and create habitats after construction will be developed as part of the Scheme design and included in the Outline CEMP.

Operation

It is expected that the Scheme would be operated for 40 years before being decommissioned. For the purposes of the PEIR, the earliest date construction is anticipated to be completed by is 2030. Activity during the operational phase would be limited and would principally relate to vegetation management, equipment maintenance, servicing of any components that fail, periodic fence inspection and monitoring to ensure the continued effective operation of the Scheme.

It is anticipated that a workforce of up to 15 people would support operation of the Scheme (predominantly based within the Developable Areas). Additional visitors may visit the Scheme for deliveries and to replace any components that fail.

Decommissioning

Once the Scheme has operated for 40 years, all components would be dismantled and removed from the Site. For the purposes of the PEIR, the earliest the decommissioning phase is anticipated to begin is 2070. It is expected that decommissioning of the Scheme may take up to approximately 24 months.

Due to the similarity of the construction and decommissioning activities for the Scheme, many effects that would arise from decommissioning are predicted to be similar to, or less significant than, those likely to arise during the construction phase of the Scheme.

An Outline DEMP will be prepared to outline the general principles to be followed before decommissioning starts.

When the decommissioning phase begins, above-ground physical infrastructure across the Site will be dismantled and removed. This would include all components described within the solar panel area, as well as the overhead lines and associated pylons or wooden poles within the Grid Connection Corridor and Inter-Array Areas.

The land within the Sites will be returned to the original landowners and returned to the original use as far as practicable as part of the decommissioning of the Scheme.

4. Alternatives Studied and Design Evolution

Introduction

PEIR Volume 1, Chapter 4: Alternatives Studied and Design Evolution describes the reasonable alternatives that have been considered (alternative sites, alternative layouts, alternative technologies) as well as the design evolution for the Scheme and how environmental considerations have fed into that.

A 'do nothing' scenario has not been considered reasonable, as it would not achieve the Scheme's objective of delivering substantial renewable energy generation. Such an approach would contradict the Government's aims for solar infrastructure to support national targets for net zero, energy affordability, and security.

At this stage, the design remains under development and will continue to be refined following further baseline surveys, preliminary technical assessments, and feedback from the statutory consultation process.

Selection of the Solar Panel Site

The selection of the Scheme's location has followed an iterative approach, taking into account the best information available to the Applicant at the time.

While there is no set methodology for identifying land suitable for solar panel electricity generation, guidance from national policy identified the following key factors as being instrumental in influencing the site selection process:

- Irradiance and site topography;
- Network connection;
- Proximity to dwellings;
- Accessibility; and
- Agricultural land classification and land type

Table 1 provides further detail on these factors.

Table 1: Site Selection

Factor	Review
Irradiance and site topography	East England was identified as a suitable region for the Scheme for two main reasons: 1) It benefits from suitably high levels of sunlight energy received per unit of area compared to other parts of the UK. Combined with the area's predominantly large areas of flat or undulating land, this means less land is required for the same energy output, making solar generation more efficient. 2) There is significant local demand for electricity. Generating power closer to where it will be used minimises national transmission imbalance and reduces energy lost during transmission, which occurs when electricity travels across the network and some is dissipated as heat due to electrical resistance. Solar projects in this region can provide essential additional capacity while limiting transmission losses and addressing broader regional shortfalls.
Network connection	Capacity was identified on the existing Burwell to Pelham 400kV Overhead Line. The Burwell to Pelham Overhead Line runs south from the existing Burwell Substation, west of the town, passing east of Swaffham Prior and Swaffham Bulbeck, crossing the A14, and continuing between Great Wilbraham and the Newmarket Bypass. It was also known that a new substation was going to be proposed south of Burwell, but the location of the substation at that time was unknown.

Factor	Review
Proximity to dwellings	With the exception of Cambridge and Newmarket, the area identified as appropriate for the PV infrastructure, is characterised by dispersed small settlements, such as West Wratting, Weston Colville, and Weston Green. While the Site lies relatively close to these communities, the Site has been carefully defined to limit potential impacts. This is achieved by making use of existing natural screening in the landscape and proposed landscape interventions. There are also relatively limited individual dwellings near the Site. Throughout the design process, impacts on nearby residential receptors have been considered and factored into the design developed. For example, strategic setbacks and buffers between above-ground infrastructure within the Developable Areas and sensitive receptors have been incorporated to reduce potential noise impacts during operation.
Accessibility	The A11 and A14, comprising England's network of motorways and major A-roads, serve as the main access route to the local highway network connecting the Developable Areas, Inter-Array Areas and Grid Connection Corridor. This connectivity is an important factor when considering potential effects during construction, particularly regarding the capacity of these roads to accommodate Heavy Goods Vehicles (HGVs) weighting over 3.5 tonnes and Abnormal Indivisible Loads (AILs), that cannot be split into smaller loads without a large risk of damage or excessive cost. While specific access points are still being considered, a key priority remains to avoid routeing construction and decommissioning traffic through local settlements and reducing potential safety risks through thoughtful design.

Factor	Review
Agricultural land and land type	A desktop review of previously developed, brownfield, contaminated and industrial land was undertaken to identify sites with the potential to accommodate a solar farm of the proposed scale. It was determined that there are no sites of a suitable size, location and characteristics to accommodate the Scheme without use of agricultural land. No alternative land has been identified that would meet the Scheme's requirements while having a lesser effect on agricultural land with publicly available mapping data for areas of land to the north identifying similar levels of BMV land to that found across the Developable Areas.

Selection of the Grid Connection Corridor

The approach to identifying an appropriate grid connection route was based on the assumption that the grid connection would be via an overhead line supported by lattice-style towers. This approach aligns with the government's position that "overhead lines should be the strong starting presumption for electricity networks developments", as set out in National Policy[2]. It is acknowledged that this presumption is reversed where an overhead line would cross a nationally designated landscape, which does not apply to this Scheme. The Scheme would neither directly nor indirectly impact a nationally designated landscape. Therefore, an overhead line is deemed wholly appropriate for this connection.

The Grid Connection routing followed the principles of the Holford Rules, as outlined in National Policy[1]. These rules offer design

[2] Department of Energy Security and Net Zero (2024) National Policy Statement for Electricity Infrastructure (EN-5), London: HMSO.

guidance to avoid or minimise adverse impacts by carefully planning the route of overhead lines. In summary, this means:

- Avoiding major areas with the highest amenity value wherever practicable;
- Diverting around smaller areas of high amenity value or scientific interest if practical, without needing excessive angle towers;
- Selecting the most direct route with minimal changes in direction, reducing the number of angle towers required;
- Positioning lines against backgrounds of trees and hills where practicable;
- Favouring moderately open valleys with a reasonable level of tree cover;
- Keeping routes independent from smaller lines, converging routes and other poles, masts, wires, and cables to avoid a concentration of lines or 'wirescape', unless relevant stakeholders preferred otherwise; and
- Approaching urban areas through industrial zones where available, and when residential and recreational land lies between the approach line and substations, carefully weighing the costs of undergrounding.

At the EIA Scoping stage, two potential Grid Connection Corridor options were identified as shown in Plate 5.

Initially, the preference was to identify a grid connection route that followed the Burwell to Pelham Overhead Line (OHL) which was located in the West Corridor as the potential impacts of the OHL would be reduced by co-locating it alongside an existing OHL. However, several constraints were identified and the East corridor was considered preferable because it had less impacts on important ecological sites, historic features and have better setback from residences.

Consequently, a preferred Grid Connection Corridor has been selected, which most closely aligns with the East Corridor. This is shown in Plate 6 along with the indicative alignment for the OHL. This will be refined further having regard to feedback from the statutory consultation, ongoing engagement with stakeholders, and the findings from continuing environmental and technical surveys.

Plate 5: Grid Connection Corridor Options

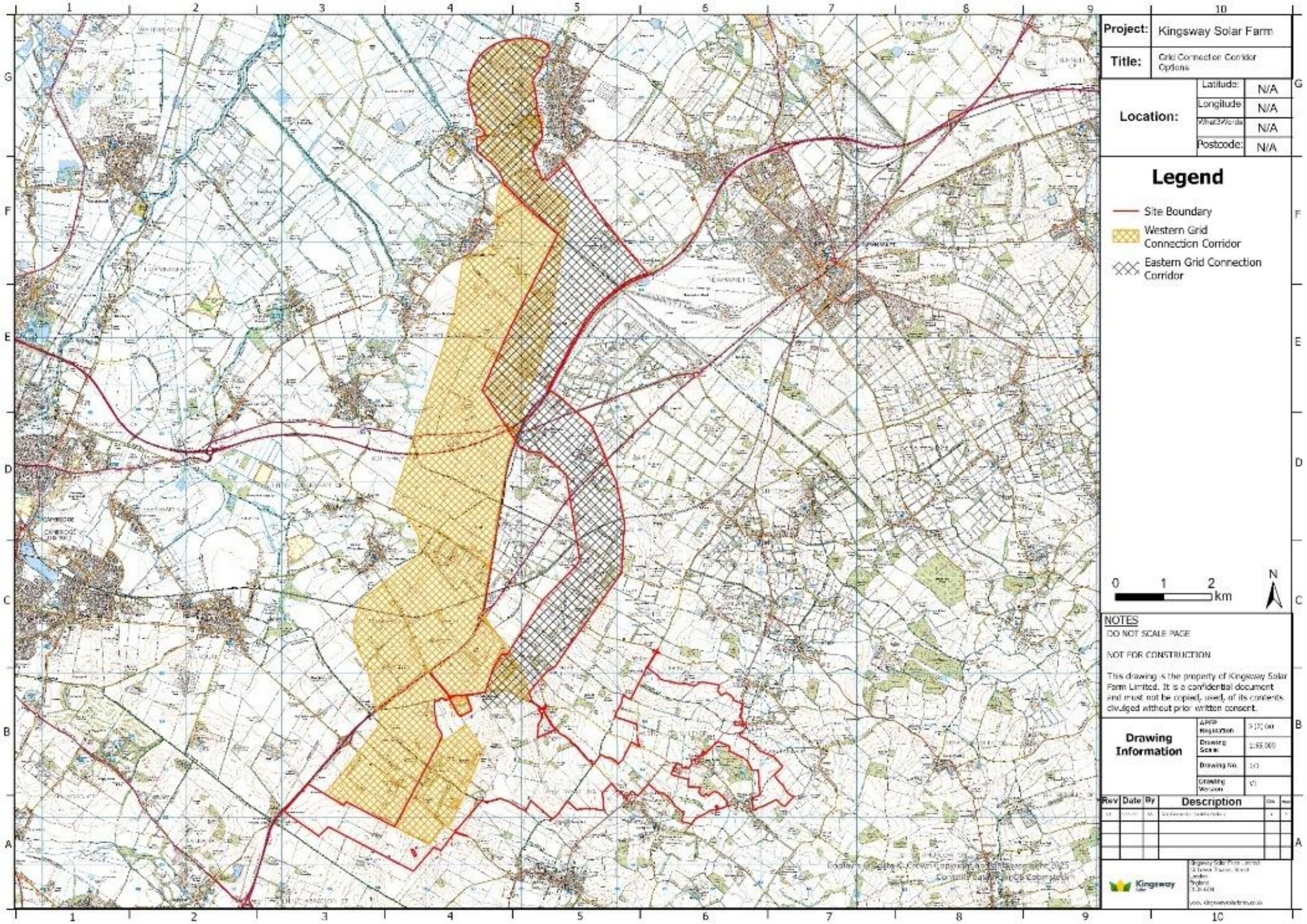
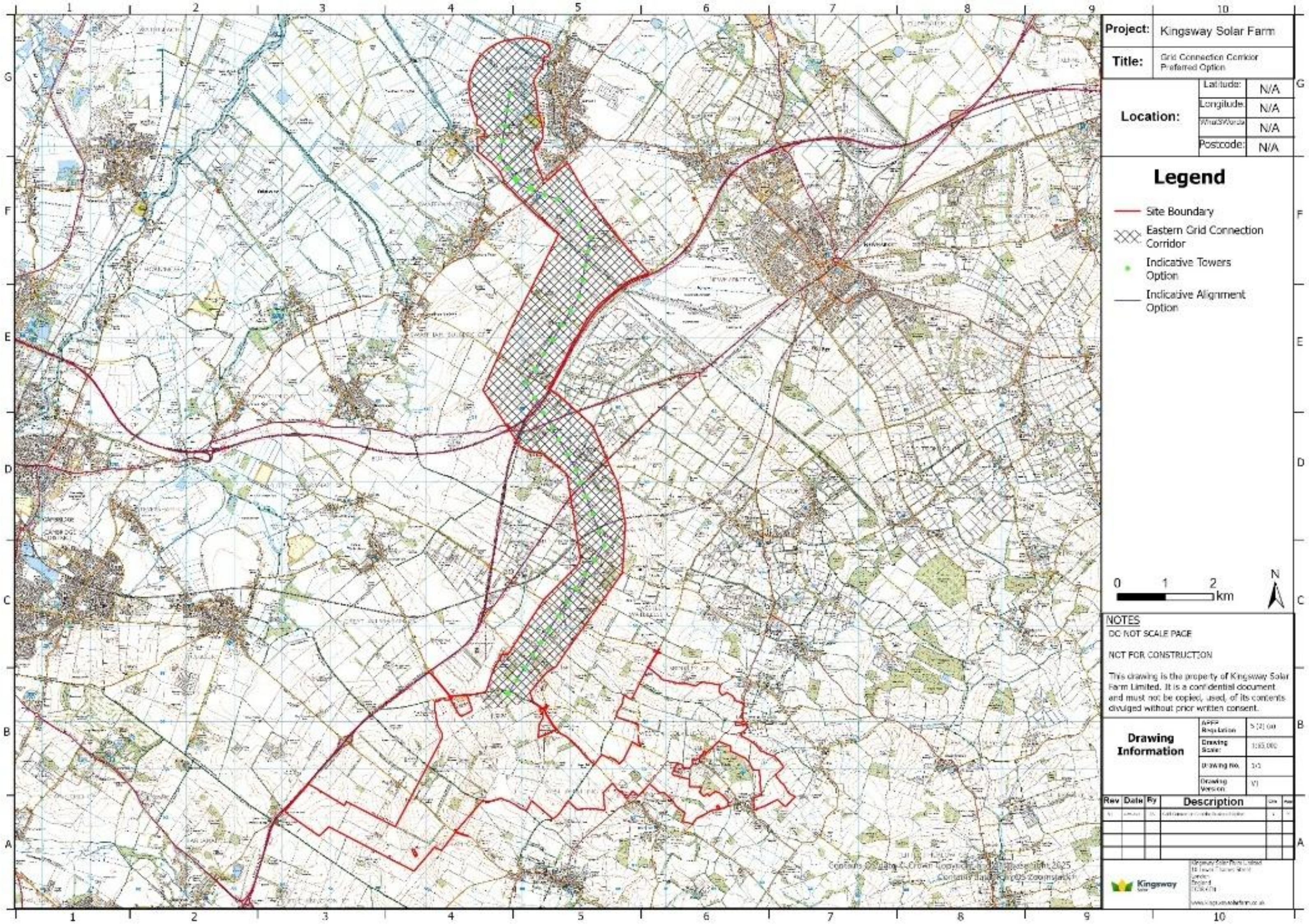


Plate 6: Grid Connection Corridor Preferred Option



Alternative Technologies

Solar PV has been selected because Downing Renewable Developments has significant experience in solar PV and energy storage development, and because other technologies were not considered suitable for this location.

The Government sees Solar Photovoltaic Generation as a key part of the government's strategy for low-cost decarbonisation of the energy sector. The British Energy Security Strategy states that government expects a five-fold increase in combined ground and rooftop solar deployment by 2035 (up to 70GW). It sets out that government is supportive of solar that is "co-located with other functions (for example, agriculture, onshore wind generation, or storage) to maximise the efficiency of land use".

Developable Area B contains an existing area of wind turbines; these turbines will continue to operate alongside the Scheme. Expanding wind generation was discounted because it would require more land for the same capacity as solar, and due to the Site's topography – especially Developable Area C – could cause significant effects such as shadow flicker and turbine noise near residential properties.

Nuclear power was not considered as an alternative given the technical requirements for nuclear facilities, such as access to cooling water and suitable distance from large populations. Additionally, solar PV technology would be able to start generating electricity more quickly, with a grid connection expected between 2030 and 2032, thereby more quickly supporting the UK Government's aim to Schieve Net Zero by 2050.

Hydrogen technology was also excluded, as constructing and operating such a facility would be less viable here compared to solar. Hydrogen generation would require a major water source, a nearby off-taker, or extensive infrastructure to transport hydrogen to end users, including roads or pipelines capable of supporting frequent HGV movements. These are not available within the Site.

In summary, solar technology offers the most suitable renewable energy solution for the Site, given its favourable topography, relatively high solar irradiance, and other factors outlined earlier in this chapter.

Design Evolution

The design of the Scheme has been refined iteratively, taking into consideration environmental and technical factors, and feedback from the local community and relevant authorities. The design will continue to evolve in response to ongoing survey work and technical assessments and feedback to this statutory consultation process.

Table 2 summarises the considerations that have influenced the design of the Scheme to date, as detailed within this chapter.

Table 2: Design Evolution

Design Feature	Consultation and Surveys which have influenced the design	Design Evolution
Solar Panel Layout	The area identified for solar panels on the indicative masterplan has been informed by: • Geophysical survey results; • Built features valued for their historical or architectural importance; • Flood risk zones (river and rainwater sources); and • Existing hedgerows.	The design has responded to these environmental considerations by ensuring solar panels and other equipment are placed at sufficient distances from sensitive habitats or important historical features to ensure impacts on these are avoided.
Grid Connection Corridor	The preferred Grid Connection Corridor has been informed by the following factors: • Infrasturcture constraints, including high pressure gas pipelines; • Environmental constraints, including historic, ecological, and surface water flood risk.	Selection of a preferred corridor most closely aligning to the eastern corridor.
Substation location	Flood risk data	The location of the substations within the Developable Areas has been informed by specialist advice from the appointed flood risk consultant to ensure that it was located outside an area of river-based flood risk.
Developable Area C	Consultation feedback	In response to the non-statutory consultation some land parcels within Developable Area C have been removed and are no longer within the Site boundary.
Future Stages to take place prior to DCO Application acceptance		
Final DCO Application design	Ongoing stakeholder engagement throughout statutory consultation process and up to the point of submitting the DCO Application	Design concept and parameters will be fixed for the Scheme. Design will evolve in response to information gathered and the completion of environmental surveys. Design will be influenced be feedback received from the statutory consultation period.

Summary

The selection of the Scheme's location has been guided by a systematic, step-by-step approach, as described above.

When evaluating and selecting sites for large-scale developments, a variety of technical, environmental and economic factors are taken into account. In this instance, the capacity that was identified on the existing Burwell to Pelham 400kV Overhead Line played a central role in the initial site selection.

The Site is not as suitable for other types of renewable energy generation on the same scale as the Scheme. From the earliest stages, alternative layouts for the solar panel areas, substation locations, and connection corridors routes have all been carefully considered. These elements will continue to be refined leading up to submission of the DCO Application.

Ultimately, the Site was chosen for its availability and suitability for large-scale solar development; factors such as high solar irradiance, favourable topography, and minimal environmental constraints supported this decision. There is a clear and urgent need for renewable energy, and the Scheme represents a significant opportunity to help the UK meet its Net Zero commitments.

5. Overview of the EIA Process

Purpose of the EIA Process

EIA is a process undertaken to identify and evaluate the likely significant effects of a proposed development on the environment and to identify measures to avoid, reduce, mitigate or offset any significant adverse effects. As good practice, the EIA should be informed by consultation with statutory consultees, other interested bodies and members of the public.

The purpose of identifying significant effects is to provide decision makers with information to make an informed judgement. The PEIR provides the preliminary environmental information obtained and assessed as part of the EIA.

EIA Scoping

The aim of the scoping process is to identify expected key environmental issues at an early stage, to determine which elements of the Scheme are likely to result in likely significant effects on the environment and to establish the extent of survey and assessment requirements for the EIA.

An EIA Scoping Report, identifying environmental issues to be assessed, was submitted to the Planning Inspectorate in April 2023. The Planning Inspectorate is the independent body that manages the application, examination and decision-making process for NSIPs. The Scoping Report was provided to relevant consultation bodies for comment by the Planning Inspectorate. These consultation bodies included, CCC, SCDC, and ECDC as well as other consultees.

The Planning Inspectorate's Scoping Opinion was received on the 23rd January 2025. The Scoping Opinion confirmed which topics were scoped in and out of the EIA. Key issues raised in the Scoping Opinion are set out in the technical chapters in the PEIR and are being considered throughout the EIA process. As agreed through this EIA Scoping process, the PEIR has considered the following environmental topics that have been 'scoped in' to the EIA:

- Biodiversity;
- Landscape and Visual Amenity;
- Cultural Heritage (Archaeology and Built Heritage);
- Land and Groundwater Quality;
- Soils and Agriculture;
- Traffic and Transport;
- Noise and Vibration;
- Air Quality;
- Socio—economics and Population; and
- Climate Change.

Assessment Methodology

PEIR Volume 1, Chapter 5: EIA Methodology describes the approach that has been taken to assessing the impacts associated with the Scheme, including the significance criteria against which impacts have been assessed. Effects identified as moderate or above (unless otherwise specified) are noted as significant.

For each environmental topic, a review of the environmental conditions within the Site was completed. Referred to as the 'baseline', this provides a reference point from which the predicted impacts of the Scheme could be compared. The baseline is then reviewed to identify 'receptors' per topic-specific assessment - the physical or biological resources (like soil quality, or local habitats) or user groups (like local residences, or users of Public Rights of Way) considered likely to be impacted by the Scheme. The ability to withstand or recover from change for each identified receptor is then determined.

An assessment is undertaken to predict the potential likely impacts on the receptors during all phases of the Scheme. The likely significant effects resulting from the Scheme are then assessed per receptor by comparing the relative impact they would experience against the sensitivity to change they were each assigned.

The PEIR presents the preliminary conclusions of these assessments based on information available to date. The assessment of the likely significant effects resulting from the Scheme will be updated within the ES as further engagement is held and the design of the Scheme continues to be developed.

Design and Mitigation

The EIA process was and continues to be an integral part of design development of the Scheme. Specialists feedback helps to guide the design process to avoid, minimise or compensate adverse environmental effects through considerate scheme design and appropriate mitigation measures, and to enhance environmental opportunities.

Assessment of Cumulative Effects

A preliminary assessment of cumulative effects has been considered within the PEIR. An individual environmental impact may not be significant on its own, but it may become significant when it is combined with other environmental impacts from the same scheme or other developments.

Two types of cumulative effects are being assessed and reported on as part of the EIA:

- Effects where multiple different types of effect from the Scheme can affect an individual receptor – for example a single habitat is impacted by both noise and air quality effects.
- Combined effects of the Scheme and other development and/ or approved schemes.

A list of the other development and/or approved schemes has been collated. This will allow the robust assessment of cumulative effects during the ES stage. **PEIR Volume 1, Chapter 17: Cumulative Effects** provides details about the assessment of cumulative effects.

Assumptions and Limitations

Potential impacts and their effects cannot be predicted with absolute certainty. Predictions are limited by the quality and certainty of the information available and the accuracy of the predictive techniques employed. The preliminary assessment has indicated the likely magnitude of impacts and significance of effects to a reasonable degree. Where uncertainty exists, a precautionary approach assuming a reasonable worst-case impact has been adopted for the assessment. The assumptions and limitations of each topic-specific assessment is outlined within **PEIR Volume 2, Chapters 6 to 16 where** relevant.

6. Biodiversity

Baseline Conditions

The current baseline has been informed by a combination of desk studies, habitat surveys, and dedicated protected species surveys, some of which are still ongoing. The baseline conditions reported within the PEIR Chapter reflect the current understanding of the baseline conditions, and will be updated within the ES to account for the full suite of field survey work.

The Site primarily consists of agricultural land with localised areas of woodland, grassland, and hedgerows. There are no designated sites within the Developable Areas; however, the Grid Connection Corridor intersects the Devils Dyke Sites of Special Scientific Interest (SSSI) and the Inter-Array Connection Corridor 1 intersects the Fleam Dyke SSSI. These SSSIs are legally protected for being good examples of the country's wildlife, geological or landforms.

The habitats within the Site were found to support, or have the potential to support, a range of species, including badgers, bats, great crested newts, and a variety of breeding and wintering bird species.

Four Local Wildlife Sites, protected for their wildlife and habitat value and designated by local authorities are also present on-site. Wicken Fen, designated as a Ramsar site, Special Area of Conservation, National Nature Reserve and SSSI, is located approximately 2km north west.

Embedded Mitigation Measures

An 'embedded' mitigation measure is one that has been incorporated into the design of a particular development to prevent, reduce or offset any significant effect. The design of the Scheme focuses on retaining habitats, strategic distance buffering, and sensitive design to avoid or minimise ecological impacts. High-value habitats such as woodland, hedgerows, ponds, and existing farmland field margins will be retained where practicable and enhanced, while new infrastructure is preferentially sited in lower-value areas.

At this stage, embedded mitigation measures include:

- The Outline CEMP will include specific measures to minimise effects during construction works and the Outline DEMP will apply during decommissioning. The Outline CEMP would include all good practice construction measures, pollution prevention controls and monitoring to be implemented over the course of the construction phase, in line with current industry and mandatory statutory guidance.
- A suitably qualified and experienced ecologist would be appointed prior to the commencement of construction and decommissioning activities and through whom appropriate ecological advice would be provided throughout. The ecologist will oversee pre-construction protected species surveys, habitat creation and protection measures, pollution prevention at temporary watercourse crossings, and invasive species control.
- The Outline DEMP will adopt measures that are broadly similar to those included in the Outline CEMP during the decommissioning works. These will be based on the most up to date standards and guidance at the time of decommissioning.
- The operational phase will include the commitment to habitat maintenance and enhancement, including any monitoring required through the LEMP and OEMP.

Summary of Potential Significant Effects

Through the adoption of a precautionary approach to the assessment, it has been identified that there is the potential for significant adverse residual effects as a result of the Scheme to occur on the following receptors:

- Great crested newt during construction;
- Bats during operation;
- Ground nesting birds (e.g. skylark) during operation; and
- Birds at risk of collision with the overhead line during operation.

The identification of birds at risk of collision with the overhead line and the displacement of ground nesting birds were also assessed to be significant cumulative effects of the scheme combined with surrounding projects during the operational phase.

However, it is also noted that the Scheme will deliver beneficial effects as a result of the change in land management regime (including a reduction in the use of pesticides and herbicides) and the provision of new planting, including grassland, hedgerows, woodlands and scattered trees, which will increase habitat diversity and improve opportunities for faunal species. This will result in a residual beneficial effect, significant at the Local level for other ecological receptors. Further options for mitigation will be explored via design refinement into the ES stage.

7. Landscape and Visual Amenity

Baseline Conditions

No part of the Site or its surrounding context within the study area falls within a statutorily designated landscape. The closest designated landscape is Dedham Vale National Landscape situated *c.* 33km to the south east of the Site. There are also no local landscape designations within the study area (defined at this stage as 3km from the Site boundary).

The Site sits within a landscape which is characterised by a strong linear, geometric pattern of shelterbelts and hedgerows bounding a network of rectilinear, mostly existing farmland.

The relatively flat, gently undulating landscape means that there is the potential for long distance and open views around the Site and study area. Hedgerows, scattered small woodlands and parkland trees can provide substantial screening and often combine with gently undulating topography. In some locations, there are views of wind turbines and existing pylon lattice towers, especially to the west of the Site.

Notable features in the landscape include scattered minor manors, halls and parklands and the historic Newmarket Racecourse, along with the linked site of Round Course and training ground near Egerton House.

The Site is located in the National Character Area[3] ('NCA') 87 East Anglian Chalk. There are no statutory landscape designations within the Site such as National Parks or National Landscapes.

There are numerous PRoWs within the 3km study area. There are however limited PRoWs to the west of the Site associated with Developable Areas A and B. Where they are present, they generally follow field boundaries or the route of a farm track. The majority of PRoW are located around Weston Colville, Willingham Green and Balsham.

Landscape Character Areas

The assessment has considered the Site's National Character Areas (NCA) within which consider how the combination of landscape, biodiversity, geodiversity and economic activity shape the area's profile. The Landscape Character Areas (LCA) of the Site have also been considered which comprises the physical elements (like geology, topography, and vegetation) as well as cultural factors (like land use and human history). These include:

- NCA 87 East Anglian Chalk
- NCA 86 South Suffolk and North Essex Clayland
- NCA 46 The Fens
- LCA 7A Eastern Chalk Hills
- LCA 4D West Wratting Wooded Claylands
- LCA 6B Wilbraham Fen Edge Chalklands
- LCA 6C Fulbourn Fen Edge Chalklands
- LCA 7A Eastern Chalk Hills
- LCA 7B Gog Magog Chalk Hills
- LCA 7C Linton Chalk Hills.
- LCA 8A Pampisfold Lowland Chalklands.
- LCA 9D Granta River Valley.
- LCA G1 Newmarket and Fordham Chalklands
- LCA 1A Stour Valley
- LCA B1 Haverhill Farmland
- LCA B2 Sowley Green Plateau Farmlands

Embedded Mitigation Measures

Preliminary mitigation measures include the following:

- Solar PV modules have been excluded from areas close to homes to mitigate potential effects on residential visual amenity.
- All existing vegetation within and adjacent to the Site, and not directly affected by the Scheme, will be retained and protected, where practicable.
- Offsets will be maintained, where practicable, between above ground infrastructure and notable existing natural features,

[3] A National Character Area is a natural subdivision of England based on a combination of landscape, biodiversity, geodiversity and economic activity.

including 15m from individual trees and woodland, 10m from hedgerows and 10m from watercourses.

- A native palette of trees, hedgerows and shrubs would be used, including a good percentage of faster growing species to secure initial screening as well as a good percentage of longer-term growth material to ensure continued coverage of screening planting over the 40-year lifespan of the Scheme.
- There is no permanent lighting proposed as part of the Scheme except for the localised emergency security lighting in proximity to the substation, energy storage and control buildings. Such lighting would be triggered by movement only or manually turned on, and so would not be active for all hours of darkness.
- Areas within the Site which have no proposed infrastructure could be used for landscape and visual mitigation planting, including native scrub, small woodland blocks and scattered trees. These larger areas in particular would be progressed in conjunction with proposals for Biodiversity Net Gain (BNG) and embedded into the design prior to completion of the EIA process.

Summary of Potential Significant Effects Landscape Effects

It is anticipated that the Scheme changing the existing landscape would result in likely significant adverse effects on the following landscape receptors during the construction, operational, and decommissioning phases of the Scheme:

- LCA 4D West Wratting Wooded Claylands, LCA 4E West Wickham Wooded Claylands, LCA 7A Eastern Chalk Hills, LCT Lowland Village Chalklands, LCT Chalk Hills and Scarps and land use within the Site; and
- There is potential for likely significant cumulative effects on landscape receptors when considering the Sunnica Ltd solar farm cumulative scheme (reference: DCO-009 EN010106).

Summary of Potential Significant Effects Visual Effects

It is anticipated that the Scheme would result in likely significant adverse effects on the following visual receptors during the construction, operational, and decommissioning phases of the Scheme.

- Users of the PRoW network north and west of Burwell, Users of the PRoW network north and west of Developable Areas A and B, Users of the PRoW network south of Balsham, Users of the PRoW network north of Balsham, Users of the Devils Ditch, Users of the PRoW network within Area C,
- Residents located to the north and east of Burwell, Residents located to the east of Developable Area C, Residents located to the south and west of Developable Area C;
- Users of the road network to the north and west of Burwell; and
- There is potential for likely significant cumulative effects on residents, PRoW and road users when considering the following cumulative schemes: ID reference: TCPA-ECDC-004, 25/00393/FUM; TCPA-ECDC-036, 25/00303/FUM; TCPA-GCSP-003, 25/01014/FUL; and TCPA-ECDC-041, 25/00770/ESF.

It should be noted that, at this stage, the landscape planting mitigation measures have not yet been defined in sufficient detail and have therefore not been accounted for in this preliminary assessment. As the Scheme design evolves and the landscape planting is defined, the effects assessment will be updated and included within the ES and will likely reduce the number of significant effects identified above.

PEIR Volume 3, Figure 7.12 presents the areas where the Scheme is theoretically visible within a 3km study area.

8. Cultural Heritage - Archaeology

Baseline Conditions

Baseline archaeological conditions have been determined for the Developable Areas through a combination of desk-based assessment of information available through the Cambridgeshire Historic Environment Record (HER) and National Heritage List for England and geophysical surveys, the latter providing information on buried anomalies of likely archaeological origin. Further investigations through targeted trial trenching in the Developable Areas will be undertaken to learn more about the date, character, depth, extent, state of preservation and archaeological importance of the buried remains, to inform the assessment to be presented in the ES.

At this stage, the baseline characterisation of the Inter-Array Areas and Grid Connection Corridor is still being progressed and therefore an assessment of the likely effects within these areas cannot be undertaken at this stage. Effects within these areas would however be limited to the areas immediately surrounding the footprint of the OHL pylons.

There are a total of 56 known archaeological assets recorded on the HER within the Developable Areas A, B and C. Six are recorded in Area A, 17 in Area B, and 33 in Area C.

There is one scheduled monument within Area A, lying partially within its northeastern edge (a Bronze Age bowl barrow). There are no scheduled monuments within Developable Areas B or C.

The inter-array connection area between Developable Area A and B contains a single scheduled monument, Fleam Dyke, of Saxon date.

The Grid Connection Corridor contains three scheduled monuments: a Neolithic Long Barrow southeast of Partridge Hall Farm, Devil's Dyke, and one of the five Bronze Age bowl barrows north of Hare Park Stud (NHLE 1016818).

Embedded Mitigation Measures

At this stage, embedded mitigation measures include:

- Avoidance of areas with known archaeological remains;
- The use of concrete feet for the panels which would preserve archaeological remains in situ, if required;
- Adherence to an Archaeological Management Strategy (AMS);
- Adherence to measures set out within the CEMP.

Summary of Potential Significant Effects

Construction Phase

Impacts to buried archaeological remains could arise from any ground disturbance activities associated with construction of the Scheme that could expose, damage or destroy archaeological remains. This would mainly relate to activities such as the installation of solar panels, BESS, substations, the haul roads and access routes, lay-down areas and compounds, and OHL pylons.

Archaeological remains are an irreplaceable resource, and therefore any change to them is both negative and permanent. This also includes the process of any intrusive archaeological fieldwork or excavation, although impacts will be reduced through the implementation of appropriate mitigation.

Remains of Moderate to High archaeological sensitivity have been identified within the Developable Areas, including a number of possible Bronze Age round barrows. Such remains indicate the possible presence of a Bronze Age barrow cemetery and possibly other funerary activity within the general area. Other remains of Moderate to High sensitivity include dense areas of probable later prehistoric and/or Romano British enclosures, settlement and land divisions. The construction of the Scheme has the potential to result in significant adverse effects on these assets.

Dispersed areas of enclosures and land divisions of later prehistoric or Romano-British date, an area of pitting of uncertain date, and areas of relatively high archaeological potential have also been identified within the Developable Areas. The construction of the Scheme has the potential to result in significant adverse effects on these assets.

Further evaluation will be undertaken to confirm the sensitivity of archaeological deposits within the Site and reconfirm the significance of the effect.

It is anticipated that through the use of additional mitigation measures, e.g. through further investigation and preservation by record, significant adverse residual effects could be avoided.

Operational and Decommissioning Phases

For archaeological remains within the Site, once the Scheme is in the operational phase, there will be no further physical effects on buried archaeological remains within the Site.

Appropriate mitigation will have been implemented to record any buried remains. Other areas within the Site, where development does not occur, avoiding buried remains, will leave archaeology undisturbed.

The decommissioning works would avoid any impact beyond the already disturbed footprint of the Scheme and would take account of archaeological deposits that have been preserved in situ. As a result, decommissioning activities are unlikely to have a direct, physical impact upon archaeological remains.

Cumulative Assessment

It is considered unlikely that there would be any significant cumulative effects as a result of the Scheme on buried archaeology.

9. Cultural Heritage - Built Heritage

Baseline Conditions

The baseline conditions for built heritage (e.g. listed buildings) have been determined for a study area in the 2km surrounding and including the Site through a combination of desk-based assessment and site walkovers. The desk-based assessment has been informed by a review of: The National Heritage List for England for designated heritage assets; Local authority online resources for conservation areas and locally important heritage assets (non-designated heritage assets); Historic Environment Record for local built heritage assets; and a high-level review of online sources including historic mapping and local history websites.

There are six designated heritage assets within the Site (one listed building, the grade II listed Milestone to the south east of Lower Hare Park Farm, on the A1304 within the Grid Connection Corridor, and five scheduled monuments);

- Devil's Ditch, Reach to Wooditton;
- Fleam Dyke;
- Five bowl barrows 270m north of Hare Park Stud;
- Bowl barrow 1080m north east of Worsted Lodge Farm, part of a dispersed round barrow cemetery in Charterhouse Plantation; and
- Long barrow 410m south east of Partridge Hall Farm

Within the study area, there are a further eight scheduled monuments identified as having the potential to be affected by the Scheme.

There are 129 listed buildings within the study area with the potential to be affected by the Scheme. The majority of these are within settlements.

There are six conservation areas within the study area with the potential to be affected by the Scheme;

- Burwell High Town;
- Burwell North Street;
- Reach;
- Brinkley;
- Balsham West End; and
- West Wratting.

There are no Registered Battlefields in the Site. There are six Registered Parks and Gardens within study area which have been identified as have the potential to be affected by the Scheme.

Embedded Mitigation Measures

At this stage, embedded mitigation measures include:

- The Scheme has been designed to avoid physical impacts on any built heritage assets. Offsets of at least 10m for the construction of above ground infrastructure have been used for designated heritage assets to prevent any accidental damage during construction.
- Contractor compounds, work sites and material storage areas will be located, designed and managed to avoid or reduce as far as possible any impacts to the settings of built heritage assets. Details will be set out within the Outline CEMP, to be submitted with the DCO Application.
- During construction, lighting levels will be kept to a minimum, where practicable, and as necessary for safety and security. Details will be set out within the Outline CEMP.
- Where practicable, the construction will be managed to avoid loss of any landscape features which could provide screening or better integrate the Scheme into the setting of relevant heritage receptors. Details will be set out within the Outline LEMP.
- Where possible, access and haul routes will avoid conservation areas and other historic settlements.
- Where possible, above ground infrastructure, which may include pylons or wood poles, within the Grid Connection Corridor and Inter-Array Corridor, will be located to avoid key views and the setting of designated heritage assets where possible.

Summary of Potential Significant Effects

Construction Phase

Works required during the construction phase would lead to disruption and changes in the setting or surroundings in which a heritage asset is experienced, including the appearance of construction compounds, worksites and materials storage, traffic movements and plant movement. However, these activities would be temporary and an Outline CEMP would be implemented ahead of construction works commencing to help mitigate any adverse effects.

Operational Phase

As with the construction phase, any operational effects would be a result of changes in the setting of heritage assets. These could occur from the presence and appearance of the operational Scheme, maintenance of the Scheme and noise generated during the operational activities.

For the majority of heritage assets, given the distance from the Scheme and taking into account intervening landscape, vegetation and built form, no effects would be significant as a result of the operational phase.

For two heritage assets within the study area (the Grade II listed Weston Colville Hall and the Grade II* St Mary's Church, Church End) there is the potential for significant adverse effects due to the proximity of the Scheme and the loss associated historic agricultural landscape from the construction of above ground components of the Scheme.

Decommissioning Phase

Potential decommissioning effects are considered to be similar to those identified for the construction phase, i.e. not significant.

Cumulative Assessment

There is currently not enough information available to assess if any cumulative impacts for built heritage would occur. The shortlist of cumulative schemes will be fully assessed for the ES chapter.

Land and Groundwater Quality

Baseline Conditions

A Preliminary Risk Assessment (PRA) was carried out in June 2025 to evaluate potential sources of contamination and assess contamination risks across Developable Areas A, B, and C, as well as the Inter-Array Connection Corridors. This assessment also helped determine whether further investigations would be necessary. While the Grid Connection Corridor was not directly included in the PRA, additional information and data related to this area were considered to inform the baseline understanding of the Scheme.

The Site is largely undeveloped with limited infrastructure. Historically, the Site was used for agriculture. The Site contains old chalk pits. Topsoil is shallow and Made Ground which is ground that has been artificially raised by the placement of imported materials, is limited to built areas. No active or historical landfills are recorded within the Site, but there are nearby historical landfills including one liquid sludge site adjacent to Developable Area C and Wilbraham Chalk Quarry, an active inert waste landfill 160m north east of the Site at its closest point.

The underlying Chalk Formation bedrock is a Principal Aquifer, with localised superficial deposits (e.g. glacial till, sand and gravel, river terrace, and alluvial fan deposits) classified as Secondary Aquifers. The Site lies within multiple Source Protection Zones (SPZs)[4], from total catchment (SPZ3) to inner protection zones (SPZ1).

[4] SPZs are areas defined around public drinking water sources, e.g. wells and boreholes, to protect them from pollution.

Surface water features associated with the Site include the River Stour, ponds, and one active surface water abstraction point. Some limited parts of the Site fall within the Environment Agency Flood Zones 2 and 3, indicating moderate to high flood risk in these parts, particularly near the watercourses.

Potential contamination sources identified in the PRA include historical pesticide and herbicide use, infilled ponds and pits, and stored fuel oil and chemicals.

Embedded Mitigation Measures

At this stage, embedded mitigation measures include:

- The Outline CEMP will set out measures to avoid, minimise or mitigate effects on the environment during construction. This will include best practice procedures, including requirements for pollution prevention and emergency procedures to manage accidental spillages and leaks. The key components to be included in the Outline CEMP include:
- Construction workers will be made aware of the possibility of encountering localised contamination through toolbox talks. The implementation of good standards of personal hygiene, provision of welfare facilities on-site, and use of appropriate levels of personal protective equipment (PPE) will be implemented;
- Pollution prevention measures to protect groundwater and surface watercourse (River Stour) in accordance with Department for Environment Food and Rural Affairs (DEFRA) and Environment Agency's guidance;
- Waste and resources management. This will cover removing, storing, and replacing topsoil in line with DEFRA guidelines;
- The implementation of drainage ditches and temporary drainage storage systems with gradual water release to reduce runoff;
- A Discovery Strategy which includes a watching brief for identifying and managing unforeseen contamination during intrusive works;
- Dust suppression controls, like the timely removal of soil from Site (where applicable) to prevent windblown dust and surface water run-off;
- Avoidance of over stockpiling to reduce compaction of soil and loss of integrity; and
- Specific measures will be put in place for fuel and oil containment (>110 capacity) and safe chemical storage in line with Control of Substance Hazardous to Health (COSHH) regulations.
- Piling risk assessments will be prepared in accordance with Environment Agency guidance (CL:AIRE, 2025) to assess and manage potential risks to controlled waters.
- All waste will be classified and pre-treated (e.g. segregation) prior to removal from the Site.
- The integration of long-term Sustainable Drainage System (SuDS) features (e.g. swales, infiltration trenches, attenuation ponds) to manage surface water without increasing runoff or risk of infiltration to underlying vulnerable aquifers.
- The design of appropriate flood measures as applicable.
- Where possible, the design locates permanent infrastructure away from sensitive SPZs and groundwater bores.
- Installation of hardstanding / concrete under substations or equipment housing to prevent any potentially spilled liquids

soaking into the ground.

- Mitigation measures to manage potential risks associated with battery-related fires. Battery storage units will be housed in fully contained systems, ensuring that release of chemicals or contaminated fire water is captured. Fire suppression systems will use environmentally safe foams. In the event of a fire, hazardous materials from damaged battery systems will be managed through containment and cleanup protocols. An emergency response plan will be implemented, detailing fire control procedures and environmental protection measures. Post-incident environmental monitoring will be conducted to ensure soil and water quality is not compromised.

Summary of Potential Significant Effects

Construction Phase

The following identified risks associated with the construction phase were assessed:

- localised contamination of soils from potential spills or leakages;
- spills or leaks impacting groundwater or surface watercourses;
- mobilisation of existing contaminants in the soil or shallow groundwater (if present) to deeper aquifers from excavations or piling operations; and
- damage to established field drainage systems from earthworks which may have an impact on localised drainage of the land and the groundwater quality of the underlying shallow and deep aquifers.

With mitigation in place (e.g. Outline CEMP), the effects assessment concluded that the effects described above will be avoided or minimised such that they would be not significant.

Operational Phase

The following identified risks associated with the operation of the Scheme were assessed:

- spillages of oil or chemicals during maintenance works (such as use of herbicide for vegetation management and servicing of electrical equipment) leading to the pollution of the underlying shallow aquifers;
- impacts on groundwater infiltration rates from concrete hardstanding and piled foundations; and
- impacts on the recharge process of the underlying aquifers due to changes to the drainage systems on site from the new infrastructure.

However, taking into account the embedded mitigation measures, the effects assessment concluded that the effects described above would not be significant.

Decommissioning Phase

Potential decommissioning effects are considered to be similar to those identified for the construction phase, i.e. not significant.

Cumulative Assessment

No significant cumulative effects have been identified.

10. Soils and Agriculture

Baseline Conditions

The majority of the land in the Scheme is agricultural. Agricultural Land Classification (ALC) is the standard method for classifying agricultural land in England and Wales based on the type and level of agricultural production it can potentially support. The best quality agricultural land (Grades 1, 2 and 3a) is known as Best and Most Versatile (BMV) and is given a greater level of protection in planning policy than lower quality, non-BMV land (Grades 3b, 4 and 5).

The ALC survey identified that the land within the Developable Areas consists of Grades 1 (1.8 hectares), 2 (180.6 hectares), 3a (736.7 hectares), 3b (544.2 hectares) and 4 (12.9 hectares).

The soils at Site range from slowly permeable clayey soils to well drained loamy soils over chalk or chalk rubble.

Currently, a detailed ALC survey has not been carried out for the Grid Connection Corridor and Inter-Array Areas. As a result, only provisional ALC data from public sources has been used for the assessment of these areas. Using a conservative approach, the classification estimates 1348.2ha of Grade 2 and 477.5ha of Grade 3a. When the final alignment of the Grid Connection is determined, a further assessment will establish whether and when detailed ALC surveys are needed, based on the extent and type of land use and the potential impacts.

Embedded Mitigation Measures

At this stage, embedded mitigation measures include:

- The Scheme design and layout has actively sought to avoid the inclusion of Grades 1 and 2 land where possible to reduce the overall impacts on highest quality agricultural land.
- For areas of the Site that do include BMV land, infrastructure that would lead to a permanent loss of BMV land have been avoided within these areas.
- Embedded mitigation measures will be detailed within an Outline SMP. The main mitigation measures set out within this would include:
- Avoiding working in unsuitable conditions.
- Utilising low ground pressure vehicles (tracked vehicles or vehicles fitted with tyres designed to operate at low inflation pressures) wherever possible.
- Installing access tracks early on to avoid unnecessary trafficking on agricultural soils or use track matting where needed in the early stages of construction.
- All soil trafficking and handling operation will be undertaken under the supervision of a suitably trained and experienced personnel to ensure soil is dry enough to be handled to prevent structural damage and need for amelioration. This will include inspections of soil conditions prior to vehicle movement to prevent compaction and spreading.
- Appropriate storage of soils. Different soil types including topsoil and subsoil will be stored separately to prevent mixing. Soils stored for longer than six months or over the winter period will be seeded and managed to prevent anaerobic conditions developing.

- With landowner agreement, the grassland under the solar PV modules can be managed by sheep grazing, meaning they could remain in agricultural use during the operation of the Scheme. Areas of grassland not grazed will be managed in line with measures contained in the Outline LEMP.
- Following decommissioning, the land will be returned back to the prior soil quality where practicable including retention of the pre-construction ALC grade. The ALC grade determined from the soil survey will be used to inform restoration works.

Summary of Potential Significant Effects

Construction Phase

During construction, soil function and land grade have the potential to be affected as a result of changes to soil characteristics, such as soil compaction, mixing of topsoil and subsoil resources, removal of topsoil, contamination or erosion. With effective good practice soil handling, reinstatement and re-use measures in place, secured by the Soil Management Plan, no permanent impacts on soil function are likely to be caused as a result of construction related activities. The effects on soil function will be not significant.

The effect of the Scheme on BMV land is considered to be significant in relation to impacts on Grades 1 and 2 and Grade 3a land. This reflects a conservative assessment approach which acknowledges the high quality soils of this land and that they may not be used for agricultural purposes during the operation of the Scheme. However, this impact is ultimately temporary as all land will be returned to agricultural use following the decommissioning of the Scheme.

The results of the ALC survey have been used to determine the design of the Scheme such that Grades 1 and 2 land have only been used for solar PV Array areas. Soil health may also improve in these areas due to the removal of the land from intensive agricultural practices during operation (i.e. the land laying "fallow"), and if grazed the increased soil organic matter and nutrient inputs. No infrastructure which could risk causing temporary soil degradation will be placed within the highest quality land (Grades 1 and 2) and Grade 3a has been avoided wherever practicable.

Operational Phase

During the operational phase, the conversion of land currently under arable production to grassland has potential benefits in relation to soil health. When cultivation ceases, this will remove disturbance effects on the soils along with the grassland vegetation. This may result in an increase in soil organic carbon, better soil structure, increased infiltration and enhanced soil microbial populations. There is a potential beneficial impact to soil health as a result of the Scheme. There will be no further loss to agricultural land quality following the construction phase of the Scheme.

Decommissioning Phase

The effects on soil ecosystems and agricultural land quality will be similar to those reported in construction as the land will only be taken on a temporary basis and following the decommissioning of the Scheme the land will be returned to its prior use and quality where practicable. All infrastructure will be removed and there will be no obstruction to cultivation after the decommissioning of the Scheme.

Cumulative Assessment

No significant cumulative effects have been identified.

11. Traffic and Transport

Baseline Conditions

The preliminary traffic and access assessment considers vehicle movements expected during the construction, operation and maintenance, and decommissioning phases. Of these, the movements associated with the construction phase are anticipated to be the greatest. Accordingly, traffic movements during the construction phase provide a focus for the assessment of the Scheme's transport effects.

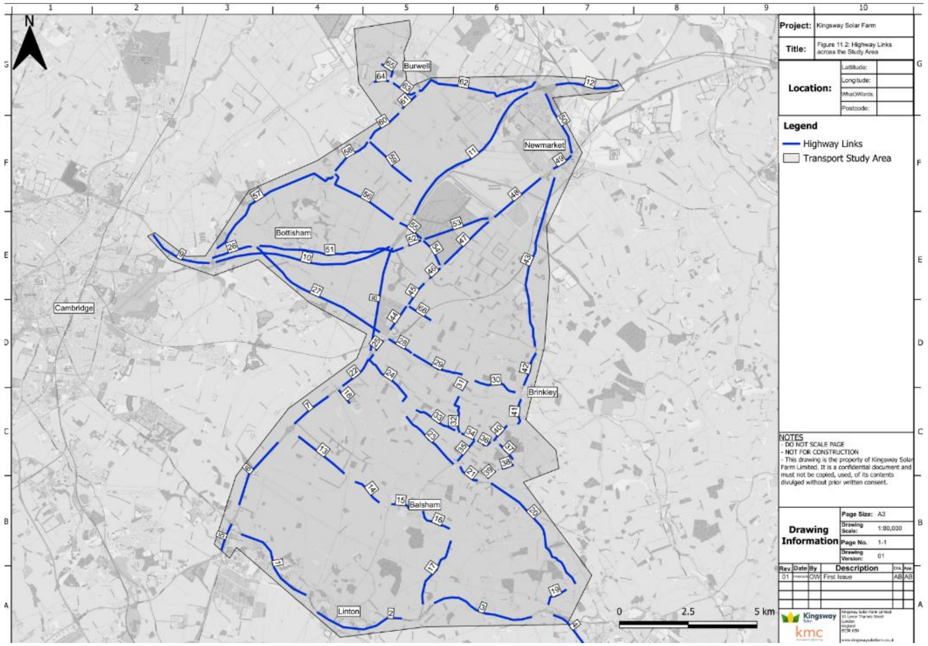
Automatic Traffic Count surveys using sensors and human-operated Manual Turning Count surveys have been undertaken. Department for Transport data has also been used in order to establish the baseline traffic conditions for the Study Area. Further traffic data will be collected in September to inform the ES.

A transport Study Area has been identified at this preliminary stage which covers the local roads (links) which provide access to the Scheme and associated routes towards the Strategic Road Network (SRN). The SRN will form the primary routes for all vehicle movements until the local routes need to be used to reach each area of the Scheme. It is upon these local routes where transport and access effects may occur.

The A11 borders the western Site boundary. Six Mile Bottom Road, running north west to south east, crosses the Site and connects the A11 to the village of West Wratting. The Grid Connection Corridor crosses several major roads including the A14 (at the interchange between the A11 and A14), A1303, A1304, Brinkley Road (B1052) and B1102. The A11 and A14 form part of National Highways SRN and are dual carriageway roads with two-three lanes in each direction that are subject to the national speed limit.

There are two National Cycle Network (NCN) routes within the Grid Connection Corridor: NCN route 51 and NCN route 11.

Plate 7: Highway Links across Study Area



Embedded Mitigation Measures

At this stage, embedded mitigation measures include:

- An Outline CTMP will be developed as part of the DCO Application which will set out the routes that HGVs would adhere to when accessing the Site and measures to improve the sustainability of worker travel, along with other measures to minimise transport effects from construction traffic.

- During both the construction and decommissioning phases, a CTMP/DTMP would be in place to ensure the safe management of traffic in each phase. These documents would contain the required embedded mitigation for each phase, to include:
- All access points that require the creation of a junction would be designed based on the relevant standards;
- Upgrading routes where it is considered necessary to cater for additional or larger vehicles;
- Utilising internal routes where practicable to reduce traffic using the existing road network;
- Managing the areas where traffic may have to cross local roads, by providing adequate visibility splays between construction vehicles and other road users, implementing traffic management, with a default priority that construction traffic would give-way to other users. This would also apply where construction traffic and PRoW may intersect;
- Restricting HGV and workers movements to ensure arrivals/departures avoid increasing traffic levels on the surrounding highway network during the weekday peak hours as far as practicable;
- Implementing a Delivery Management System to control the bookings of HGV deliveries from the start of the construction period. This would be used to regulate the arrival times of HGVs via timed delivery slots, as well as to monitor compliance of HGV routeing;
- Providing adequate space within the Site to ensure no queuing back onto the surrounding road network occurs;
- Encouraging local construction workers to car share to reduce single occupancy car trips.
- Providing sufficient on-Site car and cycle parking to accommodate the expected parking demand of workers for the Scheme;
- Maintaining access to PRoW during the construction phase, or, otherwise providing temporary or permanent diversion routes if required.

Summary of Potential Significant Effects

The results of this preliminary assessment are that the majority of links within the study area would not experience significant effects.

However, significant adverse effects, which would be short term and temporary, may occur during the construction and decommissioning phases across 16 road links as a result of an increase in HGV movements leading to delays to motorists, pedestrians and cyclists, perceptions of safety issues to road users, and community and social division from altered roads. For more information on the affected links, please refer to PEIR Chapter 12: Transport and Access.

This is likely only to occur during the construction and decommissioning phases. The predicted traffic levels owing to the operational phase are considerably lower, therefore it is considered that all operational effects will be negligible and not significant.

The assessment will be subject to further detailed review prior to the preparation of the ES and it is anticipated that the number of links currently identified as having the potential to experience significant effects would be reduced once more is known about the Scheme and the baseline conditions on those routes.

Cumulative Assessment

The cumulative impact assessment will be undertaken in consultation with the local highway authority, Cambridgeshire County Council, and Suffolk County Council, and the effects of cumulative schemes will be included in the ES.

12. Noise and Vibration

Baseline Conditions

Baseline noise conditions have currently been determined by reference to publicly available noise mapping data. The Local Planning Authorities are being consulted on further baseline noise monitoring, which will be undertaken prior to the preparation of the ES.

With reference to the available strategic noise mapping, existing ambient noise levels across the majority of the Site are assumed to be low, especially at night. The existing main sources of noise in the area are assumed to be the A11 and A14 and the Cambridge to Newmarket railway line, which all lie to the north of the Developable Areas and cross the Grid Connection Corridor.

Embedded Mitigation Measures

At this stage, embedded mitigation measures include:

- Measures set out within the Outline CEMP and Outline CTMP. These will include measures for the control of noise and vibration, such as:
- Restrictions on times during which construction activities can take place;
- Selection of quiet / low vibration equipment where reasonably practicable to do so;
- Location of plant and equipment as far as reasonably practicable from sensitive receptors; and
- Use of noise reduction measures such as attenuators / noise screening.

- The design of the Scheme has sought to locate the main sources of operational noise away from sensitive residential receptors in order to minimise potential impacts. Therefore, the BESS, Substations and Inverters will all be located further than 300m from the nearest noise-sensitive receptor.

Summary of Potential Significant Effects

Construction and Decommissioning Phases

Noise and vibration impacts due to construction and decommissioning traffic activity are not considered to be likely, due to the low construction traffic flows that are expected on local roads.

At this preliminary stage, full details of onsite construction activities are still being developed. Onsite construction activity has the potential to result in noise impacts at sensitive receptors, however any such impacts will be short term and temporary. As such, significant noise and vibration effects from on-site construction are not considered likely.

Operational Phase

The Scheme will not include any plant or equipment during the operational phase that is likely to generate substantial levels of vibration. As such, no impacts due to vibration of operational plant and equipment are likely. Operational noise will be generated by the proposed overhead line as well as fixed plant and equipment such as the battery storage, substation and inverter equipment.

The Scheme has committed that battery storage, substation, and inverters will be located more than 300m from noise sensitive receptors, therefore significant noise effects within the Developable Areas are not considered likely.

The overhead cables are likely to be located closer to noise sensitive properties. As such, at this preliminary stage, there is the potential for significant operational noise effects at properties within 200m of the proposed alignment of the overhead line. This equates to a total of 17 properties at which operational noise effects could be significant. The number of properties at which there is the potential for significant effects is likely to reduce as further information on the design of the Scheme is prepared leading into the DCO Application, and will be reported on in the ES.

Cumulative Assessment

There is a potential for significant operational cumulative effects on residential receptors within 200m of the overhead line. When further information becomes available at the ES stage, the cumulative operational noise assessment will be updated and a full assessment will be undertaken.

13. Air Quality

Baseline Conditions

Current baseline air quality conditions have been determined by reference to publicly available data, published by Defra and the relevant Local Planning Authorities.

Concentrations of key pollutants, nitrogen dioxide and particulates, are low across the Site and well below the national objective values, indicating good air quality.

Embedded Mitigation Measures

At this stage, embedded mitigation measures include:

- Measures set out within the Outline CEMP, Outline CTMP; to minimise emissions and sources of air pollution during the construction works. These measures will include, as a minimum:
- Erecting screens or barriers around particularly dusty activities;
- Inspecting the Site surroundings and adjusting measures accordingly;
- Maintaining a log of incidents and complaints relating to dust;
- Use of water-based dust suppression measures to dust generating activities, where appropriate;
- Avoiding bonfires of waste materials;
- Only using cutting equipment in conjunction with dust suppression techniques (such as extraction or water sprays);
- Ensuring all engines are switched off when not in use; and
- Avoiding site runoff where airborne pollutants would settle on surfaces and get carried into water systems.
- An Outline Battery Safety Management Plan ('Outline BSMP') will be prepared for the DCO Application including various controls to manage the potential air quality risks arising from a battery fire.
- An Outline DEMP will also be adopted during the decommissioning phase and the measures will be broadly similar to those included in the Outline CEMP for the purposes of minimising air pollutant emissions during the decommissioning works. This will be based on the most up to date standards and guidance at the time of decommissioning.

Summary of Potential Significant Effects

Construction and Decommissioning Phase

With the implementation of appropriate dust control measures, secured in the CEMP and DEMP, the effects in relation to amenity, human health and ecology will be negligible (not significant).

Given the size and rural location of the Site, emissions from Non-Road Mobile Machinery (NRMM) such as forklifts, are expected to occur primarily away from sensitive properties. NRMM will be managed to minimise air quality impacts to surrounding residential receptors and PRoW users. With these mitigation measures outlined in the CEMP. The effects on existing receptors from on-site machinery emissions are judged to be negligible (not significant).

The volume of construction road traffic generated is expected to fall below published screening criteria. Nevertheless, to minimise potential air quality impacts at sensitive receptor locations, traffic will be managed through measures included within the CTMP, CEMP and

DEMP. The effects on human health resulting from traffic emissions generated during construction and decommissioning are likely to be negligible (not significant).

Operational Phase

The assessment of effects during operation have been scoped out, other than in respect of the potential emissions arising from BESS fires. The potential impacts of unplanned emissions from a BESS fire will be outlined in greater detail in the Battery Fire Safety Management Plan (BFSMP), alongside the mitigation measures that the plan will secure to manage these.

Cumulative Assessment

No significant cumulative effects have been identified.

14. Socio-economics and Population

Baseline Conditions

PEIR Volume 1, Chapter 14: Socio-economics and Population presents a preliminary assessment of the socio-economic and population impacts associated with the construction, operation, and decommissioning of the Scheme. Given the mobility of construction workers and broader travel-to-work patterns, a Construction Labour Market Area (CLMA) of 80km was defined for the purpose of evaluating employment, unemployment and workforce availability. A more concentrated CLMA Focus Area of 16km to reflect where workers are more likely to reside. The assessment also considers baseline data from South Cambridgeshire, East Cambridgeshire, and Cambridgeshire County to evaluate effects on local economies, labour markets, agriculture, and tourism.

Although industry guidance recommends assessing impacts within 500m of the Scheme, the study area was expanded to include parishes in East Cambridgeshire, South Cambridgeshire, and Forest Heath, where disruption is more likely to be felt. Census data from 2021 indicates that the economic activity rate within the CLMA is 66%, exceeding local, regional, and national averages, though unemployment is also higher in this area. Employment surveys of the area show shows that the professional, scientific, and technical sector is the largest employer in South Cambridgeshire and the CLMA, with employment proportions above the national average. Additionally, construction job concentration in South Cambridgeshire is notably higher than the national level.

Approximately 22,325 individuals are employed in construction within the CLMA, contributing an estimated £39 billion in Gross Value

Added (GVA). Education levels are also above average, with 39% of the CLMA, 47% of the CLMA Focus Area, and 48% of South Cambridgeshire residents holding higher or further education qualifications, compared to the national average of 34%.

The Scheme affects agricultural land and various businesses along the Grid Connection Corridor, such as garages and takeaway shops. Nearby tourism and cultural assets include Pauline's Swamp, Burwell Museum, Swaffham Prior House, and Devil's Ditch. Hotel occupancy rates in the East of England average 76–77%, leaving between 882 and 1,128 rooms unoccupied during peak tourist months in Cambridge and surrounding areas. The Community Study Area contains 497 Public Rights of Way (PRoW) and permissive paths, with the Scheme located near popular routes like Wimpole Hall and Fen Drayton Lakes. Community facilities such as schools, open spaces, and village halls are concentrated around West Wratting, Newmarket, Weston Colville, and Balsham.

There are 288 Public Rights of Way (PRoW) within 1km of the Developable Areas. Of these, 31 PRoWs intersect or are located within the Developable Areas, 15 intersect the Grid Connection Corridor, and two intersect both the Developable Areas and Grid Connection Corridor.

Embedded Mitigation Measures

Design principles including the identification of recreational and commercial receptors and their sensitivity to environmental change, and avoidance of land subject to planning applications or site allocations have been adopted as embedded mitigation. Further embedded mitigation in relation to population and socio-economic effects is secured in the following management plans: Outline CEMP, Outline CTMP, Outline DEMP, Outline LEMP, Outline EMP), and Outline PRoWMP. An Outline Employment, Skills and Supply Chain Plan (OESSCP) will also be included with the DCO submission, and will be aimed at enhancing and retaining the positive socio-economic effects relating to employment, skills, education and wider economic benefits in accordance with EN-1 and in-line with local and regional policy

Summary of Potential Significant Effects

Construction and Decommissioning Phase

- The Scheme will create up to 900 direct construction jobs at peak, with 560–640 FTEs in the wider CLMA and 310 in the CLMA Focus Area. This will result in temporary, neutral to slight beneficial effects, which are not considered significant.
- Annual economic output from the construction workforce is estimated between £1 million and £2.2 million, with total contributions of £129–£221 million in the CLMA and £71–£106 million in the Focus Area. These indirect effects are temporary and neutral to slight beneficial, and not significant.
- Around 0.48% of Cambridgeshire's agricultural land will be temporarily taken out of use, leading to a minor adverse effect at the county level, which is not significant.
- Opportunities for agricultural diversification are expected through landowner-tenant negotiations, resulting in minor adverse effects at the community and individual landholding level, which are not significant.
- Effects on non-agricultural businesses are expected to be negligible and temporary, and are not considered significant.
- Use of tourist accommodation by non-local workers is expected

to be short-term and low in impact, resulting in a minor beneficial effect. However, effects on the wider tourist economy are expected to be minor adverse. Both are temporary and not significant.

- Only one Public Right of Way (PRoW 251/18) is expected to be affected during construction, with changes continuing into the operational phase. The impact on community access is minor adverse, temporary, and not significant.

Operational Phase

- The Scheme will support 15 FTE jobs, with 10 net additional roles in Cambridgeshire, resulting in a slight, long-term beneficial effect.
- Gross employment is expected to generate approximately £2.8m annually, with around £2m benefiting Cambridgeshire.
- Agricultural impacts during operation will mirror those during construction but over a longer period, leading to a greater magnitude of change.
- Land access changes will continue from the construction phase, with temporary construction areas returning to farming and Developable Areas offering agricultural diversification.
- Non-agricultural businesses may experience minor permanent adverse effects due to land displacement and environmental/accessibility changes, though these are not significant.
- Tourism may face temporary minor adverse effects (not significant), with limited and highly localised environmental impacts.
- Only one Public Right of Way (PRoW 251/18) will be affected long-term, but an alternative route ensures minimal impact on community access. Community access effects are expected to be temporary and minor adverse (not significant).

Cumulative Assessment

No significant effects have been identified within the cumulative assessment. Subject to further information, a full review of effects on agricultural and non-agricultural businesses/landholdings during the construction, operational and decommissioning phases will be undertaken at the ES stage.

15. Climate Change

Baseline Conditions

The baseline was established by using publicly available environmental and climate data, combined with consideration to existing agricultural emissions at the Site and typical UK climate conditions. Two different baselines were prepared for the two assessments within this chapter – the Greenhouse Gas (GHG) Impact Assessment, which considers the total greenhouse gas emissions (or savings) of the Scheme, and the Climate Change Risk Assessment (CCRA) which considers the potential vulnerabilities of the Scheme and its components to the effects of climate change (like increased flooding, hotter summers or severe storms).

GHG Impact Assessment

The existing Site primarily consists of agricultural land and natural and semi-natural habitats, with GHG emissions from current farming practices estimated at 831 tonnes of carbon dioxide equivalent (CO_2e).

Consideration has also been given to and alternative comparative baseline emission associated with the generation of the equivalent amount of electricity as will be provided by the Scheme, but instead using natural gas-fired power stations, as a likely alternative to provide the electricity the Scheme is should the Scheme not proceed. To be conservative, it has been assumed that they operate with Carbon Capture and Storage (CCS) technology, reflecting government policy for new gas-fired power stations to adopt this technology.

CCRA Assessment

Baseline conditions to assess the impacts of future climate risks have been defined by considering the potential climate risks identified in the UK Climate Change Risk Assessment and the Met Office's Key Climate Projections.

The key climate hazards identified for the Scheme are:

- Heatwaves;
- Drought; and
- Flooding.

Information on the predicted UK climate has been taken from the UK Climate projections, where available, for the 2070-2089 period as this is 40 years after the anticipated year of first operation of the Scheme, and therefore reflects the worst possible scenario for climate impacts on the Scheme.

Summary of Potential Significant Effects

GHG Impact Assessment

The GHG Assessment found that while the Scheme will generate minimal carbon emissions, primarily during construction, it will avoid far greater emissions by replacing fossil fuel energy and agriculture with renewable energy generation. Without the Scheme, 33,250 tonnes of CO_2e would be emitted over 40 years from farming, and reliance on fossil fuels would add 3.9 million tonnes of CO_2e.

The Scheme will have a beneficial effect with regards to GHG emissions.

CCRA Assessment

The CCRA assessment found any risks to equipment and workers from extreme weather to be minor. Mitigation that will be embedded in the Scheme includes flood-resilient infrastructure, durable materials, and worker safety measures through appropriate health and safety plans. As a result, no significant climate-related effects are expected.

The CCRA assessment has not identified any potentially significant climate change effects in relation to the Scheme.

Cumulative Assessment

The assessment of cumulative effects does not apply to the GHG assessment because its impacts are considered globally already. The CCRA assessment focuses on climate change impacts on identified receptors within the Scheme, without considering broader cumulative effects. Therefore, no cumulative assessment is needed.

16. Other Environmental Topics

Human Health

PEIR Volume 2, Chapter 16: Other Environmental Topics summarises the proposed approach and methodology which will be applied in the HIA with reference to the HIA Method Statement, provided at **PEIR Volume 4, Appendix 16.3**. The HIA will be informed by information contained within other relevant technical assessments carried out in support of the ES. The likely effects of the Scheme on the health outcomes of the general population and identified vulnerable / priority groups will be undertaken. The assessment will cover all phases of the Scheme, construction, operation, and decommissioning.

Given that the HIA will rely strongly on other specific assessments and chapters in the ES, the assessment carries the same assumptions and limitations from those individual assessments. As stated in **PEIR Volume 4, Appendix 16.3**, baseline data collection will be in the initial phase of the HIA, collecting data including the local demographic profile, local health data, and policies and plans for appropriate study areas.

Key design principles and measures embedded in the design of the Scheme are to be outlined in the HIA. As the HIA relies strongly on other specific assessment and chapters of the ES, the mitigation outline within the other aspect chapters (PEIR Volume 2) will be replied upon. The DCO is also supported by several outline management plan which provide mitigation options which should reduce any effects on some of the determinants of health.

All of these elements of embedded mitigation will also ensure that health effects are kept to a minimum, through reducing noise and air pollution emissions and reducing the visual impact. Where possible, positive health effects will be maximised through employment and training opportunities.

The outcome of the PEIR will be used to design the scope of the HIA in terms of relevant health determinants.

Minerals

PEIR Volume 2, Chapter 16: Other Environmental Topics provides a summary of the draft Mineral Safeguarding Statement located in **PEIR Volume 4, Appendix 16.4**. This document is provided as a draft for the purposes of statutory consultation at this stage, a final statement will form a standalone report submitted as part of the DCO Application. The draft statement identifies two Mineral Safeguarding Areas located within the Site for chalk, sand and gravel. It also identifies that a small portion of the Site is located within a Mineral Consultation Area.

It is assumed that the Scheme will not have any significant effects on the mineral resources located within the Site, this is due to the Schemes temporary nature with the removal and restoration of the Site to be ensured by the provision of a DEMP at the decommissioning phase. Therefore, it is assumed that the Schemes temporary nature would simply delay the availability of the resources for possible extraction in the future.

Waste

PEIR Volume 2, Chapter 16: Other Environmental Topics provides a description the waste streams likely to arise from the Scheme during the construction, operation and decommissioning phases, proposals for their management and the preliminary assessment of the likely significant effects of the Scheme.

A Site Waste Management Plan (SWMP) and a CEMP would be prepared for the construction phase, these would detail the approach to construction materials and waste. An Outline Operational Environmental Management Plan (Outline OEMP) would be prepared for the operational phase, which would be implemented to cover any waste arising from the Scheme, for example any batteries or solar PV panels that might need replacing. A DEMP would be prepared for the decommissioning phase, which would detail how to avoid and minimise waste and divert waste from landfill.

The management plans would be prepared and implemented in line with the waste hierarchy (i.e. prevention; preparing for reuse; recycling; other recovery, including energy recovery; and disposal) and opportunities to recycle waste will be explored.

A review of baseline conditions, and the expected provision of landfill capacity by the local authorities, suggested that there will be sufficient landfill capacity to meet predicted waste management requirements in the region. There are no allocated waste sites, waste site applications or permitted waste sites within the Site.

It is predicted that waste arising during the construction, operational and decommissioning phases within the Site would be considered not significant, as the quantity of waste requiring disposal to landfill is likely to be minimal.

Glint and Glare

Solar panels are specifically designed to absorb, not reflect, the sun's rays. However, solar panels may reflect the sun's rays at certain angles, causing glint and glare. A full assessment of glint and glare will be undertaken and will accompany the ES within the DCO Application. ‘Glint’ is defined as a momentary flash of bright light typically received by moving receptors or from moving reflectors, and ‘glare’ is defined as a continuous source of bright light typically received by non-moving receptors or from large reflective surfaces. The effect occurs when the solar panel is stationed between or at an angle of the sun and the receptor.

PEIR Volume 2, Chapter 16: Other Environmental Topics summarises the preliminary understandings of the likely effects on Glint and Glare as a result of the Scheme. The identified receptors are as follows:

- Roads users within 1km;
- Occupants of residential properties within 1km;
- Ground-based uses, such as PRoW, within 1km;
- Railways uses within 1km; and
- Aviation activity at airfields within 10km.

It is assumed that not all solar PV modules would be present simultaneously during the construction and decommissioning phases. Therefore, it is expected that the operational phase would represent a worst-case scenario in regard to the length of Glint and Glare resulting from the Scheme. Embedded mitigation could includes vegetation screening in key locations, which will be identified through further assessments, to reduce Glint and Glare for ground-base receptors. This will be further developed for inclusion in the ES.

As the Scheme design and PV panel location is not fixed at this stage, a detailed assessment has not been undertaken. However, it is assumed that any potential significant impacts identified through the process of modelling within the assessment, will be adequately mitigated such that any impacts cannot be considered ‘significant’.

Water Resources

PEIR Volume 2, Chapter 16: Other Environmental Topics provides a description of the potential impact arising from the Scheme on water resources, providing details of the proposed embedded mitigation measures and a preliminary assessment of the likely significant effects of the Scheme.

A review of baseline conditions reveals that there are several watercourses traversing the Site, with three Environmental Agency Main Rivers identified in the northern extent of the Site within the Grid Connection Corridor. The three watercourses are all tributaries of the River Cam to the west, and form part of the drainage ditch network.

It is also noted that six Water Framework Directive (WFD) waterbodies are identified within the Site, however none of these are identified within the Developable Areas. Most of the Site is at low risk of flooding, according to official maps from the Environment Agency. However, some small areas near existing streams or ditches could be at medium - high risk of flooding from rivers or the sea. When it comes to flooding from heavy rain (surface water), most of the Site is also at very low risk. Some spots near those same watercourses face low - high risk of surface water flooding.

The south eastern extents of the Site are located within a Drinking Water Safeguard Zone and the Site is also likely to fall within the Anglian Water and Cambridge Water extents which are classified as water stress areas.

Regarding potential mitigation measures, a full Flood Risk Assessment will be provided with the DCO **Application** to ensure all potential flood risk has been considered. For areas of concentrated hardstanding an outline Surface Water Drainage Strategy will be prepared to ensure no increase in rate of surface water runoff from the Site. Regarding water resources and supply, the water resource requirements during the operational phase are not considered to be significant, and it is assumed that there will be a temporary increase in water resource use during the construction and decommissioning phases. Consultation has been held with Anglian Water, and the Applicant has agreed to not exceed the 20m 3/day limit for non-domestic water, as required by Anglian Water.

It is predicted that there will be no significant effects regarding flood risk and water quality, due to the present low flood risk on-site, embedded mitigation measures secured by the management plans and Flood Risk Assessment which will accompany the ES. Regarding the WFD waterbodies, it is assumed that the effects will not be significant, but requirements of the WFD will be discussed further with the Environment Agency to support the DCO Application. Finally, regarding water resources, following consultation with Anglian Water, it is assumed that no significant effects will occur and further mitigation is not considered necessary.

17. Cumulative Effects

This section summarises the likely significant effect interactions (intra-cumulative effects) of the Scheme. The assessment of effect interactions assesses the potential for interaction between individual effects of the Scheme upon the same receptors (i.e. residential properties, ecological habitats, road users etc.). Inter-Project effects between other schemes are covered within technical sections.

What are the potential interactive 'intra-project' effects?

Based on a precautionary assessment at this preliminary stage, Table 3 summarises the potential for significant intra-project cumulative effects on groups of receptors using the construction phase as an example. This assessment will be refined at the ES stage.

No further effects from interactions are predicted above the level that is stated within environmental each topic section for the decommissioning, operational and construction stages. This conclusion was reached due to the different spatial locations of receptors; or different technical topics assessments assessing the same impact on a receptor. Where required, additional mitigation and monitoring will be considered and updated at the ES stage.

Over the three assessment stages, potential for temporary effect interactions may affect: ecological habitats; users of the PRoW and road network; above ground heritage receptors; land use within the Site; and residential properties across separate technical topics. It was consequently identified that these effects would not interact.

Table 4 provides a summary of the Intra-cumulative effects.

Table 3: Summary Matrix of Effect Interactions – Construction

Key	Colour Code
Major beneficial	
Moderate beneficial	
Minor beneficial	
Minor adverse	
Moderate adverse	
Major adverse	

Receptor (Construction Effects)	Topics								Potential for Effect Interactions (Y/N)
	Bio	LV	CH		S & Agr	TT	NV	SE	
			Above Ground	Below Ground					
Ecological habitats									Y
Fauna									N
Users of the PRoW network									Y
Users of the road network									Y
Land Use within the Site									Y
Below Ground Heritage Receptors									N
Above Ground Heritage Receptors									Y
Water Resources									N
Soil Quality									N
Residential Properties									Y
Local Economy and Business Premises									N
Tourism									N

Topics: Biodiversity (Bio); Landscape and Visual Amenity (LV); Cultural Heritage (CH); Land and Groundwater (L & GW); Soils and Agriculture (S & Agr); Traffic and Transport (TT); Noise and Vibration (NV); Air Quality (AQ); and Socio-economics and Population (SE.)

Table 5: Summary of the Intra-Project Effects

Receptor	Potential Intra-Project Topic and Impact	Duration	Potential Intra-Project Effect
Construction Phase			
Ecological Habitats	Landscape and Visual: Non-significant Ecology: Significant	Temporary	None
Users of PRoW Network	Landscape and Visual: Significant Socio-economics and Population: Significant		
Users of the Road Network	Landscape and Visual: Significant Traffic and Transport		
Land Use within the Site	Landscape and Visual: Significant Soils and Agriculture: Significant		
Residential Properties	Landscape and Visual: Significant Noise and Vibration: Significant		
Operational Phase			
Ecological Habitats	Landscape and Visual: Significant Ecology: Significant	Long term	None
Users of the PRoW Network	Landscape and Visual: Significant Socio-economics and Population: Significant		
Above Ground Heritage Receptors	Landscape and Visual: Significant Cultural Heritage – Built Heritage: Significant		
Residential Properties	Landscape and Visual: Significant Noise and Vibration: Significant		
Decommissioning Phase			
Above Ground Heritage Receptors	Landscape and Visual: Significant Cultural Heritage – Built Heritage: Not Significant	Temporary	None
Users of PRoW Network	Landscape and Visual: Significant Socio-economics and Population: Significant		
Residential Properties	Landscape and Visual: Significant Noise and Vibration: Not Significant		

18. Next Steps

Following the statutory consultation period, the consultation feedback will be considered, and the Scheme design will be further refined. This will form the basis of the Scheme design that will be assessed within the ES and submitted to the Planning Inspectorate for the DCO Application.

This Scheme will be subject to further environmental assessment building on the preliminary information presented in the PEIR and summarised in this document. This further assessment, together with the outputs of ongoing environmental surveys and fieldwork, will be presented in the ES. The ES is the legally required reporting output for the EIA which will also be submitted to the Planning inspectorate as part of the DCO submission. A Non-Technical Summary of the ES will also be submitted.