



THE DROVES
SOLAR FARM

The Drovers Solar Farm

Preliminary Environmental Information Report
Non-Technical Summary

Prepared by: LDA Design
Date: May 2025
PINS Reference: EN0110013



THE DROVES
SOLAR FARM

The Droves Solar Farm

Preliminary Environmental Information Report

Non-Technical Summary

Prepared by: LDA Design

Date: May 2025

PINS Reference: EN0110013



Contents

1	<u>Non-Technical Summary</u>	10
1.1	Introduction.....	10
2	<u>EIA Process and Methodology</u>	12
2.1	Introduction.....	12
2.2	EIA Scoping.....	13
2.3	Consultation to Date	13
2.4	Cumulative Impacts	14
3	<u>The Scheme Location and Sensitivities</u>	15
3.1	The Site	15
3.2	Environmental Sensitivities	15
4	<u>Scheme Description</u>	17
4.1	Overview	17
4.2	Proposed Components of the Scheme	17
4.3	Construction, Operation and Decommissioning Phases	25
5	<u>Alternatives and Design Evolution</u>	29
5.1	Introduction.....	29
5.2	Scale of the Scheme.....	29
5.3	Site Evaluation.....	29
5.4	Alternatives Considered.....	30
5.5	Design Evolution.....	31
6	<u>Landscape and Visual</u>	32
6.1	Introduction.....	32
6.2	Baseline Conditions and Methodology	32
6.3	Mitigation Measures.....	33



6.4	Assessment of Likely Significant Effects	34
6.5	Additional Mitigation.....	37
6.6	Residual Effects.....	37
<u>7</u>	<u>Ecology and Biodiversity.....</u>	<u>38</u>
7.1	Introduction.....	38
7.2	Baseline Conditions and Methodology	38
7.3	Mitigation Measures.....	39
7.4	Assessment of Likely Significant Effects	40
7.5	Additional Mitigation.....	44
7.6	Residual Effects.....	45
<u>8</u>	<u>Cultural Heritage and Archaeology</u>	<u>46</u>
8.1	Introduction.....	46
8.2	Baseline and Methodology.....	46
8.3	Mitigation Measures.....	46
8.4	Assessment of Likely Significant Effects	47
8.5	Additional Mitigation.....	48
8.6	Residual Effects.....	49
<u>9</u>	<u>Transport and Access.....</u>	<u>50</u>
9.1	Introduction.....	50
9.2	Baseline Conditions and Methodology	50
9.3	Mitigation Measures.....	52
9.4	Assessment of Likely Significant Effects	53
9.5	Additional Mitigation.....	53
9.6	Residual Effects.....	54
<u>10</u>	<u>Noise and Vibration</u>	<u>55</u>
10.1	Introduction	55



The Drovers Solar Farm – Preliminary Environmental Information Report
Non-Technical Summary
May 2025

10.2	Baseline Conditions and Methodology.....	55
10.3	Mitigation Measures	55
10.4	Assessment of Likely Significant Effects.....	56
10.5	Additional Mitigation	59
10.6	Residual Effects	59
11	<u>Soils and Agriculture.....</u>	60
11.1	Introduction	60
11.2	Baseline Conditions and Methodology.....	60
11.3	Mitigation Measures	61
11.4	Assessment of Likely Significant Effects.....	61
11.5	Additional Mitigation	62
11.6	Residual effects.....	62
12	<u>Water Resources.....</u>	63
12.1	Introduction	63
12.2	Baseline Conditions and Methodology.....	63
12.3	Mitigation Measures	63
12.4	Assessment of Likely Significant Effects.....	64
12.5	Additional Mitigation	64
12.6	Residual Effects	64
13	<u>Climate.....</u>	65
13.1	Introduction	65
13.2	Baseline Conditions and Methodology.....	65
13.3	Mitigation Measures	66
13.4	Assessment of Likely Significant Effects.....	68
13.5	Additional Mitigation	69
13.6	Residual effects.....	69



<u>14</u>	<u>Socio-Economics and Human Health</u>	<u>70</u>
14.1	Introduction	70
14.2	Baseline Conditions and Methodology.....	70
14.3	Mitigation Measures	74
14.4	Assessment of Likely Significant Effects.....	75
14.5	Additional Mitigation	82
14.6	Residual effects.....	83
<u>15</u>	<u>Other Environmental Matters</u>	<u>84</u>
15.1	Introduction	84
<u>16</u>	<u>Cumulative Effects</u>	<u>90</u>
16.1	Introduction	90
<u>17</u>	<u>Summary and Conclusions</u>	<u>92</u>



List of Tables

Table 4.1 Minimum offsets/buffers from existing landscape features	24
Table 11.1 Population health baseline indicators	70
Table 11.2 Vulnerable groups	72

List of Images

Image 4.1 Option A - Typical Fixed PV Arrays (with indicative Conversion Unit)	18
Image 4.2 Option B - Typical Single Axis Trackers	18
Image 4.3 - Typical Conversion Unit	19
Image 4.4 Typical Inverter Unit	20
Image 4.5 Air Insulated Substation	21
Image 4.6 Typical BESS Units	23



Glossary

Term	Description
33kV Sub-distribution Switch Rooms	Switch rooms within the Solar PV Site that collect the generated power from the Solar PV Arrays and convert it to 33kV.
Access tracks	The tracks either existing or proposed, within the Site, which provide access around the Scheme.
Ancillary Buildings	The office, storage and plant buildings which may be located within the Solar PV Site.
Ancillary Infrastructure	Works that are ancillary to the Scheme, including enclosure and boundary treatment, security and monitoring infrastructure, landscaping and biodiversity measures including planting, drainage and irrigation works, signage, earthworks, and access including Permissive Paths.
Applicant	The Drovers Solar Farm Limited.
Associated Development	Development associated with the Scheme including but not limited to the BESS, Customer Substation, National Grid Substation, Grid Connection Infrastructure and Ancillary Infrastructure, and any other works integral to the construction, operation, maintenance and decommissioning of the Scheme.
Battery Energy Storage System (BESS)	Battery Energy Storage System (BESS), is used to describe the battery storage installation to allow for the storage, importation, and exportation of energy to the National Grid. For the purposes of the Environmental Impact Assessment, it has been assumed battery technology will be adopted for the BESS.
Cable Circuit	An electrical conductor necessary to transmit electricity between two points within the Scheme and may include one or more auxiliary cables for the purpose of gathering monitoring data, earthing cables, cables for auxiliary supply, optical fibre and other types of communication cables, cables connecting to direct current boxes.
Cabling	The low or medium voltage cables within the Scheme, which transmit electricity between PV Panel to Conversion Units and from there to the Customer Substation and BESS. These cables consist of 33kV (kilovolt), and 400kV cables, as well as earthing cables and optical fibre cables.



Construction Hub	An area within the Site where deliveries will be set down, managed and redistributed throughout the Construction Phase.
Conversion Units	Conversion Units incorporate the inverters, transformers and switchgear and are required to manage the electricity generated by the PV Panels. These would either be standalone equipment, or they would be housed ('integrated') together within a container.
Customer Substation	<p>The Scheme substation comprising electrical infrastructure such as the Transformers, Switchgear and metering equipment required to facilitate the export of electricity from the Scheme to the National Grid Substation. The Customer Substation will also provide Ancillary Buildings for staff welfare and storage facilities.</p> <p>The Customer Substation will convert the electricity transmitted along the Cable Route Corridor up to 400kV (kilovolt) for onward transmission to the National Grid Substation via the Grid Connection Cables.</p>
Development Consent Order (DCO)	Development consent is required pursuant to the Planning Act 2008 for Nationally Significant Infrastructure Projects. A development consent order is a statutory instrument containing powers that enable the applicant to carry out the construction, operation, maintenance and decommissioning of the Nationally Significant Infrastructure Project. Applications for DCOs are made to, and decided by, the relevant Secretary of State.
Development Consent Order (DCO) Application	The application for a Development Consent Order (DCO) to be submitted by the Applicant for the Scheme.
Fixed South Facing PV Arrays	Solar photovoltaic (PV) tables that face south and are mounted to fixed Mounting Structures in an east/west configuration.
Grid Connection Cables	The 400kV (kilovolt) cables connecting the Customer Substation to the Point of Connection.
Grid Connection Infrastructure	Underground and/or overhead lines including new pylons between the National Grid Substation and the Point of Connection.
Ground Mounted PV Modules	Solar photovoltaic (PV) modules attached to structures that are fixed to the ground which include Single Axis Tracker PV Arrays or Fixed South Facing PV Arrays.
Highway Works	Any works associated with the temporary or permanent amendments to the highway and/or highway verges to facilitate



	the Construction Phase, Operational Phase and Decommissioning Phase of the Scheme.
Inverter	Inverters convert the Direct Current (DC) electricity generated by the PV Panels into Alternating Current (AC), which allows the electricity generated to be exported to the national grid.
Mounting Structures	The metal frames onto which the PV panels are attached.
National Grid Substation	The 400kV (kilovolt) substation operated by National Grid Electricity Transmission.
Nationally Significant Infrastructure Project (NSIP)	A NSIP is a large-scale development (as defined in sections 14-30A of the Planning Act 2008) such as certain new harbours, power generating stations (including solar and wind farms), highways developments and electricity transmission lines, which require a type of consent known as ‘development consent’ which is governed by the Planning Act 2008.
Point of Connection (POC)	The National Grid Substation and associated connection into the 400kV overhead lines located at The Drovers Solar Farm, which the Scheme connects to, to transfer the energy generated to the national grid system.
PV panel	Solar photovoltaic panel designed to convert solar irradiance to electrical energy. The PV panel is attached to a Mounting Structure.
PV Tables	PV panels mounted onto the Mounting Structure, forming tables, which are set out in rows either in an east/west or a north/south configuration.
Scheme	A Nationally Significant Infrastructure Project (NSIP) comprising a Ground Mounted solar photovoltaic generating station with a gross electrical capacity of over 50 megawatts, with Associated Development which would allow the generation, storage and export of electricity. The Scheme is known as “The Drovers Solar Farm”.
Single Axis Trackers	Mounting Structures in a north/south configuration, that allow the PV Table to rotate and track the movement of the sun.
Site	Area consisting of the Solar PV Site, Associated Development, Ancillary Infrastructure and Highway Works and any other element or component that forms part of the Scheme.



The Drovers Solar Farm – Preliminary Environmental Information Report
Non-Technical Summary
May 2025

Solar PV Arrays	Rows or groups of PV Tables that are connected to one another to form a Solar PV Array.
Solar PV Site	A term used to describe the land that accommodates the Solar PV Arrays, Conversion Units and 33kV Sub-distribution switch rooms.
Switchgear	A combination of electrical disconnect switches, fuses or circuit breakers used to control, protect, and isolate electrical equipment.
Temporary Construction Compounds	Temporary laydown areas used during construction, comprising areas of hardstanding, car parking, areas to store materials and equipment, waste management, security infrastructure including fencing, lighting and cameras.
Transformers	Transformers increase and decrease the voltage of the electricity. There would be 33kV Transformers and 400kV Transformers within the Scheme.



1 Non-Technical Summary

1.1 Introduction

Background

- 1.1.1 The Applicant is developing plans for a solar farm together with associated infrastructure located in Norfolk, with the intention to submit a Development Consent Order (DCO) Application to the Secretary of State for Department for Energy Security and Net Zero for the construction, operation (including maintenance and replacement), and decommissioning of a solar photovoltaic (PV) electricity generating station and associated development, including a Battery Energy Storage System (BESS), a Customer Substation, a new National Grid Substation and Grid Connection Infrastructure.
- 1.1.2 As the Scheme would have a generating capacity in excess of 50 megawatts (MW), it is considered to be a Nationally Significant Infrastructure Project (NSIP) under sections 14(1)(a) and 15(2) of the Planning Act 2008 and, therefore, requires a DCO under the Planning Act 2008.
- 1.1.3 The Preliminary Environmental Information Report (PEIR) represents the preliminary findings of the environmental assessments undertaken by the Applicant to date, as well as describing the location, layout and design of the Scheme.
- 1.1.4 The Scheme will contribute to the reduction of carbon emissions and reliance on fossil fuels by providing a renewable energy source to assist with the UK's energy transition. The Scheme also seeks to put Norfolk at the forefront of low carbon energy development, production, and servicing, with the intention of bringing economic, community, and environmental benefits.
- 1.1.5 The Operational Phase of the Scheme will be up to 60 years and the Scheme will be decommissioned after the Operational Phase.

The Site

- 1.1.6 The Scheme is located in an area of countryside to the north of Swaffham, south of Castle Acre, West Norfolk and south-east of King's Lynn. The land for the Scheme is referred to as 'the Site'.
- 1.1.7 The Site is shown on the Scheme location plan Figure 3.1 (**Volume II, Chapter 3: Site Boundary and Context, Figure 3.1**).

The Applicant

- 1.1.8 The Scheme is being developed by The Drovers Solar Farm Limited (the Applicant). The Drovers Solar Farm is a 100% subsidiary of Island Green Power Limited, which is a leading developer of utility scale solar projects and battery storage systems, established in 2013.
- 1.1.9 IGP has successfully delivered 36 solar projects worldwide totaling more than 2.5GW of capacity. This includes 20 solar projects in the UK. These range in size from below 5MW to Nationally Significant Infrastructure Projects (NSIPs) such as Cottam Solar Project, currently



the UK's largest consented solar farm, which will generate 600MW of clean, renewable and secure electricity including 600MW of Battery Storage.

- 1.1.10 Their mission is to deliver renewable energy solutions that create lasting value for the communities they serve, protecting the environment while fostering economic growth and energy independence.

Purpose of the PEIR and NTS

- 1.1.11 The Scheme is required to be subject to an Environmental Impact Assessment (EIA) as it is considered to be 'EIA Development' as defined by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations).
- 1.1.12 The information contained in the PEIR is preliminary and may not represent the final project design or include the final EIA considerations and conclusions. The Applicant is seeking consultation responses to the information presented within the PEIR to continue to refine the development design of the Scheme and to continue to obtain information that will inform the final assessment of the impacts which will be contained in the Environmental Statement (ES) (which is the report relating to the EIA process), which will accompany the DCO Application. Further detail is provided in the relevant PEIR technical chapters (Volume I, Chapter 6-15) on how the assessment will be further developed in the ES.
- 1.1.13 The PEIR is published to accompany the statutory consultation under sections 42, 47 and 48 of the Planning Act 2008 and follows non-statutory consultation undertaken by the Applicant in 2024. The statutory consultation runs for a period of 7 weeks in accordance with the Statement of Community Consultation (SoCC).
- 1.1.14 The purpose of this NTS is to provide a summary of the PEIR in non-technical language.



2 EIA Process and Methodology

2.1 Introduction

- 2.1.1 **Volume I, Chapter 2: EIA Process and 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.
- 2.1.2 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.
- 2.1.3 The purpose of identifying significant effects is to provide stakeholders with information to make an informed judgement on the Scheme. The PEIR provides the preliminary environmental information obtained and assessed as part of the EIA.
- 2.1.4 The general approach of the EIA is to compare the conditions before the Scheme commences against the predicted environmental conditions during the Construction, Operational and Decommissioning Phases of the Scheme.
- 2.1.5 The EIA process will typically begin by evaluating the sensitivity of a receptor (such as a species, habitat, or community) to potential direct and indirect changes to their conditions. After assessing sensitivity, the EIA then examines the magnitude (size) of the potential impact. Effects can be categorised as neutral, negligible, minor, moderate, or major. Typically, moderate or major effects are deemed significant, however, this can vary depending on the topic specific technical guidelines followed. Each topic chapter sets out the criteria and category it has used to identify significant effects. The effects may be beneficial or adverse, temporary or permanent, short term, medium term or long term.
- 2.1.6 The EIA identifies mitigation measures to be incorporated into the design of the Scheme that will avoid, reduce or mitigate environmental effects, and also enhance the environmental outcomes of the Scheme. Once the significance of an effect is determined, additional mitigation measures may be required to reduce the significance of the effect further. Additional mitigation measures are set out in each topic chapter where they are needed.
- 2.1.7 Following the statutory consultation period, the PEIR will be updated and developed into the ES which will accompany the DCO Application expected to be submitted in Autumn 2025. The process of identifying environmental effects is iterative and is developed in parallel with the design process.
- 2.1.8 The EIA process is designed to produce an environmentally sensitive development by considering and assessing the effects of the Scheme against existing environmental baseline conditions.
- 2.1.9 To date, the EIA team has undertaken a review of both the environmental sensitivities within and surrounding the Site boundary, and the study areas of the respective topic chapters, to identify any potential environmental effects. Where the environmental baseline has been informed by site visits and environmental surveys, these are detailed in the relevant topic section of this PEIR.



- 2.1.10 The EIA process is undertaken in accordance with the EIA Regulations, guidance produced by the Planning Inspectorate (PINS) and the Institute of Environmental Management and Assessment (IEMA) and other environmental topic-specific guidance. The PEIR sets out details on the methodology and approach, along with the overall preliminary conclusions of the EIA process. It also outlines the main parameters and detailed design aspects of the Scheme against which the assessment has been undertaken.
- 2.1.11 Development parameters have been determined and fixed for the purposes of the PEIR assessment through an iterative approach taking into account baseline environmental information, the evolving design and any associated technical requirements.

2.2 EIA Scoping

- 2.2.1 EIA Scoping is the process of identifying 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.
- 2.2.2 Although scoping is not a mandatory requirement under the EIA Regulations, it is recognised as a useful preliminary procedure which helps to identify the main effects that the Scheme is likely to have on the environment.
- 2.2.3 An EIA Scoping Opinion Request (**Volume III, Scoping Opinion Request, Appendix 2.1**), identifying environmental issues to be assessed was issued to the PINS in November 2024.
- 2.2.4 The Secretary of State's (SoS) Scoping Opinion was received on 18 December 2024 (**Volume III, Scoping Opinion, Appendix 2.2**). 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.

2.3 Consultation to Date

- 2.3.1 To date the main consultation activities which have taken place are:
- Non-statutory consultation events in Summer and Autumn 2024
 - Meetings with a range of statutory consultees; and
 - EIA Scoping.
- 2.3.2 The website for the Scheme can be found here: <https://drovessolarfarm.co.uk/>.
- 2.3.3 The website has been regularly updated with information about the Scheme and will be utilised throughout the DCO application process as a resource to allow local residents and community groups to easily access and view the information and make comment.



2.4 Cumulative Impacts

- 2.4.1 In accordance with the EIA Regulations, the ES will also need to give consideration to the cumulative impacts of the Scheme, namely the impacts of the Scheme with other significant and relevant developments in the area.
- 2.4.2 The PEIR has undertaken an initial consideration of the potential for the Scheme to have cumulative impacts with other relevant developments nearby. The list of developments considered has been provided in **Volume III, Appendix 2.4**.
- 2.4.3 A final list of projects will be developed with the relevant statutory bodies in due course and included through the statutory consultation stage, which will inform the ES.



3 The Scheme Location and Sensitivities

3.1 The Site

- 3.1.1 The land required to construct and operate the Scheme comprises approximately 825 hectares (ha) for built development, namely PV panels, Substations and energy storage located on land to the north of Swaffham in Norfolk, England.
- 3.1.2 The Site is wholly located within the administrative boundary of Breckland Council (BC) and Norfolk County Council (NCC), who are the host authorities.
- 3.1.3 The Site also comprises Highways Works. This area consists of land that has been identified as potential areas for highways/junction improvement works (e.g. road widening) at the A47/A1065 junction to the south of the Site.
- 3.1.4 The Site is predominately characterised by agricultural fields and tracks, grassland margins, hedgerows and tree belts and scattered trees and woodland. Marl Pits (former pits for clay extraction) are located within the Site boundary.
- 3.1.5 Existing agricultural tracks and a series of three Drovers, namely Fincham Drove, Petticoat Drove and Washpit Drove, (former routes for movement and driving of agricultural livestock) extend within the Site boundary.
- 3.1.6 The residential dwelling of Keeper's Cottage is located within the center of the Site but wholly outside of the Site boundary and not part of the Scheme. There are several agricultural buildings within the Site, utilised for storage, which will be retained in-situ and will continue to be utilised for storage.
- 3.1.7 An existing 400kV overhead line (OHL) and associated transmission pylons pass through the north-eastern part of the Site. Further existing overhead utilities and existing underground utilities exist within the Site.
- 3.1.8 The Site is shown on the Scheme location plan in Figure 3.1 (**Volume II, Chapter 3: Site Boundary and Context, Figure 3.1**).

3.2 Environmental Sensitivities

- 3.2.1 There are no statutory designated heritage assets located within the Site.
- 3.2.2 The Registered Historic Park and Garden of Narford Hall is located approximately 380m west of the Site. There are no Conservation Areas within the Site. The nearest Conservation Area to the Site is South Acre Conservation Area located approximately 146m north of the Site. There are no Listed Buildings within the Site. The nearest Listed Building to the Site is the Grade I Church of St George located approximately 316m north of the Site. The Double moated site of Old Hall, 250m north west of Church Farm Scheduled Monument is located approximately 576m north of the Site.
- 3.2.3 There are no Registered Parks and Gardens within the Site. Narford Hall is the nearest Registered Historic Park and Garden; located approximately 380m west of the Site.



- 3.2.4 The Site does not contain, nor is located immediately adjacent to, any statutory ecological designations. The closest statutory designation is the River Nar Site of Special Scientific Interest (SSSI), which is located approximately 0.5km north of the Site. There are 14 statutory ecological designations located within 25km of the Site.
- 3.2.5 The Site itself does not contain any non-statutory ecological designations, however a single Roadside Nature Reserve (RNR) is located along River Road adjacent to the Site boundary along River Road. A further RNR is located offsite along River Road, approximately 0.05km north of the Site boundary, whilst all other identified non-statutory ecological designations are situated over 0.5km from the Site boundary. There are 15 non-statutory ecological designations located within 2km of the Site.
- 3.2.6 The entirety of the Site is located in Flood Zone 1.
- 3.2.7 Select Environmental Features in relation to the Site are shown on Figure 4.1 (**Volume II, Chapter 4: Reasonable Alternatives and Design Evolution, Figure 4.1**).



4 Scheme Description

4.1 Overview

- 4.1.1 The Scheme comprises the construction, operation, maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating station and associated development including a Battery Energy Storage System (BESS), a Customer Substation and Grid Connection Infrastructure including a new National Grid Substation.
- 4.1.2 The Scheme would allow for the generation and export of over 50MW Alternating Current (AC) of renewable energy, connecting into the National Electricity Transmission System (NETS) overhead line that passes through the Site.
- 4.1.3 The PV panels will convert the solar energy into electricity which will be exported to the National Grid at the point of connection (PoC) for the Scheme via the new National Grid Substation, which is proposed to be located within the Site. The National Grid Substation will be connected to the existing NETS overhead line that passes through the Site via either underground or overhead cables within the Grid Connection Corridor.
- 4.1.4 The operational life of the Scheme is anticipated to be 60 years. Once the Scheme ceases operating, the Scheme will be decommissioned.
- 4.1.5 Full details on the design parameters for the Scheme are presented in **Volume I, Chapter 5: Scheme Description** of the PEIR and are summarised below. A Concept Masterplan is outlined in **Volume III, Appendix 5.1**, identifying the potential areas for the indicative areas for the Solar PV Site, mitigation, enhancement, and/or retained agricultural land/buildings, Customer Substation and Battery Energy Storage System (BESS) and National Grid Substation.
- 4.1.6 The design of the Scheme is an iterative process, based on the various environmental assessments and consultation with statutory and non-statutory consultees.

4.2 Proposed Components of the Scheme

- 4.2.1 The Concept Masterplan (**Volume III, Appendix 5.1**) shows the indicative layout of the Scheme. It has been based on various environmental assessments and consultation with non-statutory and statutory consultees undertaken to date. **Volume I, Chapter 4: Reasonable Alternatives and Design Evolution** of this PEIR outlines the iterative design process for the Scheme.
- 4.2.2 The Scheme will comprise the following principal components as described above and in further detail below:

PV panels

- 4.2.3 Photovoltaic (PV) panels will convert sunlight and daylight into electrical current.
- 4.2.4 There are currently two options for the PV panels which are being considered: Fixed South Facing PV Arrays (Option A shown in Image 4.1) and Single Axis Trackers (Option B shown



in Image 4.2). The use and distribution of these across the Site will be subject to further consideration as the design of the Scheme progresses.

Image 4.1 Option A - Typical Fixed PV Arrays (with indicative Conversion Unit)



Image 4.2 Option B - Typical Single Axis Trackers



- 4.2.5 The PV panels will be attached to Mounting Structures, which form PV Tables and are arranged in rows. The metal frames upon which the PV panels will be mounted will be pile driven or screw mounted into the ground, subject to ground conditions and further environmental assessment.



- 4.2.6 The maximum height of the highest part of Fixed South Facing PV Array will be 3.5m above ground level and the maximum height of the highest part of Single Axis Trackers will be 4.5m above ground level.

Conversion Unit / Inverters

Conversion Unit

- 4.2.7 Conversion Unit is a collective term used for the combination of electrical components including inverters, transformers and switchgear, which are required to manage the electricity generated by the PV panels. These components may be housed ('integrated') together within a container. A container would measure approximately 3.5m (H) x 5m (W) and 15m (L). An alternative option is for the individual electrical components to be housed in standalone cabinets, which are described below.
- 4.2.8 If the Conversion Unit is configured as standalone cabinets, the Conversion Unit compound would be surrounded by 3m high palisade fencing, with integrated gates for access. The compound will be levelled and covered in a layer of gravel, with the equipment mounted on a concrete slab or footings, with a depth of 1m. The containers and / or cabinets are typically externally finished in keeping with the prevailing surrounding environment, often utilising a green or grey painted finish. The containers or cabinets would typically be mounted on adjustable legs on a concrete foundation surrounded by an area of hardstanding.
- 4.2.9 The configuration of equipment within the Conversion Unit compounds will depend on the iterative design process influenced by technical and environmental factors as well as technology available at the time of procurement.

Image 4.3 - Typical Conversion Unit



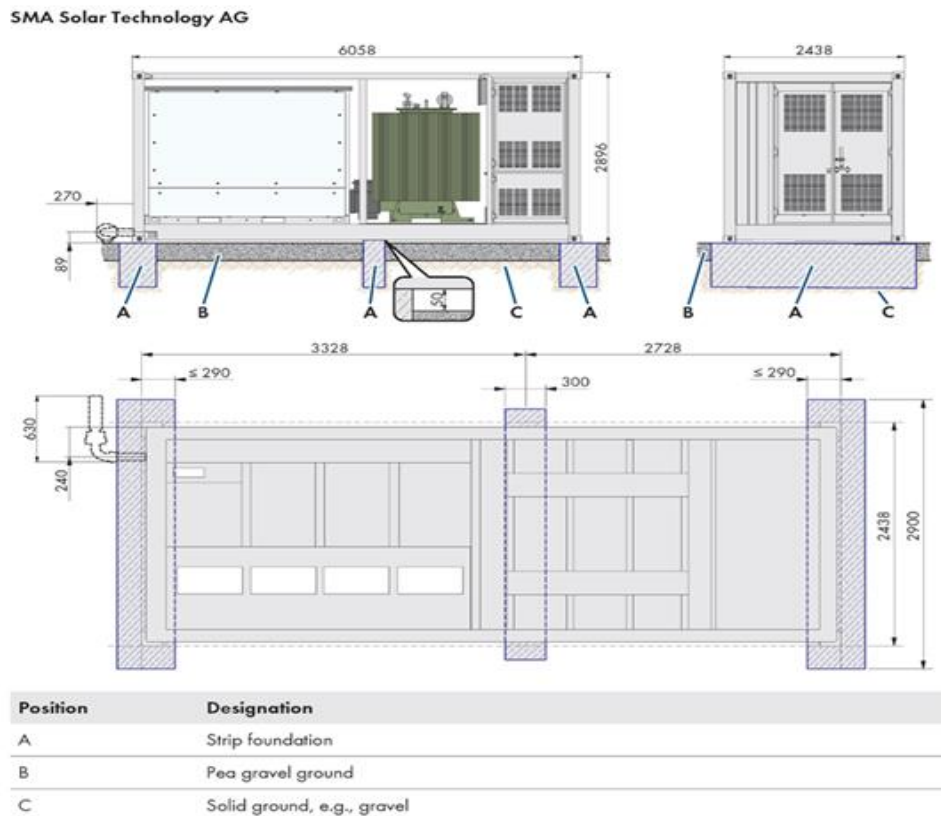
(Image source: <https://www.sma-altenso.com/references/battery-storage-groitzsch/>)



Inverters

- 4.2.10 Inverters are required to convert the Direct Current (DC) electricity collected by the PV panels into Alternating Current (AC) which allows the electricity generated to be exported to the National Grid.
- 4.2.11 Inverters are sized to deal with the level of voltage and intensity, which is output from the PV panels. There are two options for inverters:
- String inverters which are small enough to be mounted underneath or behind the PV panels on the Mounting Structures; or
 - Inverters located within the Conversion Unit which would either be standalone cabinets, or housed ('integrated') within a container.

Image 4.4 Typical Inverter Unit



33kV Sub-distribution Switch Rooms

- 4.2.12 Throughout the Solar PV Site there would be a need to locate 33kV Sub-distribution Switch Rooms to collect the generated power from the Solar PV Arrays, and deliver it to the Customer Substation at the required voltage. The 33kV Sub-distribution Switch Rooms collect the smaller voltage cables and convert to a larger 33kV cable.
- 4.2.13 The 33kV Sub-distribution Switch Rooms would be 11m by 3.5m with a height of 4m. The number and location of which will be set out within the ES following further design evolution.



Substations

- 4.2.14 There are two different types of substations required across the Scheme. These comprise the Customer Substation, and the National Grid Substation. Further details of which are set out in the sub headings below.

Customer Substation and Ancillary Buildings

- 4.2.15 There will be one Customer Substation located near the PoC which for the purposes of this PEIR could be located anywhere within fields 24, 26, 27, 33 or 35, as shown on the Concept Masterplan (**Volume III, Appendix 5.1**). The location of the Customer Substation within these fields will be determined through further assessment and consultation.
- 4.2.16 The Customer Substation will comprise electrical infrastructure such as the transformers, switchgear and metering equipment required to facilitate the export of electricity from the Scheme to the National Grid. The Customer Substation is also expected to include Ancillary Buildings which will include office space and welfare facilities as well as operational monitoring and maintenance equipment. The switchgear within the Customer Substation will either be air insulated switchgear or gas insulated switchgear substations. An example of an air insulated substation is shown in **Image 4.5**.
- 4.2.17 The indicative size of the Customer Substation compound is approximately 4ha, with an approximate height of 13m that allows for the associated electrical infrastructure, control buildings and office/storage buildings.

Image 4.5 Air Insulated Substation





National Grid Substation and Grid Connection Infrastructure

- 4.2.18 A new National Grid Substation will be required to connect the Customer Substation to the National Grid. The National Grid Substation will monitor and manage the export and import of electricity between the National Grid and the Scheme and will be operated by National Grid Electricity Transmission plc (NGET).
- 4.2.19 The indicative zone for the National Grid Substation is shown as fields 27 – 33 on the Concept Masterplan (**Volume III, Appendix 5.1**).
- 4.2.20 The National Grid Substation is assumed to have a maximum height of 13m and a footprint of approximately 4ha. The National Grid Substation is expected to include Ancillary Buildings and car parking. The National Grid Substation would be enclosed by a palisade fence in line with National Grid standards.
- 4.2.21 Grid Connection Infrastructure will be required between the National Grid Substation and the existing 400kV overhead lines. The Grid Connection Infrastructure could include underground and/or overhead lines including construction of new pylons and works to existing pylons between the National Grid Substation and the PoC.
- 4.2.22 The Applicant is currently engaging with NGET regarding the Grid Connection Infrastructure. For the purposes of this PEIR, two options are currently being considered. The details of the National Grid Substation and Grid Connection Infrastructure will be refined throughout the development of the Scheme through ongoing engagement with NGET and will be set out within the ES.

Electricity Export and Point of Connection (PoC) to National Grid

- 4.2.23 The electricity generated by the Scheme is expected to be exported via a 400kV connection between the Customer Substation and the Point of Connection via the National Grid Substation. The Grid Connection Corridor will include Grid Connection Infrastructure. The alignment and route of the Grid Connection Corridor will be dependent on the location of the Customer Substation and National Grid Substation. The route will be refined through the EIA and ongoing engagement with NGET.

Cable Circuits

- 4.2.24 Low voltage distribution cabling between Solar PV panels and the Conversion Units will typically be fixed to the Mounting Structure (above ground), and then underground between Mounting Structures and the Conversion Units. High Voltage cables are required between the Conversion Units, 33kV Sub-distribution Switch Rooms, BESS and the Customer Substation. The high voltage cables will be routed alongside the Access tracks and / or use existing gaps in hedgerows where practicable to minimize hedgerow loss.
- 4.2.25 Communication cables will be required throughout the Solar PV Site to allow for monitoring during operation. The communication cables would typically be installed within the same trench and alongside the electrical cables.

The Battery Energy Storage System (BESS)

- 4.2.26 For the purposes of this PEIR the BESS is proposed to be located anywhere within fields 24, 26, 27, 33 or 35, as shown on the Concept Masterplan (**Volume III, Appendix 5.1**). The



location of the BESS within these fields will be determined through further assessment and consultation.

- 4.2.27 The BESS compound is anticipated to be up to 10.5ha, the precise size and number of individual battery storage containers will depend upon the level of power capacity and duration of energy storage which will be refined for the ES.
- 4.2.28 The BESS is designed to provide peak generation and grid balancing services to the National Grid. It will allow excess electricity generated from the PV panels to be stored in the batteries and exported to the grid when required. Excess energy from the grid can also be imported to the batteries. The BESS will therefore provide flexibility and enhance grid reliability.
- 4.2.29 The BESS is likely to comprise batteries which would be housed in containers, with each container typically measuring 16 x 3m and 3.2m in height. The battery containers will be separated from each other and surrounding infrastructure by a minimum distance that complies with any relevant National Fire Chief's Council (NFCC) or the National Fire Protection Association (NFPA) guidelines at the time of detailed design.
- 4.2.30 The containers are typically externally finished in keeping with the prevailing surrounding environment, often utilising a green or grey painted finish. The BESS compound would be surrounded by 3m high palisade fencing, with integrated gates for access.
- 4.2.31 The BESS Compound would also include other apparatus such as water storage and / or fire suppression systems, Access tracks and hard standing areas.
- 4.2.32 The preferred locations for the BESS for the purposes of this PEIR are shown on the Concept Masterplan (**Volume I, Appendix 5.1**). Ongoing technical studies will determine which location within the Site is most appropriate for the BESS. Image 5.7 shows an example of a BESS arrangement with associated infrastructure.

Image 4.6 Typical BESS Units





Green Infrastructure

- 4.2.33 The existing hedgerows, vegetation, woodland, trees, ditches, ponds, Marl pits and field margins will be retained within the layout of the Scheme where practicable, with the exception of removals and/or crossings required for new access tracks, perimeter fencing and cable circuits. Access points from the highway and access tracks will be designed to use existing agricultural gateways/tracks between the fields where practicable and the width of any new accesses will be kept to a minimum where practicable.
- 4.2.34 The following minimum offsets/buffers from existing landscape features have been embedded within the design of the Scheme, with the exception of where Access tracks, perimeter fencing and/or cable routes are required to cross an existing feature.

Table 4.1 Minimum offsets/buffers from existing landscape features

Landscape feature	Buffer/Offset
Hedgerows	8m
Hedgerows – with trees	10m
Woodland (Non-ancient)	15m
Ditches	6m
Badger setts	30m
(Badger sett – outlier)	20m
Individual trees and groups of trees	10m
Ponds	10m
Non-Statutory Designated sites and Local Wildlife sites	10m
Veteran and Ancient trees	15x width of tree stem diameter
Curtilage of residential properties	Bespoke Design Response based on Residential Visual Amenity Assessment
Public Rights of Way (PRoWs)	15m

- 4.2.35 These offsets/buffers will be used to deliver a combination of embedded mitigation and enhancement in the form of hedgerow planting and/or grass/wildflower planting. The buffers/offsets will be a minimum and for example may be increased to deliver further mitigation or enhancements and/or respond to root protection areas where required.



Additional components

4.2.36 In addition to the above the following components will be part of the Scheme:

- Ancillary Infrastructure including enclosure (fencing), security and lighting, drainage, earthworks, access, as required
- Access tracks
- Highway Works
- Cable Route Corridor – underground cabling connecting the Conversion Units to the BESS and the Customer Substation
- Grid Connection Corridor - cabling connecting the Customer Substation to the Point of Connection, which may be underground or overhead lines
- Proposed Mitigation and Enhancement Areas
- Construction Hub; and
- Temporary Construction compounds.

4.3 Construction, Operation and Decommissioning Phases

Construction Phase

4.3.1 The Construction Phase is anticipated to take place up to 24 months. The final programme will be dependent on the detailed layout design and potential environmental constraints on the timing of construction activities, and will be detailed in the ES. However, the Scheme is anticipated to energise in Q4 2033 or as early as National Grid are able to offer, subject to completion of construction. Based on Q3 2033 energisation, it is anticipated that the earliest the Construction Phase would commence would be Q3 2031. There is likely to be a pre-construction period preceding the Construction Phase of approximately six months (Q1 and Q2 2031) to allow site preparation works.

4.3.2 The final programme will be dependent on the detailed layout design and potential environmental constraints on the timing of construction activities, and will be detailed in the ES.

4.3.3 There will be Temporary Construction compounds required across the Site. The Temporary Construction compounds will comprise:

- Temporary portacabins for construction workers (the dimension of the portacabins would vary and the maximum size for individual units is expected to be 10m by 3m with a typical maximum height of 3m);
- Perimeter security fencing with a typical maximum height of 3m;
- Parking area for construction and workers vehicles;
- Secure compound for storage;
- Temporary hard standing;



- Wheel washing facilities;
- Storage bins for recyclables and other waste; and
- Lighting will be required during construction periods but will be temporary in nature and normal working hours will be adhered to except in specified circumstances.

4.3.4 There will be Abnormal Indivisible Loads (AIL), Heavy Goods Vehicles (HGV) and Light Goods Vehicle (LGV) movements associated with deliveries and construction worker arrivals and departures. Typical construction vehicles will include excavators, ramming machines, cable layers, low loaders, crane and waste vehicles, trenchers, telehandlers, forklift trucks and tractors/trailers. HGV and LGV movements have been assessed as part of this PEIR and will be further assessed to inform the ES.

4.3.5 Construction activities are likely to be carried out Monday to Friday 07:00-18:00 and between 08:00 and 13:30 on Saturdays. However, some activities may be required outside of these times (such as the delivery of abnormal loads, concrete pours for foundations, nighttime working for cable construction works in public highways or HDD activities). Where practicable, construction deliveries will be coordinated to avoid HGV movements during the traditional AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00).

Construction Management

4.3.6 An outline Construction Environmental Management Plan (oCEMP) will be prepared in support of the ES, which will set out the mitigation measures identified through the preliminary EIA assessments that form this PEIR. The oCEMP will be submitted as part of the DCO Application.

4.3.7 Prior to the commencement of any phase of development a Construction Environmental Management Plan (CEMP) will be submitted to and approved by the relevant planning authority, and this will be secured by a requirement in the DCO Application. The CEMP for each phase will be in accordance with the oCEMP. This will ensure the potential construction impacts are minimised.

4.3.8 An outline Construction Traffic Management Plan (oCTMP) including details on construction logistics and construction worker travel, will be prepared in support of the ES. The oCTMP will include information to guide the delivery of materials, plant, equipment and staff during the Construction Phase. The oCTMP will be submitted as part of the DCO Application.

4.3.9 Prior to the commencement of any phase of development a Construction Traffic Management Plan (CTMP) will be submitted to and approved by the relevant planning authority, and this will be secured by a requirement in the DCO. The CTMP for each phase will be in accordance with the oCTMP. This will ensure the potential construction impacts are minimised.

Operational Phase (including Maintenance and Replacement)

4.3.10 The Operational Phase of the Scheme is proposed to be up to 60 years. During the Operational Phase of the Scheme, onsite activities would include routine servicing, maintenance activities, and the replacement of equipment such as PV panels and BESS as and when required, as well as management of vegetation.

Operational Management



- 4.3.11 Following construction, traffic associated with the operation and maintenance of the Scheme will be infrequent and result in limited vehicle movements as no on-site staff will be required to operate the Scheme on a day-to-day basis. Movement within the Site will be by way of quad bike or small, farm utility vehicle. Those arriving to undertake maintenance would generally be expected to travel by car, appropriate 4x4 type vehicle or light van. Suitable access will be retained from the highway to enable ongoing maintenance to take place.
- 4.3.12 The land underneath and around the PV Tables would be sown and managed through a combination of sheep grazing, hay/silage production and wildflower grassland, in order to manage vegetation during the Operational Phase of the Scheme.
- 4.3.13 An outline Landscape and Ecological Management Plan (oLEMP) will be prepared in support of the ES. The management of the landscape and ecological features will be undertaken in accordance with a detailed Landscape and Ecological Management Plan (LEMP) which will be secured by a requirement in the DCO Application.
- 4.3.14 At times during operation, additional staff will be required to attend the Site when necessary for replacement of solar and BESS infrastructure. An outline Operational Traffic Management Plan (oOTMP) will be prepared in support of the ES, which will confirm the likely operational traffic flows.
- 4.3.15 An outline Operational Environmental Management Plan (oOEMP) will be prepared in support of the ES, which will include control measures to ensure no significant impacts will arise during the maintenance and replacement activities. An Operational Environmental Management Plan (OEMP) will be secured by a requirement in the DCO Application.

Replacement Activities

- 4.3.16 The replacement programme for the Scheme is expected to be as follows:
- That the operational life of PV Panels is 40 years. The operational replacement of PV panels is anticipated to comprise:
 - Replacement of individual defective and broken PV Panels on an ad hoc basis.
 - Planned replacement of all PV panels once during the Operational Phase. The PV panels are anticipated to be replaced over a 12 to 24 month period.
 - It is expected that the BESS could be replaced up to five times during the operational phase. The operational replacement of BESS will be assessed in the ES; however, the effects are not anticipated to be greater than those associated with PV panel replacement.
- 4.3.17 Further, the programme for maintenance and the replacement of components across the Scheme should naturally be staged such that this is not concurrent across all the Site.
- 4.3.18 The ES will include further details of the maintenance and replacement activities, and appropriate controls will be developed as part of the DCO. An OEMP would include control measures to ensure no significant impacts would arise during the maintenance and replacement activities.

Decommissioning Phase

- 4.3.19 Decommissioning is anticipated to take approximately 12 to 24 months.



- 4.3.20 During the Decommissioning Phase, all the solar infrastructure including PV panels, Mounting Structures, above ground cabling, Conversion Units, 33kV Sub-distribution Switch Rooms, fencing, Ancillary Infrastructure, BESS and the Customer Substation would be removed and recycled or disposed of in accordance with good practice following the waste hierarchy, with materials being reused or recycled whenever practicable. All waste will be disposed of in accordance with the legislation at the time of decommissioning.
- 4.3.21 It is assumed that the National Grid Substation, underground cables, and the pylons and overhead lines would remain in-situ.
- 4.3.22 Any requirement to leave the access tracks in-situ would be discussed and agreed with the landowner at the time of decommissioning and consented separately.

Decommissioning Management

- 4.3.23 An outline Decommissioning Environmental Management Plan (oDEMP) and outline Decommissioning Traffic Management Plan (oDTMP) will be prepared in support of the ES, which will set out the mitigation measures identified through the preliminary EIA assessments that form this PEIR. Prior to the commencement of any phase of decommissioning a DEMP and a DTMP will be submitted to and approved by the relevant planning authority. The oDEMP and oDTMP will be submitted as part of the DCO Application and DEMP and DTMP will be secured by a requirement in the DCO Application.
- 4.3.24 Following removal of the PV panels, Customer Substation, Conversion Units, 33kV Sub-distribution Switch Rooms, fencing, BESS and other Ancillary Infrastructure, the Site would be reinstated to its original use as far as practicable and in accordance with a DEMP.

Waste

- 4.3.25 Waste will be generated during all phases of the Scheme. Solid waste materials generated during construction and decommissioning will be segregated and stored on the Site prior to transport to an approved, licensed third party recycling facility or, if it cannot be recycled, an authorised facility for recovery or disposal. Management of waste will be addressed further within the outline Site Waste Management Plan ('oSWMP') to be submitted with the DCO Application. Waste arisings will be assessed as appropriate within the relevant chapters of the ES.



5 Alternatives and Design Evolution

5.1 Introduction

- 5.1.1 **Volume I, Chapter 4: Alternatives and Design Evolution** of the PEIR provides an overview of the site selection process that the Applicant has gone through, how the design has evolved and the alternatives that have been considered, to date.

5.2 Scale of the Scheme

- 5.2.1 During discussions with National Grid in 2022, the Applicant discussed grid capacity within the East Anglia region via a connection directly into the National Electricity Transmission System (NETS) that would require a new National Grid Substation. A suitable grid connection at King's Lynn B was not viable due to insufficient physical space to connect any project of any size at that location; however, there was capacity along the overhead line (OHL). Connecting into the OHL allowed for the least constrained land to be used for the Scheme. Due to the availability of a new Point of Connection (PoC) into the existing overhead line between Walpole and Necton, the Applicant made a grid connection application to National Grid (now NESO) for a connection. National Grid (now NESO) made an offer for 500MW.
- 5.2.2 The Site is located immediately adjacent to and underneath the existing overhead line between Walpole and Necton. The Applicant is proposing to include the PoC within the Site.
- 5.2.3 The DCO Application will include a Statement of Need addressing the need for large-scale solar assets.

5.3 Site Evaluation

- 5.3.1 There is no standard methodology for selecting sites for solar energy generating stations. However, as the National Policy Statement for renewable energy infrastructure (NPS EN-3) recognises, a viable grid connection is an essential material consideration for proceeding with development and is instrumental in defining the search area.
- 5.3.2 During ongoing engagement, the Applicant and National Grid came to an agreement for a connection offer for 500MW into the existing overhead line between Walpole and Necton. At the same time as National Grid's offer for a 500MW connection, a land agent indicated to the Applicant that the landowner was willing to put forward the proposed Site for a solar farm development.
- 5.3.3 A review of planning constraints along and near the overhead line identified the land where The Drovers is proposed to be located as particularly good from a desktop planning constraints review, notably appearing to be a small area of predominantly grade 4 land surrounded by the more typical higher grade land in the area. The Applicant then engaged with the landowner to agree on the most appropriate land within their estate on which to propose the development.
- 5.3.4 The Site fits the factors explored by the Applicant and set out in NPS EN-3, being without many constraints and with the benefit of potential viable connection point to be included in the Site. The Applicant typically considers factors including, but not limited to, a large enough site



area, topography, access and the lack of designations. Having experience and understanding of the surrounding area and requirements for utility scale solar, it was clear to the Applicant that the Site met their environmental site selection criteria. The Applicant, therefore, had identified a suitable site and concluded their site evaluation process.

5.3.5 A Site Evaluation Report will be submitted with the DCO Application. The Site's suitability for solar development is due to the lack of landscape and environmental statutory designations, limited residential receptors and accessibility from a major highway network.

5.3.6 NPS EN-3 relates specifically to Solar Photovoltaic generation and list factors influencing site selection. The proposed Site's initial evaluation was in accordance with these key site selection factors outlined in NPS EN-3. The site evaluation involved a balance of these factors, including:

- **Network connection** – Proximity to the point of connection
- **Irradiance and site topography** – Preference for south-facing aspect and/or flatter topography
- **Proximity of site to dwellings** – Avoidance of close proximity to residential dwellings or where it would not be possible to mitigate visual amenity and glint and glare appropriately
- **Environmental considerations**— Avoidance of environmental constraints, such as those containing Site of Special Scientific Interest (SSSIs), Nature Reserves, Ramsar Sites, Special Area of Conservation (SAC), and Special Protection Areas (SPA)
- **Agricultural land classification and land type** – Minimise the impact on the best and most versatile agricultural land
- **Accessibility** – Suitability of the access routes both during construction and operation

5.4 Alternatives Considered

Alternative Generation Technologies

5.4.1 The Applicant is a leading developer of utility-scale solar projects and battery storage systems. Alternative types of low-carbon forms of power generation such as onshore wind have been discounted as the Applicant is a developer of renewable energy projects, with a focus and expertise on utility-scale solar projects and battery storage systems. Notwithstanding this, it is not considered that the Site would be suitable for other forms of renewable generation at the same scale as the Scheme.

5.4.2 Tidal power and offshore wind were not considered viable options due to the terrestrial location of the Site. It is understood there are no and/or limited local opportunities to source hydroelectric power from rivers.

5.4.3 In line with NPS EN-3, the Applicant has sought to achieve co-location with battery energy storage as part of the Scheme.

5.4.4 The Scheme will consist of the infrastructure as described above in **Volume I, Chapter 5: Scheme Description** and in further detail below.



5.5 Design Evolution

Introduction

- 5.5.1 The design and layout, including extent, of the Scheme for the purpose of the PEIR has evolved iteratively since initial site selection in response to the ongoing environmental assessment process, the Draft Project Level Design Principles (**Volume III, Appendix 5.3**), engagement with stakeholders and consultants and feedback from the initial non-statutory consultation (Co:Design process) for the Scheme. The continuous site analysis, both contextual and on-site, has directly informed the design and layout.
- 5.5.2 The layout of the Scheme will continue to be refined as the Applicant progresses the ES and DCO Application, incorporating ongoing consultation feedback and engagement with stakeholders to ensure a well-integrated and sustainable design. Initial engagement included workshops, discussions with landowners and nearby properties, and discussions with statutory bodies.
- 5.5.3 With the location of the Site identified, the layout presented within the PEIR has been informed by Co:Design, EIA Scoping, and a better understanding of local environmental sensitivities, through ongoing baseline and assessment work, as presented within the PEIR.
- 5.5.4 The ongoing baseline and assessment work has been undertaken by the Applicant's professional environmental specialists, and has informed the extents of the 'potential area for solar and associated development' that is being consulted upon as part of the Statutory Consultation and forms the basis of the assessments within the PEIR.



6 Landscape and Visual

6.1 Introduction

6.1.1 **Volume I, Chapter 6: Landscape and Visual** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to landscape and visual receptors. Landscape effects relate to changes to the landscape as a resource, including physical changes to the fabric or individual elements of the landscape, its aesthetic or perceptual qualities, and landscape character. Visual effects relate to the potential for there to be changes to the composition of existing views, as experienced by people.

6.2 Baseline Conditions and Methodology

6.2.1 The Site comprises several agricultural fields of varying geometries, most of which are delineated by existing mature hedgerows and hedgerow trees. There are larger woodland blocks situated within or close to the Site, which form part of the wider landscape fabric. These are predominantly woodland plantations.

6.2.2 The Site is located to the north of the A47 and settlement of Swaffham. A number of smaller villages and hamlets are situated within the wider context of the Site, such as West Acre, South Acre, Castle Acre, Narford and Great Palgrave. An extent of the Site runs along West Acre Road and Narford Lane to the west before tracking eastwards along Three Sisters and Twenty Acre Plantation. The eastern extent of the Site largely aligns the A1065, with an additional area of agricultural land included within the Site to the east of the junction between the A1065 and South Acre Road.

6.2.3 Visibility towards the Site from its local context to the west and south is generally well contained due to a combination of the local plateau and valley topography, the presence of scattered woodland blocks within and close to the Site and the well vegetated nature of local lanes and highways; all of which serve to filter views and restrict direct visibility into the more central site areas. Along the periphery of the Site there are direct views towards existing development within the immediate context of the Site such as highway infrastructure and associated passing traffic along the A1065, to the east. There is sporadic isolated development close to the Site elsewhere, development at Walnut Grove to the west and development within South Acre to the north.

6.2.4 Within the centre of the Site, there is a relatively high degree of visual enclosure between the internal field parcels, predominantly due to the presence of existing mature woodland, hedgerow and hedgerow trees within the Site. The southern Site area also exhibits some degree of visual enclosure, south of Round Covert. The northern Site area is also generally visually well contained upon the plateau landscape due to the plantation woodland and taller mature hedgerows that align field boundaries, PRoW and various droves within the Site. The plantation woodland shelter belts situated within the northern Site area form an effective visual screen and restrict intervisibility between the Site and the valley landscape to the north.

6.2.5 As such, intervisibility between the plateau landscape within the Site and existing settlements to the north of the Site, within the Nar Valley, such as Castle Acre, West Acre and South Acre is generally limited.



- 6.2.6 For the purposes of landscape and visual assessment, the Study Area includes the Site itself and 3km from its boundary. No national or locally designated landscapes are situated within the Site or Study Area.

Landscape Character

- 6.2.7 The Landscape and Visual Impact Assessment (LVIA) has considered the National Landscape Character Area within which the Scheme is located, as well as the Regional and Local Landscape Character Type and Landscape Character Areas (LCA) in which the Sites are situated. Relevant Assessments are outlined below:

- **The Natural England National Character Areas Assessment: NCA85 The Brecks (2013)** - provides a broad context at a national level, highlighting the distinctive features of The Brecks. The Site is situated within National Character Area (NCA): The Brecks. Due to the scale of the NCA and the presence of more detailed character areas at a local level, effects on this NCA are not assessed.
- **The Norfolk and Suffolk Brecks Landscape Character Assessment (2013)** - identifies and describes the Landscape Character on a regional scale. Due to the scale of the regional character area and the presence of more detailed character areas at a local level, effects on this regional character area are not assessed.
- **The Breckland Landscape and Settlement Character Assessment (2022)** - describes and analyses the character of Breckland's landscape and settlements, drawing upon relevant information from older landscape character assessments, as well as expanding the assessment to cover existing settlements within the district.
- **The Breckland Landscape Character Assessment (2007)** - is the primary document that assesses landscape character within the district. This assessment covers the Site and large parts of the Study Area, to the south, east and northeast.
- **The King's Lynn and West Norfolk Borough Landscape Character Assessment (2007)** - includes LCAs within the wider Study Area, outside of the Site, which have been characterised.

- 6.2.8 The assessment methodology follows the Guidelines for Landscape and Visual Impact Assessment Third Edition (2013). The methodology that underpins the landscape and visual impact assessment process is tailored to be proportionate to the assessment and nature and location of the Scheme. The assessment of landscape character and visual amenity is both a subjective and objective process. Whilst subjectivity can never be removed, by following a systematic and robust step by step process, rational and transparent conclusions can be drawn.

6.3 Mitigation Measures

- 6.3.1 The avoidance of effects is always challenging when there is a physical change to land use. However, the landscape and visual sensitivities of the Site have influenced masterplanning of the Scheme through an iterative design process. Thus, the Site incorporates a degree of integral (or embedded) mitigation measures designed to avoid or reduce potential landscape and visual effects.



6.3.2 The following elements comprise key design landscape and visual mitigation measures embedded into the design of the Scheme:

- Retention of the existing landscape fabric within and around the boundaries of the Site;
- Offset and buffering of the Scheme with new hedgerow and tree planting;
- Retention, gapping up and enhancement of existing hedgerow within the Site;
- Setting back the Scheme from key landscape features within and adjacent to the Site, such as trees, hedgerow and woodland; and
- Recreational enhancements.

Construction and Decommissioning Phase Mitigation

6.3.3 Effects during the Construction and Decommissioning Phases are likely to be perceived as temporary and adverse in nature due to the intermittent presence of construction/decommissioning activities including Site clearance, vegetation removal, traffic movements, ground engineering, stockpiling, cranes, lifting equipment and temporary lighting, etc. Construction and demolition works will be undertaken in accordance with a CEMP which will be secured as a requirement of the DCO. The CEMP will be agreed prior to construction works commencing on Site.

6.3.4 The CEMP would include the following but not limited to mitigation measures in relation to landscape and visual effects:

- A pre-construction Tree Survey and Arboricultural Method Statement (AMS);
- The use of visual screening, such as hoardings;
- Ensuring a tidy and neat working environment and covering stockpiles;
- Temporary construction lighting;

6.3.5 Prior to the commencement of any phase of decommissioning a DEMP and a DTMP will be submitted to and approved by the relevant Local Planning Authority (LPA) and secured by a requirement in the DCO Application.

6.4 Assessment of Likely Significant Effects

6.4.1 The preliminary assessment of effects within this section considers the potential effects resulting from the reasonable worst-case scenario following the implementation of embedded mitigation.

Construction and Decommissioning Phase

6.4.2 Potential impacts during the Construction and Decommissioning Phases might include the visual effect of construction/decommissioning vehicles and traffic, moving in the Site and in its surrounding areas; alongside other components typical of construction/decommissioning activities, including the presence of workers' accommodation, stockpiles of materials, lighting of specific areas, such as construction compounds; and the gradual modification of landscape character as part of a phased programme of works.



- 6.4.3 Effects during the Construction and Decommissioning Phases are considered to be temporary and short term and would be of notably lower magnitude than those during the Operation Phase.

Landscape effects

- 6.4.4 During the Construction and Decommissioning Phases of the Scheme it is considered the worst-case scenario for effects on the wider LCA of D1: Swaffham Heath LCA, E6 North Pickenham Plateau LCA, B7: River Nar Tributary Farmland LCA, F1 River Nar Valley LCA, G3 Gayton and East Winch LCA and I9 Little Massingham and Castle Acre LCA as a whole will be **moderate adverse** landscape effects. These effects are considered **not significant**.

- 6.4.5 Within the extent of the Site, it is considered the worst-case scenario for effects during the Construction and Decommissioning Phases upon the LCA of D1: Swaffham Heath LCA, E6 North Pickenham Plateau LCA and B7: River Nar Tributary Farmland LCA will be **moderate adverse** in nature. These effects are considered to be **significant**.

Visual effects

- 6.4.6 During the Construction and Decommissioning Phases of the Scheme, it is considered the worst-case scenario for effects will be **moderate/major-moderate adverse** visual effects on some visual receptor groups located closer to the Site, those being VRG1: Central Site Area, VRG2: North-Eastern Site Area and VRG3: Nar Valley Southern Slope and Settlement Edge of South Acre, which is considered **significant**. For visual receptor groups, those being VRG4: Great Palgrave and Little Palgrave, VRG5: Castle Acre, VRG6: West Acre and Nar Valley Northern Slope and VRG7: Agricultural land immediately south and west of the Site. located further away, the effects are **not significant**.

- 6.4.7 Some long distance walking routes, that of The Peddars Way and Norfolk Coastal Path, and regional cycling routes, that of the Rebellion Way Cycle Route, have been identified as experiencing **moderate/major-moderate adverse** visual effects, which is considered **significant**. However, The Nar Valley Way is not assessed as experiencing a significant effect.

Operational Phase

- 6.4.8 The assessment of Operational Phase effects in **Volume I, Chapter 6: Landscape and Visual** has been presented for both the Medium Term (5-10 years) and the Long Term (10+ years).

Landscape effects – Medium term

- 6.4.9 During the Operational Phase of the Scheme, it is considered the worst-case scenario for effects on the wider LCA of D1: Swaffham Heath LCA, E6 North Pickenham Plateau LCA, B7: River Nar Tributary Farmland LCA, F1 River Nar Valley LCA, G3 Gayton and East Winch LCA and I9 Little Massingham and Castle Acre LCA as a whole will be **moderate adverse**, these effects equate to **not significant**.

- 6.4.10 Within the extent of the Site, it is considered the worst-case scenario for effects during the Operational Phase upon LCA of D1: Swaffham Heath LCA and E6 North Pickenham Plateau LCA will be **major-moderate/moderate adverse**. This effect is considered **significant**.



However, B7: River Nar Tributary Farmland LCA is not assessed as experiencing a significant effect.

Visual effects – Medium term

- 6.4.11 During the Operation Phase of the Scheme it is considered the worst-case scenario for effects will be **major-moderate/major/moderate adverse significant** visual effects on some of visual receptor groups located closer to the Site, those being VRG1: Central Site Area, VRG2: North-Eastern Site Area and VRG3: Nar Valley Southern Slope and Settlement Edge of South Acre which is considered **significant**. For visual receptor groups located further away, those of VRG4: Great Palgrave and Little Palgrave, VRG5: Castle Acre, VRG6: West Acre and Nar Valley Northern Slope and VRG7: Agricultural land immediately south and west of the Site the effects are **not significant**.
- 6.4.12 Some long-distance walking routes (The Peddars Way and Norfolk Coastal Path - over a limited extent only, within and up to 300m from the Site) and regional cycling routes (Rebellion Way Cycle Route - over a limited extent only, within the Site) have been assessed as experiencing **moderate adverse significant effects**, which is considered **significant**. However, The Nar Valley Way is not assessed as experiencing a significant effect.

Landscape effects – Long term

- 6.4.13 During the Operational Phase of the Scheme it is considered the worst-case scenario for effects on the wider LCAs of D1: Swaffham Heath LCA, E6: North Pickenham Plateau LCA, B7: River Nar Tributary Farmland LCA, F1 River Nar Valley LCA, G3 Gayton and East Winch LCA and I9 Little Massingham and Castle Acre LCA will be **moderate/moderate-slight adverse** which is considered **not significant**.
- 6.4.14 Within the extent of the Site, it is considered the worst-case scenario for effects during the Operational Phase upon LCAs of D1: Swaffham Heath LCA and E6 North Pickenham Plateau LCA will be major-moderate to moderate adverse significant. This effect is considered significant. However, B7: River Nar Tributary Farmland LCA is not assessed as experiencing a significant effect.

Visual effects –Long term

- 6.4.15 During the Operational Phase of the Scheme it is considered the worst-case scenario for effects on one of the visual receptor groups, this being VRG2: North-Eastern Site Area will be **major adverse**, thereby **significant** visual effects have been identified. However, all other visual receptor groups are assessed as not experiencing significant effects.
- 6.4.16 Some long-distance walking routes (The Peddars Way and Norfolk Coastal Path - Over a limited extent only. Within and up to 300m from the Site) and regional cycling routes (Rebellion Way Cycle Route. Over a limited extent only. Within the Site) have been assessed as experiencing **moderate** and **moderate-slight adverse significant effects**, which is considered **not significant**. However, The Nar Valley Way is not assessed as experiencing a significant effect.



6.5 Additional Mitigation

6.5.1 At this PEIR stage, no additional mitigation to the embedded mitigation in **Volume I, Chapter 6: Landscape and Visual** has been identified.

6.5.2 There is an opportunity for the inclusion of further design measures to be included within the refined Scheme that will be assessed within the ES. These further design and mitigation measures would serve to reduce potentially adverse effects. These design measures could include:

- The consolidation of new development associated with larger elements of the Scheme such as the Customer Substation, National Grid Substation and Grid Connection Infrastructure
- The inclusion of additional areas of native tree and shrub planting as the green infrastructure strategy progresses, alongside the existing landscape features within the Site; and
- Small scale land reprofiling to increase the higher level screening effect of new tree and hedgerow planting in proximity to larger elements of the Scheme, responding to nearby visual receptors with the objective being to reduce potentially adverse effects over the medium and long term.

6.6 Residual Effects

6.6.1 In the absence of any additional mitigation, the residual effects are the same as the likely significant effects set out above.



7 Ecology and Biodiversity

7.1 Introduction

- 7.1.1 **Volume I, Chapter: 7 Ecology and Biodiversity** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to ecology and biodiversity.

7.2 Baseline Conditions and Methodology

Survey Work

- 7.2.1.1 To inform the assessment of ecological impacts associated with the Scheme, and confirm the existing baseline conditions, ecological survey work has been undertaken during 2024 and remains ongoing during 2025, to establish the baseline conditions present.
- 7.2.2 The ecological baseline for the Scheme has been identified through desk-based studies and field surveys.
- 7.2.3 To compile background information on the Site and its immediate surroundings, desktop information has been obtained and reviewed, including information and records from Norfolk Biodiversity Information Service (NBIS), the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, the Woodland Trust database and other available information sources. In particular, the presence of non-statutory ecological designations and records of protected and notable species within 2km of the Site have been obtained in line with best practice, with a Study Area of 25km for statutory designations of international importance and 5km Study Area for Statutory Designations of national importance from the Site.
- 7.2.4 A comprehensive suite of ecological surveys have been undertaken at the Site during 2024, full details of which are set out within the accompanying Baseline Ecological Appraisal (**Volume III, Appendix 7.2**), whilst a number of further surveys are ongoing and programmed during 2025 in order to fully inform the ES and ensure that the information prepared remains appropriately up to date and accurate to inform the submission. Analysis and reporting of surveys undertaken up to March 2025 is in progress and final results will be incorporated once complete in order to fully inform the ES. Survey work completed to the date of March 2025 includes habitat and general faunal survey, bats, badger, breeding birds, great crested newt, wintering birds. Habitats have been assessed for other notable species groups, including reptiles, invertebrates and small mammals.
- 7.2.5 Where available, the survey results have been used to inform the initial consideration of constraints and design in relation to the Scheme, along with initial consideration of likely significant effects and potential mitigation and enhancement measures to be incorporated. Where survey information remains to be completed, or further information to be obtained during 2025, reasonable assumptions have been made at this stage based on reasonable worst case assumptions using professional judgement in order to inform the current progress, with ongoing survey results and associated information to be incorporated once these become available in order to inform the EIA process. Further outstanding information will be presented and assessed at the ES stage.



- 7.2.6 The Site is dominated by large, intensively managed arable fields, with areas under rotation for pig grazing. Field boundary features include hedgerows, tree lines and scattered trees along with a number of additional habitats. A full description of the individual habitats and ecological features within the Site is set out within the Baseline Ecological Survey Report (**Volume III, Appendix 7.2**).
- 7.2.7 The Site does not contain, nor is it located immediately adjacent to, any statutory ecological designations, there are 14 statutory ecological designations within 25km of the Site. The closest of which is the River Nar Site of Special Scientific Interest (SSSI), which is located approximately 0.5km north of the Site and notified on the basis of the habitats and species it supports, including terrestrial and wetland habitats, and Lapwing respectively.
- 7.2.8 The Site does not contain any non-statutory ecological designations; however, a single RNR (RNR, Reference: U33086) is located along River Road adjacent to the Site boundary along River Road. A further RNR is located offsite along River Road, approximately 0.05km north of the Site boundary, whilst all other identified non-statutory ecological designations are situated over 0.5km from the Site boundary. There are 15, including those stated, non-statutory ecological designations located within 2km of the Site.

7.3 Mitigation Measures

- 7.3.1 The Scheme has been designed to incorporate the retention of valuable habitats and ecological features, including those identified to be of importance for protected species. This will be achieved by implementing appropriate development buffers, which are to remain in-situ, and undeveloped for the lifetime of the Scheme.
- 7.3.2 The cessation of intensive arable production across the Solar PV site will result in reduced physical disturbance during the Operational Phase (e.g. through lack of ploughing, seeding and harvesting of crops) and reduction in application of pesticides (including insecticides and herbicides) along with reduced nutrient input due to removal of fertiliser input which will benefit ecological receptors and would likely result in increased ecological diversity and reduced pollution and leaching to offsite areas.
- 7.3.3 Other embedded mitigation which will further limit development effects on ecological receptors during the Construction and Operational Phases include designated site access and transit routes which will follow existing field accesses, gaps in hedgerows, and trackways, including avoidance of the development buffers and routing of construction traffic, which will avoid sensitive areas including designated sites.
- 7.3.4 A CEMP and DEMP will be secured through requirement of the DCO. The CEMP and DEMP will detail measures and approaches to be adopted which will limit the likelihood of impacts upon retained habitats through damage and pollution prevention.
- 7.3.5 Veteran trees are considered irreplaceable habitats, the retention of these trees has been designed into the Scheme, and these features will be protected throughout the lifetime of the Scheme.
- 7.3.6 Mitigation measures will be implemented to prevent the spread of exotic invasive species will be detailed within the LEMP, CEMP and DEMP.



- 7.3.7 New habitats will be provided as part of the Scheme with aims to improve biodiversity gains in order to ensure an overall increase in biodiversity value to provide Biodiversity Net Gain (BNG). Given the nature of the habitats and enhancement measures proposed, it is currently anticipated that the resultant BNG assessment will demonstrate net gain in habitat and hedgerow units substantially in excess of 10%, albeit this would be confirmed at in the final design of the Scheme. Where this does not conflict with construction, operation and decommissioning function of the Scheme examples of habitat creation and enhancement measures to be implemented as part of the Scheme include; creation of new grassland habitats including wildflower grassland; gapping up of hedgerows and treelined with additional native species, implementation of a rotational management strategy for hedgerows and selective thinning and management of vegetation associated with ponds and ditches.

7.4 Assessment of Likely Significant Effects

- 7.4.1 Decommissioning activities are anticipated to generate effects of a similar or lesser extent, magnitude, duration, reversibility, timing, and frequency compared with the Construction Phase and therefore the Construction Phase represents a worse case scenario.

Construction, Operation and Decommissioning Phase

Designated Sites (International, National and Local)

- 7.4.2 Given the degree of separation and embedded Scheme design mitigation measures, it is considered there will be **no significant adverse effects** in relation to direct, functionally linked land, indirect pathways and air quality impacts to those International, National and Local ecological statutory and on-statutory designations assessed within 25km, 5km and 2km of the Site respectively.
- 7.4.3 Extensive breeding bird surveys have taken place across the Study Area (2024) to identify to identify whether there is any functional linkage and provide supporting habitat of importance to qualifying species (Stone Curlew, Nightjar and Woodlark) between the Site and Breckland SPA. No records of qualifying species were recorded during survey work undertaken. Therefore, the Site does not appear to represent functionally linked land used by qualifying species.

Habitats

- 7.4.4 Following the implementation of mitigation measures, it is considered there will be **no significant adverse** effects on habitats in relation to direct and indirect pathways as a result of the Construction, Operational and Decommissioning Phase.

Fauna

Bats – Roosting

- 7.4.5 At this stage, it is considered effects on bats (roosting) can be avoided and/or mitigated for, and therefore **no significant adverse** impacts on roosting bats are anticipated in relation to direct and indirect pathways. This is considered **not significant**. Measures set out within embedded mitigation (including lighting considerations as part of the CEMP) will ensure that potential for disturbance effects are avoided. Habitat creation and enhancement measures in the LEMP such as suitable undisturbed buffers will be embedded into the Scheme design.



- 7.4.6 Without further survey work to confirm the nature, species and status of any individual roosts, it is not possible to confirm the scale of significance of any individual roost. This will be assessed in the ES following the finalisation of the Scheme design and completion of survey work if needed.

Bats – Foraging/Commuting

- 7.4.7 The Scheme design incorporates the retention of hedgerows, treelines and woodland blocks, which constitute key movement corridors along which foraging and commuting bats traverse the Study Area, along with the key focus of foraging features. As set out above, embedded mitigation incorporates the retention of these features within appropriate development exclusion buffers. Potential for adverse impacts on foraging/commuting bats during construction activities would be limited to disturbance through noise and lighting associated with construction activities. Embedded mitigation incorporates suitable measures to ensure bats are safeguarded as set out in the CEMP.
- 7.4.8 **No significant adverse** effects on foraging/commuting bats are anticipated, which is considered **not significant**.

Badgers

- 7.4.9 Badgers may be adversely impacted by the Proposed Development through loss of habitat in which to build setts, accidental direct harm during construction, disturbance by vehicles and personnel or the compaction of soil around setts. Existing badger setts will be fully retained and minimum 30m development exclusion buffers maintained as part of the embedded mitigation for the Scheme. Foraging resources offering potential for badger (field margins, hedgerows, tree-lines and woodlands) will be retained along with associated buffers.
- 7.4.10 New boundary fencing has potential to obstruct access to foraging areas and/or limit connectivity across the Site for badger, albeit this would largely be in respect of internal field areas (currently providing limited foraging value) with the majority of boundary corridors and features such as woodlands and hedgerows retained outside of fenced areas and therefore continuing to be available for use. No direct loss of current habitats or importance to Badger is anticipated during the Decommissioning Phase, albeit necessary loss of grassland areas (created and retained throughout the Operational Phase) would occur, potentially representing an adverse impact on Badgers at the time. However, such habitats would only have been brought about on a temporary basis as a result of the Scheme.
- 7.4.11 **No significant adverse** effects on badgers are anticipated, which is considered **not significant**.

Otter and Water Vole

- 7.4.12 The Site does not contain any watercourses or connected waterbodies that could provide potential opportunities to support Otter or Water Vole, and no suitable connective habitats are located within the immediate vicinity of the Site. Accordingly, on the basis of the survey information, it is reasonably considered that Otter and Water Vole are absent from the Site and immediately adjacent areas.
- 7.4.13 **No significant adverse** effects in regard to Otter or Water Vole are anticipated as a result of the Construction, Operational or Decommissioning Phases of the Scheme.



Brown Hare and Hedgehog

- 7.4.14 The construction activities will result in disturbance to habitats and potential for killing or injury of individual mammals (including temporary loss of habitats), albeit this would not be anticipated to be significantly greater than the existing baseline position as a result of current agricultural activities such as ploughing and crop harvesting, whilst habitats offering greatest cover and refuge such as hedgerows and woodlands will remain undisturbed with substantial buffers.
- 7.4.15 Existing mature vegetated habitats such as hedgerows, woodland and tree lines provide cover and foraging resources for other mammals. These habitats will be retained with suitable buffers, whilst stable grassland habitats will be created and maintained within the Solar PV Site throughout the Operational Phase of development, representing increased potential foraging opportunities across the site throughout that time (representing significant positive effects). Embedded mitigation includes suitable design of fencing to allow permeability, including mammal gates where appropriate.
- 7.4.16 Decommissioning activities will be focused on removal of infrastructure and reversion to agricultural uses in line with the current baseline. Accordingly, no direct loss of current habitats or importance to other mammals is anticipated, albeit necessary loss of grassland areas (created and retained throughout the Operational Phase) would occur, potentially representing an adverse impact on mammal species at the time. However, such habitats would only have been brought about on a temporary basis as a result of the Scheme.
- 7.4.17 **No significant adverse** effect (indirect and direct) on Badgers and other mammals assessed in terms of habitat loss are anticipated in relation to habitat loss as a result of the Construction, Operation and Decommissioning Phase.

Breeding Birds

- 7.4.18 Potential effects on breeding birds (including ground nesting species) during the Construction Phase relate to a direct loss of active nests and/or potential disturbance events, resulting in a direct effect on local populations. In the absence of additional mitigation, the Scheme will result in the loss of open habitats with clear site lines. Measures set out within stated embedded mitigation include safeguards (timing of vegetation clearance and/or nesting bird checks) in order to safeguard nesting birds and avoid a potential offence. **No significant adverse effects** are anticipated in regard to breeding bird species (including ground nesting species) as a result of the Construction Phase of the Scheme.
- 7.4.19 In the absence of additional mitigation, the Scheme has potential to result in significant adverse effects (direct and indirect effects) on Ground nesting birds (breeding Eurasian Skylark and Eurasian Curlew) during the Operational Phase of the Scheme.
- 7.4.20 In line with the Construction Phase, **no significant adverse** effects are anticipated in regard to bird species (including ground nesting species) as a result of the Decommissioning Phase of the Scheme.

Wintering Birds

- 7.4.21 Wintering bird surveys are ongoing and remain to be completed at the time of writing due to the relevant seasonal requirements and as such, insufficient information is currently available in regard to wintering birds to confirm any likelihood of significant effects.



- 7.4.22 On the basis of initial information, following the embedded mitigation **no adverse significant** effects are anticipated. However, full consideration in regard to this group will be set out within the ES, including consideration of the final wintering bird survey results.

Reptiles

- 7.4.23 Habitats providing reptile suitable opportunities are present within the Study Area, particularly in the form of existing field margins dominated by rough grassland. Specific reptile surveys are currently programmed to be undertaken at the Study Area in 2025 in order to confirm the presence or likely absence of common reptiles, the results of which will inform the ES in regard to the Scheme. Prior to the completion of these surveys, insufficient information is currently available to fully assess the likely impacts of the scheme on this group.
- 7.4.24 In the absence of mitigation, should reptiles be present, the Scheme could result in the short-term loss of habitat and potential killing or injury of individuals which would likely represent a potentially **significant adverse** effect during the Construction and Decommissioning Phases.
- 7.4.25 Ongoing grassland habitats will be created and maintained around the Solar PV Arrays throughout the Decommissioning Phase of development which would likely provide increased habitat opportunities for reptiles should this group be present, which would therefore represent potentially **significant positive** effect.

Amphibians (Great Crested Newt (GCN))

The Study Area contains a number of ponds providing apparently suitable breeding opportunities for amphibians such as Great Crested Newt (GCN), whilst a number of further ponds are present within the surrounding offsite areas within 500m of the Site. Specific surveys of ponds within the Site and associated 250m radius during 2024 recorded the likely absence of GCN. In addition, potentially suitable terrestrial habitats are present throughout the Site, albeit the vast majority of internal areas remain under intensive arable crop production which are subject to regular disturbance and provide at best sub-optimal terrestrial habitats. No significant adverse effects on GCN are anticipated in relation to direct and indirect pathways as a result of the Construction Phase.

- 7.4.26 During the Operational Phase, internal field areas will be subject to reduced levels of ground disturbance in comparison with current intensive arable management and development of grassland, representing increased potential foraging opportunities across the site throughout that time should amphibians make use of these areas (potentially representing **significant positive effects**).
- 7.4.27 Decommissioning activities and associated potential for impacts on amphibians (GCN) will be similar to the Construction Phase (albeit the Construction Phase represents the worst-case scenario). Given the timescales prior to the progression of decommissioning activities, it is possible that the status of GCN could change, with any accurate assessment of effects necessarily depend on the population status at the time, which would likely need to be updated through up to date survey work, to inform the Decommissioning Phase. However, on the basis of the current information, **no significant adverse effects** on GCN are anticipated in relation to direct pathways as a result of the Decommissioning Phase



7.5 Additional Mitigation

7.5.1 Additional mitigation measures, not included within the embedded mitigation, and enhancement measures, relating to relevant ecological receptors are set out below:

Additional Mitigation - Construction and Decommissioning Phases

- Badger - Setts closure under licence, with suitable mitigation measures/compensation provided in line with relevant licence requirements. It is proposed that updated Badger survey work is carried out prior to commencement of the Construction Phase in order to confirm the current status of Badgers at the Site and inform any detailed mitigation (including the need for works to be undertaken under licence should any active setts be affected at that time).
- Reptiles - Should survey work confirm the presence of reptile species at the Site, measures will be implemented to avoid killing or injury of reptile species. Precise details of mitigation measures will be dependent on the numbers and locations of reptiles within the Site, and accordingly, will be drawn up following the completion of further reptile surveys, albeit given the nature and extent of arable habitats, this group is likely to be absent across much of the Site. Accordingly, given the limited extents of suitable habitat to be temporarily affected by the Scheme, it is anticipated that mitigation would centre on the removal of suitable terrestrial habitats following precautionary methods of working, including the ecologically supervised, phased clearance of habitat, preceded by a toolbox talk. Where appropriate, a reptile mitigation strategy will be included within the oCEMP and oDEMP, and secured in full by requirement of the DCO Application.

Enhancement Construction and Decommissioning Phases

- Amphibians (Great Crested Newt) - On the basis of the current information, GCN appears unlikely to be present within the Site or affected by the proposed Scheme and accordingly, no mitigation measures are proposed in regard to this species, albeit this position will be further reviewed in advance of the submission of the ES in line with the above considerations, including in relation to potential presence within ponds located 250m to 500m from the Site boundary. Where necessary a precautionary mitigation strategy will be included within the oCEMP and oDEMP in order to safeguard amphibians.
- Ground Nesting Birds (Skylark and Curlew) - Discussions are ongoing with landowners and Natural England on the extent of land required for the creation of additional habitat for ground nesting birds, to ensure that the loss of habitat is mitigated through the final design of the Scheme. Whilst these discussions are ongoing, and the exact quantum of habitat provided is subject to direction from Natural England, the Applicant is committed to providing sufficient habitat for ground nesting birds to ensure there are no significant adverse residual effects.



7.6 Residual Effects

- 7.6.1 At this stage, it is considered that any potentially significant adverse effects on the identified ecological receptors can be avoided, mitigated or compensated for, and therefore limited significant residual adverse effects (after all mitigation (embedded and additional mitigation and enhancement)) have currently been identified. Baseline survey work is still being undertaken and will be presented in the ES.
- 7.6.2 As insufficient information is currently held for a number of receptors including wintering birds, reptiles and GCN in order to fully assess the likely impacts of the Scheme on these groups, significant adverse residual effects on a small number of ecological receptors cannot currently be ruled out.
- 7.6.3 A full assessment of impact for all ecological receptors will be possible following the completion of all baseline survey work, and the finalisation of the Scheme design. These assessments will be provided within the ES when this is produced.
- 7.6.4 Following the implementation of the additional mitigation measures and enhancements, it is currently anticipated that the proposed Scheme will result in significant, beneficial effects on habitats within the Site, albeit this position will be further confirmed and the final extent and significance of effect will be further assessed as part of the ES in order to reflect the final detailed Scheme design.
- 7.6.5 Specific reptile surveys are currently programmed to be undertaken at the Study Area in 2025 in order to confirm the presence or likely absence of common reptiles within suitable habitats at the Site, the results of which will inform the ES in regard to the Scheme. Following the creation of new habitats and associated long-term management for wildlife benefit in line with the proposed mitigation and enhancements set out above, should reptiles be present within the Site or surrounding areas, it is currently anticipated that the proposed Scheme will result in significant, beneficial effects on reptile populations.
- 7.6.6 Specific details and extent of proposed mitigation measures in regard to ground nesting birds is ongoing in discussion with the relevant landowners and Natural England and will be subject to assessment at the ES stage once details are available. The Applicant is committed to providing sufficient habitat for ground nesting birds. However, the Scheme is anticipated to result in significant beneficial effects on other breeding bird species during the Operational Phase due to the provision of new habitats and associated long term management.



8 Cultural Heritage and Archaeology

8.1 Introduction

8.1.1 **Volume I, Chapter 8: Cultural Heritage and Archaeology** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to cultural heritage and archaeology.

8.2 Baseline and Methodology

8.2.1 The Site has been subject to baseline surveys which include historic environment record searches, geophysical survey, walkover survey, assessment of airborne remote sensing and satellite imagery data and archaeological desk-based assessment.

8.2.2 There are no designated heritage assets within the Site.

8.2.3 Within the respective Study Areas surrounding the Site there are 151 designated heritage assets, comprising three Scheduled Monuments, nineteen Grade I listed buildings, seven Grade II* listed buildings, one hundred and eight Grade II listed buildings, one Grade II Registered Park and Garden, and three Conservation Areas.

8.2.4 The Norfolk Historic Environment Record (HER) contains 145 records within a 1km Study Area, consisting of 136 'monuments' and nine 'events'.

8.2.5 A programme of archaeological trial trenching will be undertaken to inform the cultural heritage band archaeological assessment within the ES.

8.3 Mitigation Measures

8.3.1 Embedded mitigation principles within the design include:

- Incorporation of appropriate setbacks, buffers and landscaping to minimise infringement on any views;
- Avoidance of sensitive archaeological remains;
- Use of concrete blocks as ballast avoiding the need for driven and screw anchored installation for the PV panels which would preserve archaeological remains in-situ;
- Removal of PV panels from sensitive areas;

8.3.2 Construction works will be undertaken in accordance with a CEMP which will be secured as a requirement of the DCO. The CEMP will be agreed prior to construction works commencing on Site.

8.3.3 Historic England will be consulted on embedded mitigation measures with regards to the setting of heritage assets and detailed in the LEMP which will be secured through requirement of the DCO Application.



- 8.3.4 Prior to the commencement of any phase of decommissioning a DEMP will be secured by requirement of the DCO Application, such mitigation measures will ensure protections put in place during the Construction and Operational Phase will apply during the Decommissioning Phase.
- 8.3.5 A suitable programme of archaeological trial trenching evaluation, to be developed in consultation with the Norfolk Historic Environment, will, if required, be undertaken prior to submission of the DCO Application to determine the character and significance of any such remains present on Site.

8.4 Assessment of Likely Significant Effects

- 8.4.1 It is considered that there is the potential for likely significant effects upon the historic environment resulting from the Scheme, which may include:
- Direct impacts upon heritage assets resulting in their partial/total loss during the Construction of the Scheme;
 - Indirect impacts on the significance of designated heritage assets through changes to their settings during all Phases of the Scheme; and
 - Indirect impacts on the significance of non-designated heritage assets through changes to their settings during all Phases of the Scheme.

Construction Phase

- 8.4.2 Impacts to archaeological assets within the Site would largely occur during the Construction Phase through activities such as the installation of PV panels, Battery Energy Storage Systems (BESS), Substations (both Customer and National Grid), Cabling, access tracks and Temporary Construction Compounds which all have the potential to have an adverse, permanent, and irreversible impact upon buried archaeology.
- 8.4.3 At the time of writing, based upon the geophysical survey and recorded archaeology in the area, the archaeological remains within the Site are considered likely to be of low sensitivity (e.g. field systems, stock enclosures, poorly preserved settlement), although the exact nature and sensitivity of the remains will be further assessed by trial trench evaluation prior to production of the ES.
- 8.4.4 During the Construction Phase of the Scheme it is considered a worse-case effect of construction activities associated with the Solar PV Site upon archaeological remains of low sensitivity will be **minor adverse significant**, which is considered **not significant**. For remains of medium sensitivity (e.g. well-preserved settlement activity, burials, ritual deposits) an effect of **moderate adverse significance** would result, which is considered **significant**.
- 8.4.5 It is considered a worse-case effect of construction activities during the Construction Phase associated with areas of greater below ground disturbance upon the archaeological remains of low sensitivity will be **major adverse significant**. For remains of medium sensitivity an effect of **major adverse significance** would result. In both cases, this is considered **significant**.



- 8.4.6 During the Construction Phase there would be potential for indirect impacts to heritage assets within the Study Area beyond the Site boundary through changes to their setting. Indirect impacts that might occur during the Construction Phase would be of no greater magnitude than those experienced during the Operational Phase and would be of short-term duration and reversible. They would, however, be of a different nature, for example including the possible visibility of plant and the presence of Temporary Construction Compounds. These might result in very localised indirect impacts, but the reversibility and short-term duration of these impacts would mean that the significance of the effects would soon return to Neutral. As the indirect impacts would be at their greatest in terms of magnitude and duration during the Operational Phase, this is the main focus of the assessment of impacts to designated and non-designated heritage assets that will be detailed in the ES.

Operational Phase

- 8.4.7 The impacts to buried archaeological features during the Operational Phase would be of a beneficial nature, due to these remains being taken out of the agricultural cycle of regular ploughing. A moderate beneficial impact has been identified for the Solar PV Site. The benefits will not apply to areas where archaeology has been subject to higher levels of impact. This will result in a **moderate beneficial** effect, which is considered **significant**.
- 8.4.8 There are potential indirect impacts on heritage assets within proximity to the Site during the Operational Phase of the Scheme. These impacts lie in the contribution that the setting of heritage assets makes to their significance and could include changes in land use altering the character of heritage landscapes and the surrounding environs of heritage assets, visual intrusion affecting the dominance/prominence of heritage assets within their settings, glare and shadowing caused by the reflection of sunlight off Solar PV Arrays and noise pollution. At the PEIR stage there are 15 heritage assets within the Study Area that are considered sensitive to the Scheme, some of which likely to experience effects considered **significant**

Decommissioning Phase

- 8.4.8.1 Plant movement and other activities during the Decommissioning Phase, similar to those employed during the Construction Phase, could have an adverse impact upon the settings of nearby designated and non-designated heritage assets.
- 8.4.8.2 It is considered at the PEIR stage that these decommissioning impacts would be of no greater magnitude than operational impacts that would have already occurred. Decommissioning impacts would be temporary, short term and reversible in nature, and would ultimately result in the reversal of the Operational Phase. Consequently, it is considered decommissioning effects would **not be significant**.

8.5 Additional Mitigation

- 8.5.1 It is possible that as the Scheme assessment and design develops, further additional mitigation strategies might also be identified. These will be included in the ES.
- 8.5.2 Where significant adverse effects are identified by the forthcoming heritage impact assessment, after considering embedded measures, additional mitigation measures may be identified in the cultural heritage and archaeology chapter of the ES.



- 8.5.3 In relation to potential setting impacts these will likely all form part of the embedded mitigation and there is unlikely to be any additional mitigation that could be implemented. With regards to the archaeological resource, until the trial trench evaluation has been completed it is not possible to identify how sensitive the archaeological remains are to the various impacts and, therefore, the extent of mitigation that will be required. The type of mitigation required may comprise open area excavation, archaeological watching brief and/or preservation in-situ. It is, however, proposed that a full mitigation strategy is presented with the ES once the trial trench evaluation has been completed. The mitigation Strategy will be presented as a Programme of Archaeological Works (PoAW) detailing the measures to be taken.

8.6 Residual Effects

- 8.6.1 There are no designated heritage assets within the Site boundary, therefore, will be no direct impact upon any designated heritage assets. Any potential indirect residual impacts to the setting of designated heritage assets during the Construction Phase would be temporary and at a negligible magnitude. It is considered there will be no significant residual adverse effects.
- 8.6.2 Impacts to buried archaeology during the Operational Phase will be beneficial in removing the land from agricultural activities, such as ploughing, which has a widespread impact upon below ground archaeological remains. There are two residual significant adverse cultural heritage effects on Castle Acre Castle and Castle Acre Priory, which will be reassessed in the ES once the detailed design of the Scheme is further developed. Residual effects associated with the Operational Phase will be detailed in Chapter 8: Cultural Heritage and Archaeology chapter of the ES.
- 8.6.3 It is considered that there will be no significant residual adverse effects that would arise from the Decommissioning Phase of the Scheme than those that arise during the Construction Phase, as the infrastructure is removed, and the Site returned to the landowner.



9 Transport and Access

9.1 Introduction

9.1.1 **Volume I, Chapter 9: Transport and Access** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to transport and access.

9.2 Baseline Conditions and Methodology

9.2.1 The majority of the equipment required to construct, operate and maintain the Scheme is likely to be imported into the UK from abroad and as such will most likely arrive at an appropriately located port. Although the details of exactly where the equipment will arrive are not yet known, it is assumed that it would be transported from the relevant port via the SRN to the Site. On that basis, an initial feasibility exercise has been undertaken to determine potential access routes along the Local Road Network (LRN) to the Site from the Strategic Road Network (SRN).

9.2.2 To access the Site from the SRN, three routes have been identified as follows:

- Route A: Access to/from the south from the A47, via the A1065;
- Route B: Access to/from the north via A1065; and
- Route C: Access to/from the A47, from the west via Narford Road, Low Road, South Acre Road and A1065.

9.2.3 The proposed access routes to the Scheme from the SRN alongside the constraints on the LRN are shown at **Volume II, Chapter 9: Transport and Access, Figure 9.1**.

9.2.4 The review of the baseline conditions relevant to the assessment of transport and access impacts has been undertaken based on the Transport and Access Study Area (hereafter the 'Study Area'). The Study Area has been defined as the routes from the SRN via the LRN required to facilitate traffic movements associated with the Construction, Operational and Decommissioning Phases of the Scheme, as well as any improvements or changes required to facilitate traffic access.

9.2.5 Approximately 2km to the south of the Site, the A47 forms part of the SRN, with National Highways (NH) as the Highway Authority. It is a dual carriageway with a speed limit of 70mph, aligned in an east-west orientation to the south of the Site. The A47 provides strategic connections to Norwich approximately 48km to the east and King's Lynn approximately 40km to the west.

9.2.6 The A1065 is a single carriageway road that runs in a north-south alignment along the Site's eastern boundary. It has varying speed limits, with 30mph sections through built-up areas and national speed limit (60mph) in rural stretches. Where the A1065 runs adjacent to the Site's eastern boundary, it is subject to a 60mph speed limit.

9.2.7 The A1065 connects Swaffham to Fakenham in the north and forms a key junction with the A47 via the Fakenham Road interchange. The A1065 serves as an important link for local and regional traffic movements.



- 9.2.8 West Acre Road is a single carriageway road running from Swaffham in a north westerly direction before becoming Narford Lane. It forms a priority junction with Lynn Road in the south. It has a varying speed limit, with 30mph restrictions towards the southern end, transitioning to the national speed limit (60mph) as it progresses northward through the Site boundary up to Narford Road further north.
- 9.2.9 Narford Road is a single carriageway road subject to the national speed limit (60mph). It forms a priority junction with the A47 to the west of the Site and connects north to Low Road and subsequently River Road, before joining back onto the A1065 in the east via South Acre Road.
- 9.2.10 Due to the rural nature of the Study Area, there is a limited provision of footways alongside the carriageways of the roads within the Study Area. There is no footway along the A1065 where it passes along the Site's eastern boundary.
- 9.2.11 There are no designated sections of the National Cycle Network within the Study Area, though there are some recreational cycle routes that include:
- The Peddars Way: A 46-mile route from Knettishall Heath, Suffolk to Holme-Next-The-Sea, Norfolk. It follows an ancient Roman road and is largely cyclable; and
 - The Rebellion Way: A 232-mile cycling adventure around Norfolk, utilising quiet back roads, byways, cycle paths and bridleways.
- 9.2.12 There are a number of Public Right of Ways (PRoW) that pass alongside the boundaries between the individual field-parcels that make up the Site.
- 9.2.13 The preliminary transport and access assessment assesses the potential likely significant environmental effects of the Scheme during the Construction and Decommissioning Phases. The potential likely significant environmental effects of the Scheme have been considered on both motorised users and non-motorised users (NMU) for these Phases.
- 9.2.14 The effect of the Decommissioning Phase is anticipated to be equivalent to or less than the Construction Phase as decommissioning activities will utilise the same access points and routes as construction but will generally require fewer vehicle movements since existing site infrastructure like access tracks will already be in place and less specialist equipment will be needed for dismantling compared to construction and installation. Equipment can also be compressed or consolidated upon the Decommissioning Phases as there is less of a need to coordinate the supply chain and logistics when compared to during the Construction Phase. Therefore, it is considered that the Construction Phase assessment represents a robust, reasonable worst-case scenario, as the Construction Phase assessment provides an appropriate upper limit for potential traffic impacts.
- 9.2.15 The effects to be assessed during the Construction Phase of the Scheme are as required by the Institute Environmental Management and Assessment (IEMA) Environmental Assessment of Traffic and Movement (EATM) Guidance, 2023, produced by the Institute of Environmental Management and Assessment which are as follows:
- Severance;
 - Driver Delay;
 - Pedestrian Delay;
 - Non-motorised User Amenity;



- Fear and Intimidation; and
- Road Safety.

9.2.16 In accordance with the IEMA EATM Guidance (2023), the following sensitive receptors are considered within the preliminary assessment:

- Non-Motorised Users;
- Public Right of Ways (PRoW) users;
- Motorists and freight vehicles;
- Public transport users; and
- Emergency services.

Scheme Replacement and Maintenance Activities

9.2.17 During the Operational Phase of the Scheme, both routine operational maintenance and programmed replacements of key infrastructure will be undertaken.

9.2.18 Further details regarding the replacement of PV panel components during the Operational Phase are provided in **Volume I, Chapter 5: Scheme Description**, with the management of these activities secured through a requirement in the DCO Application to prepare an Operational Traffic Management Plan (OTMP) and Operational Environmental Management Plan (OEMP). The Applicant will also submit a replacement schedule to NCC at agreed intervals (years 10, 20, and approximately every five years thereafter), as outlined in **Volume I, Chapter 5: Scheme Description**.

9.3 Mitigation Measures

9.3.1 The embedded mitigation measures that have been integrated into the design of the Scheme relevant to transport and access are as follows:

- Construction Access Routes - the routes to the Scheme have been identified through a review of the LRN to identify suitable locations in highway safety terms, including being sufficient to accommodate HGVs and the provision of appropriate visibility splays. The routing for construction traffic will be secured through the Construction Traffic Management Plan (CTMP) which will be secured by way of requirement in the DCO.
- Compound Location and Consolidation - Use of internal Construction Compounds for the Scheme where deliveries can be made from the SRN, directly from the A1065. The strategy for consolidation will be secured through the CTMP which will be secured by way of requirement in the DCO Application.
- Internal routing - internal access routes will be provided within the Site to minimise vehicles needing to use the LRN where possible.
- Highway improvements within the Site - permanent improvements will be made to assist with the movement of vehicles within the Site, which will be outlined in the Transport Assessment (TA) and ES that will support the DCO Application. These improvements will



be secured through the eventual Order Limits of the DCO Application and Access and Right of Way Plans.

- Staff Shuttle - the Scheme will seek to employ the use of a shuttle bus service. Further details of the shuttle bus service will be provided within the ES and will be secured via a requirement in the Travel Plan (TP) which will be secured by way of requirement in the DCO with further details to be provided prior to commencement of the Construction Phase.

9.3.2 A CEMP will be secured via a requirement of the DCO Application and will be approved by the LPA, in consultation with NCC and National Highways, prior to the commencement of the Construction Phase. The CEMP will focus on the wider environmental management and mitigation measures, rather than focusing solely on traffic. The CEMP will address the potential for any in-combination effects.

9.3.3 An OEMP will be secured via a requirement of the DCO Application and will be approved by the LPA, in consultation with NCC and National Highways, prior to the commencement of the Operational Phase. The OEMP will focus on the maintenance aspects of the Scheme, including the ongoing maintenance and replacement of kit and equipment during the lifespan of the Scheme.

9.3.4 A Decommissioning Traffic Management Plan (DTMP) will be secured via a requirement of the DCO and provided once details on the Decommissioning Phase are available, which will focus on the traffic impacts and traffic management measures to be associated with the decommissioning phase. The DTMP will be approved by the LPA, in consultation with NCC and National Highways, prior to the commencement of the Decommissioning Phase. In advance of the DTMP being prepared and to set out the principles as to how the Decommissioning Phase will initially be mitigated and managed, an oDEMP will be secured by a requirement in the DCO Application.

9.4 Assessment of Likely Significant Effects

9.4.1 This section describes the likely significant environmental effects of the Scheme on transport and access during the Construction and Decommissioning Phases of the Scheme. Likely effects related to transport and access during the Construction Phase of the Scheme represent the worst-case scenario for decommissioning.

9.4.2 **Volume III, Appendix 9.3** sets out the percentage increase of construction traffic associated with the Scheme across all links within the Study Area in the future baseline year of 2028, as the anticipated year of peak construction.

Construction and Decommissioning Phase

9.4.3 Overall, the effect on severance, driver delay, pedestrian delay, NMU amenity, fear and intimidation, road safety during the Construction and Decommissioning Phases will be **negligible adverse significant**. This is considered **not significant**.

9.5 Additional Mitigation

9.5.1 At this PEIR stage, no additional mitigation to the embedded mitigation in **Volume I, Chapter 9: Transport and Access** has been identified.



- 9.5.2 It is possible that, through further design refinement, the effects concluded above will be reduced for the final Scheme submitted for the DCO Application, which would be considered as embedded mitigation in the final ES chapter.

9.6 Residual Effects

- 9.6.1 In the absence of any additional mitigation, the residual effects are the same as the effects presented above as likely significant effects.



10 Noise and Vibration

10.1 Introduction

- 10.1.1 **Volume I, Chapter: 10 Noise and Vibration** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to noise and vibration.

10.2 Baseline Conditions and Methodology

- 10.2.1 The baseline noise environment (Baseline Noise Survey undertaken in November, 2024) was observed to be varied but typical of the rural location of the Site, with a range of natural noise sources and a varying influence of road traffic from the A47 to the south and A1065 to the east of the Site. Residential properties located to the north of the Site near the village of South Acre and other residential properties located around the Site experienced reduced levels of traffic noise.
- 10.2.2 Traffic noise, in particular from the A47, also represents a notable influence in the area, which can be dominant for properties located in proximity to the A47 and to some extent A1065, while more distant or minimal for other properties located further away.
- 10.2.3 It is considered noise from agricultural activities will also represent a contribution at times given the nature of the area, although this may be for limited periods particularly during evening and night-time periods.
- 10.2.4 The noise and vibration assessment considers Noise Sensitive Receptors (NSR), such as residential and PRow, in the vicinity of the Site, and considers effects along the construction and operational traffic routes. Distance of effect from vibration is typically much smaller than noise. Vibration effects from construction activities such as piling or trenchless drilling (for example, Horizontal Directional Drilling or HDD), if applicable, will be assessed within the same 1 km from NSRs, but generally effects are not expected to be significant at distances of more than 100 m.

10.3 Mitigation Measures

- 10.3.1 A series of embedded mitigation measures have been incorporated into the Scheme design, with consideration of the distance between the proposed Customer Substation, National Grid Substation and BESS areas and other noise-generating plant and receptors, such as residential properties and PRow including minimum separation buffers. Design of the Scheme is an iterative process and following further consultation and design considerations from all technical specialists the design assessed within the PEIR may be amended. Such design changes, if required for noise implications, will be discussed in the ES.
- 10.3.2 Good practice measures detailed below will be implemented as part of a site-specific Noise Management Plan (NMP), which will be included in the oCEMP, to manage the effects of noise and vibration during construction activities, and will be required of all contractors. These good working practice measures are likely to include:



- Activities that may give rise to audible noise at the surrounding properties and heavy goods vehicle deliveries to the Site would be limited to the hours 07:00 to 18:00 Monday to Friday and Saturday 08:00 to 13:30 unless otherwise approved in advance by the local authority (except in case of an emergency). Those activities that are unlikely to give rise to noise audible at the Site boundary, or light vehicle traffic accessing the Site such as that involved with staff mobilisation, may continue outside of the stated hours;
- Construction noise will be managed via a site-specific Noise Management Plan (NMP) to be approved by the local authority and secured through required of the DCO Application. The embedded mitigation contained in the NMP will include the commitment to liaise directly with local residents, and the wider community;
- A CTMP will be developed and secured through requirement of the DCO to control the movement of vehicles to and from the Site; and
- The Site contractors shall be required to employ the Best Practicable Means (BPM) of reducing noise emissions from plant, machinery, and construction activities, as advocated in BS 5228-1. This includes: selection of quieter equipment where reasonably practicable; all plant not in use to be switched off; minimising use of tonal reverse alarms and using broadband alarms where practicable; mobile plant and stationary plant items to be routed or located to maximise separation distance from noise-sensitive receptors (where practicable), accounting for site-specific constraints; all equipment used would be maintained in good working order; and associated noise attenuation such as engine casing and exhaust silencers shall remain fitted at all times.

10.3.3 Measures to reduce the potential impact of noise generated by the construction phase of the Scheme such as those measures within the NMP listed above would be put in place through a CEMP in consultation with Breckland Council.

10.3.4 An outline Construction Traffic Management Plan (oCTMP) will be submitted with the DCO application and a detailed CTMP will be secured by a requirement of the DCO to control the movement of vehicles, access routes, hours of movement, and types of vehicles to and from the Site.

10.3.5 The above embedded measure and good practice will also be applied in the Decommissioning Phase and will be included in the DEMP.

10.3.6 The above embedded management measures have been derived on a conservative basis at this stage and will be further developed and refined in the ES following additional evaluation and consultation feedback.

10.4 Assessment of Likely Significant Effects

Construction Phase - Noise

Residential Receptors

10.4.1 Almost all receptors are at large distances to the respective components and Site boundary such that they are not expected to be exposed to sound levels above medium magnitude effect from construction activities, with two exceptions;



- Noise from road upgrading work of the A47-to-A1065 slip roads at 'The Splashes' receptors (cluster of residential properties). Due to the very short-duration of works, and given that with prior notice residents are generally tolerant of road work noise, effects will be **short-term minor adverse** on high-sensitive receptors. This is considered **not significant**; and
- Noise from PV panel piling works occurring approximately 85 m from Keepers Cottage, during piling at the closest point which represents a medium magnitude of impact. Although the work undertaken at the closest point would last for a period of less than 1 month and then move away, therefore potentially reducing the magnitude of impact, due to the impulsive nature of the piling and the layout of the PV Site, it is considered on balance that this would represent a **moderate short-term adverse** effect on a highly sensitive receptor, which is considered **significant**.

10.4.2 Specific construction activities associated with cable laying works (e.g. HDD or other trenchless techniques) could be required outside of the assumed daytime construction hours (i.e. evenings, Sundays, Bank Holidays or at night), as the drilling work may need to continue through the night, such that a continuous operation can be completed. Once a bore has been started, it is not possible to stop until it is completed, hence the potential need for some night-time working. Despite the short duration of the works, this may be associated with potentially significant effects. Although other trenchless techniques such as micro-bore or pipe jacking could be used, the impacts associated with HDD represent a worst-case scenario.

10.4.3 Keepers Cottage is approximately 15 m from the Site boundary; if HDD or cable trenching works are undertaken at the closest point to this receptor there will be **short-term moderate adverse** effect which is considered **significant**. However, this is subject to cable trenching works taking place within 100 m of Keepers Cottage and considering the short duration (less than one month) of these works at such a distance, this reduces the impact level. This would result in a short-term **moderate adverse significant effect** which is considered **significant**. However, this is subject to cable trenching works taking place within 100 m of Keepers Cottage.

10.4.4 Four receptors are within 300 m of the Site boundary and may experience medium to high impact from potential night-time HDD works. However, such work continuing during the night is expected to be of short duration (<1 week), therefore the effects at all the high-sensitive receptors, with the exception of Keepers Cottage, are considered **not significant**, and without additional mitigation effects at Keepers Cottage will be **short-term moderate adverse**, which is considered **significant**.

PRoW

10.4.5 PRoW are considered as medium sensitive receptors for the assessment of construction noise. **Volume I, Chapter 5: Scheme Description** outlines a minimum separation buffer for of 15m to PRoW which has been used to assess the worst-case impact. At most there will be a short-term minor adverse significance effect, this is **not significant**.

10.4.6 Construction Phase – Vibration

Residential Receptors



10.4.7 Construction Phase works associated with construction of the Solar PV Arrays could include percussive piling and ground compaction. Further, construction of the access tracks or upgrading of roads may involve ground compaction.

10.4.8 During the Construction Phase it is considered a worse-case effect upon high-residential receptors of high sensitivity will be **short term negligible/minor adverse vibration** effects which is considered **not significant**.

PRoW

10.4.9 PRoW are considered as medium sensitive receptors for the assessment of construction noise. Volume I, Chapter 5: Scheme Description outlines a minimum separation buffer for of 15m to PRoW which has been used to assess the worst-case impact. This would result in a **short-term minor adverse** significant effect which is **not significant**.

10.4.10 Construction Phase - Traffic

Residential Receptors

10.4.11 Traffic associated with the Construction Phase works may also be associated with potential noise effects. The worst-case effect during the Construction Phase to receptors of high sensitivity will be **short-term negligible adverse noise** effects which is considered **not significant**.

Operational Phase - Noise

Residential Receptors

10.4.12 There is a potential for operational noise associated with the BESS, National Grid Substation, Customer Substation and Solar Conversion Units to which a high magnitude of impact is predicted at four (highly-sensitive) NSRs which is associated with **major adverse** effects which is considered **significant**.

PRoW

10.4.13 During the Operational Phase there will be a **moderate adverse noise** effect on PRoW which is **significant**.

Operational Phase – Traffic

Residential Receptors

10.4.14 Replacement or upgrade activities will be undertaken on a small scale using light service vehicles, it is understood no HGV will be used as part of these activities. On this basis, during the Operational phase of the Scheme there will be a **negligible adverse long term effect**, which is considered **not significant**.

Decommissioning Phase – Noise and Vibration

Residential Receptors, PRoW and Traffic



- 10.4.15 Decommissioning is likely to involve activities of similar or reduced intensity as for the Construction Phase and therefore result in comparable noise and vibration effects in the most part.
- 10.4.16 Although the Decommissioning Phase will involve removal of the Solar PV Array foundations, potential impacts could be, as worst-case, similar to those of the Construction Phase. Thereby is considered there will be at worse-case a corresponding **short-term moderate adverse** effect on a highly sensitive receptor (Keeper Cottage), which is considered **significant**
- 10.4.17 Decommissioning noise and vibration would still represent at most a short-term minor adverse significant effect on PRoW receptors which is considered not significant.
- 10.4.18 Decommissioning traffic is likely to be of less or similar volume as the predicted construction traffic. Decommissioning traffic noise effects are also expected to be **negligible** and **not significant**.

10.5 Additional Mitigation

- 10.5.1 Exact additional mitigation measures will be determined once respective zones and area of construction activity (i.e. HDD routes, Site Compound location etc.) are finalised as part of the design of the Scheme, which can then be implemented in the CEMP which will be secured through a requirement of the DCO Application.
- 10.5.2 The effects associated with operational noise are potentially moderate to major in significance, therefore, further mitigation measures are required to reduce the level of effects to acceptable levels. The detailed design of the Scheme, including final plant locations and selections, can be secured through a requirement of the DCO. Further additional mitigation measures will be explored in the ES, such as but not limited to or committing at this stage to; the use of minimum separation distances, use of quieter electrical and mechanical infrastructure and installation of noise reduction kit/attenuator and/or enclosures.
- 10.5.3 As the Decommissioning Phase will result in similar effects in some instances as the Construction Phase for the relevant activities, such as removal of the piles near Keepers Cottage, similar additional mitigation measures outlined for construction activities close to that receptor (such as localised screening) can be employed for the decommissioning phase where relevant. This would be sufficient, even as a worst-case, to reduce the level of effects. These measures will be implemented in the DEMP which will be secured through a requirement of the DCO.

10.6 Residual Effects

- 10.6.1 At the PEIR stage of the Scheme, it is anticipated that through the use of additional mitigation measures, there will be **no significant residual adverse effects** as a result of the Scheme.



11 Soils and Agriculture

11.1 Introduction

- 11.1.1 **Volume I, Chapter 11: Soils and Agricultural Land** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to soils and agriculture.

11.2 Baseline Conditions and Methodology

- 11.2.1 The majority of the land in the Site boundary is agricultural.
- 11.2.2 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).
- 11.2.3 An Agricultural Land Classification (ALC) Survey has been carried out by the Applicant. The surveyed area extends to 774.3 hectares, this largely covers the Indicative area for Solar PV site (as shown on the Concept Masterplan, **Volume III, Appendix 5.1**). The area for Grid Connection Infrastructure as shown in the Concept Masterplan has not been surveyed to date. Works in this area are understood at this stage of the Scheme design relate to limited enabling works to the existing overhead lines and pylons to enable a new National Grid Substation. For completeness, a targeted ALC survey prior to submission of ES will be considered post Statutory Consultation.
- 11.2.4 The ALC survey identified that approximately 58% of the site surveyed is classified as BMV quality land, primarily consisting of Grades 1 (27 hectares), 2 (279 hectares) and 3a (149 hectares), with the remaining 38% of the Site (Grade 3b (269 hectares) and Grade 4 (20 hectares)) considered non-BMV quality land (not including non-agricultural (30 hectares), 4% of the site surveyed).
- 11.2.5 The ALC survey identified a large range in the ALC types found across the Site, from two modest areas of Grade 1 to areas of Grade 4. The ALC survey results show that, in broad terms, the eastern and western areas of the Site are generally moderate or poor quality land, and the central part, where the soils are more loamy and hold more water, are generally good or very good quality.
- 11.2.6 The Solar PV Site is farmed by a number of different businesses, partly in-hand (i.e. farmed by the owners) and partly on various tenancy arrangements. The majority of the land is used for arable cropping. This includes combinable crops such as wheat, barley, oilseed rape and arable break crops, as well as rye and vining peas. Part of the Site is let most years to different specialist growers who grow root crops (potatoes, carrots, parsnips) or onions. Parts of the Site are used for agri-environmental farming uses. The western side of the Site is farmed in-hand. When vegetables are grown they are grown on a license arrangement. Within the Site are four areas of outdoor livestock production, which are tenanted to the livestock farmers.



11.3 Mitigation Measures

- 11.3.1 Construction effects may arise as a result of impacts on soils (and thereby on land quality), either from physical movement of the soils or physical movement across the soils by vehicles. An outline Soil Management Plan (oSMP) will be developed with a detailed Soil Management Plan (SMP) secured through a requirement within the DCO Application. The SMP will provide the framework through which good practice soil management measures will be implemented for the duration of the Scheme and minimise potential effects on soils and agricultural land quality.
- 11.3.2 Construction of the Scheme will involve vehicle trafficking over agricultural land. The oSMP will include measures to mitigate adverse effects to soils (e.g. compaction). It is considered the most important measure to avoid travelling over or moving soils when wet, oSMP measures will include the methodology for determining the suitability of soils to being handled, and controls and measures to minimise soil impacts and prevent adverse effects.

11.4 Assessment of Likely Significant Effects

Construction Phase

- 11.4.1 During the Construction Phase, agricultural land quality and soil function 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 from construction related stages and activities. The soils across the surveyed site are of medium or low sensitivity. As the impacts are not permanent, Construction Phase effects will be temporary **minor/negligible adverse** on soils, which is **not significant**.
- 11.4.2 Effects during the Construction Phase in relation to construction of the access tracks , Customer Substation, National Grid Substation, BESS and electrical infrastructure could collectively amount to more than 50 ha of BMV. If these areas were not restored to comparable ALC grade the effect could potentially result in an adverse impact of major (>50 ha) magnitude on resources of high sensitivity (BMV), which would result in a **major adverse** effect, which would be **significant**. If restored to comparable ALC grade the effect would be **minor adverse**, which would be **not significant**.

Operational Phase

- 11.4.3 The land under and around the Solar PV Arrays will be kept in grassland use and potentially farmed by the grazing of sheep or the production of fodder. Depending upon the grazing regime, there may be periodic need for some mowing or topping of grassland; this will be normal agricultural activity and following good practice, which will be described in the oSMP and will adhere to the principles set out in the LEMP. By careful operation, there should be **no significant adverse** effects on soil resource or agricultural land quality during the Operational Phase.
- 11.4.4 There are a number of farm businesses and enterprises operating within the Site at the time of writing and it is considered all could also operate on other land. There is the potential for replacement farming enterprises such as sheep grazing under and around the PV panels, and overall the quantum of agricultural labour is not expected to be significantly different as a result of the change from arable production to sheep production. Notwithstanding this, both



enterprises will be affected adversely, it is considered there will be significant adverse effect on the day-to-day operations of a farm business. However, it is considered the businesses will not be rendered unviable. No farm buildings or other key components of the enterprises will be affected. There will be no impacts on these holdings as a result of severance. Access to maintain irrigation and water supplies will be retained.

- 11.4.5 As such a medium worst-case magnitude of impact for both enterprises is assessed as a significant change in the day-to-day operations, which for both farm enterprises of medium sensitivity **adverse effects** are of long-term temporary minor adverse significance, which is **not significant**.

Decommissioning Phase

- 11.4.6 The soils across the Solar PV Site would then be loosened with normal agricultural machinery and returned to the farmers for continued agricultural use. These works would be embedded mitigation in the oSMP. Further, decommissioning can be timed to be carried out when soil conditions are suitable, which would be set out in the oSMP. Subject to suitable mitigation, decommissioning is therefore not anticipated to result in any effects greater than those during Construction Phase.
- 11.4.7 The effects after decommissioning on land quality and soils will be negligible, which is considered is **not significant**.
- 11.4.8 The National Grid Substation and Grid Connection Infrastructure will remain in situ, and this will result in a **permanent adverse effect**. The reasonable worst-case assessment is that this might involve a low magnitude impact on a resource of medium or high sensitivity and overall, a **minor adverse effect**, which is considered **not significant**.
- 11.4.9 After decommissioning the farms will have available all farmland except for the areas described above, and the effect will therefore be negligible, which is **not significant**.

11.5 Additional Mitigation

- 11.5.1 At this PEIR stage, no additional mitigation to the embedded mitigation in **Volume I, Chapter 11: Soils and Agriculture** has been identified.
- 11.5.2 It is possible that, through further design refinement, the effects concluded above will be reduced for the final Scheme submitted for the DCO Application, which would be considered as embedded mitigation in the final ES chapter.

11.6 Residual effects

- 11.6.1 As no additional mitigation is proposed at the PEIR stage, the residual effects are the same as the likely significant effects.



12 Water Resources

12.1 Introduction

12.1.1 **Volume I, Chapter 13: Water Resources** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to hydrology, flood risk and drainage.

12.2 Baseline Conditions and Methodology

12.2.1 The Environment Agency's Flood Map for Planning shows the Site entirely within Flood Zone 1, having a very low risk of flooding.

12.2.2 There are no natural watercourses within the Site. Agricultural ditches on-Site have presented as persistently dry. There are understood to be several marl pits (clay removed for agricultural fertiliser) throughout the Site, none of which are active and are generally filled with standing water.

12.2.3 The EA Surface Water Flood Map shows that the modelled surface water flooding extent for the 1% AEP event is largely absent across the entire Site with the exception of a small area in the north which is confined to a topographical depression and an area in proximity to Fincham Drove.

12.3 Mitigation Measures

12.3.1 A series of embedded mitigation measures have been incorporated into the Scheme design, with detailed proposals and locations to be submitted with the DCO Application.

12.3.2 Embedded development design measures will be set out within the CEMP secured under requirement of the DCO, which will set out specific measures which relate to this Scheme. They will consist of good practice methods and works that are established and effective measures.

12.3.3 The following mitigation measures relating to the hydrological environment are embedded into the design of the Scheme:

- 10 m watercourse edge buffers for all construction works (i.e. solar PV panels and associated infrastructure, construction compounds, BESS and substations) with the exception of drain crossings for cables and access tracks ;
- 10 m buffer of IDB maintained watercourses;
- The Scheme will utilise existing access road and tracks already in place where practicable, and this will help to minimise ground disturbance and requirement for further drain crossings;
- Any tracks to be implemented will comprise a graded Type 2 or 3 washed / clean aggregate. Where new access points are required the bellmouth will typically be asphalt and would be



limited in extent. This limits the potential for increased surface water runoff rates and sedimentation effects during rainfall events;

- The Scheme has been sequentially designed to locate all electrically sensitive infrastructure (e.g., the substation compounds, inverters and transformers) outside of Flood Zones 2 and 3 to mitigate against the risk of flooding.

12.3.4 The CEMP will describe water management measures to control surface water runoff and drain hardstanding and other structures during the construction, operation and decommissioning of the Scheme. A Pollution Prevention Plan (PPP) will also be part of a final CEMP. Good practice will be followed in all aspects of construction, operation and decommissioning, specifically through a PPP. The PPP will outline measures to be employed to avoid or mitigate potential pollution for all phases of the Scheme and will also include an Incident Plan to be followed should a pollution event occur.

12.3.5 Method statements will also be applied, which will follow the principles laid out in relevant CIRIA guidance and the principles of the archived EA Pollution Prevention Guidelines.

12.4 Assessment of Likely Significant Effects

12.4.1 The potential effects of the Scheme on hydrological receptors (including: watercourses, drainage ditches and near surface water, Private Water Supplies and Public Water Supplies, and coastal waters, have been assessed for the Construction, Operation and Decommissioning Phases. Effects occurring during Construction and Decommissioning Phases are considered to be short-term effects due to the duration of these phases (up to 24 months in total, though less in any one location due to phasing of the works), while those occurring as a result of the Operational Phase considered to be long-term effects (up to 60 years).

12.4.2 With the embedded design measures implemented, all identified potential effects have been assessed as being of negligible adverse significance, and therefore, the impact from the Scheme during the Construction, Operational, Decommissioning Phase is considered to be **not significant**.

12.5 Additional Mitigation

12.5.1 At this PEIR stage, no additional mitigation to the embedded mitigation in **Volume I, Chapter 12: Water Resources** has been identified.

12.5.2 It is possible that, through further design refinement, the effects concluded above will be reduced for the final Scheme submitted for the DCO Application, which would be considered as embedded mitigation in the final ES chapter.

12.6 Residual Effects

12.6.1 Given that only effects of moderate significance or greater are considered significant the potential residual effects on water resources are considered to be not significant following mitigation.



13 Climate

13.1 Introduction

13.1.1 **Volume I, Chapter 13: Climate Change** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to the climate.

13.1.2 The climate change assessment considers three components: lifecycle greenhouse gas (GHG) impact assessment, in-combination climate change impact (ICCI) assessment and a climate change resilience (CCR) assessment.

13.2 Baseline Conditions and Methodology

GHG Assessment

13.2.1 The baseline comprises existing carbon stock and sources of GHG emissions within the Site from the existing activities on-site. The baseline GHG emissions are dependent on the soil and vegetation types present and the fuel used for the operation of any plant and machinery on the Site. As a conservative approach, the baseline activities on site will be assumed to be generating zero emissions of CO₂e. For the lifecycle GHG impact assessment, the baseline is a 'business as usual' scenario whereby the Scheme is not implemented.

13.2.2 The Scheme is expected to provide a substantial source of renewable electricity for the country. Compared to the emissions generated from the current grid as a UK average, the Scheme is anticipated to result in the generation of fewer GHG emissions. This will be assessed by the comparison of emissions of Carbon Dioxide and equivalent gases (CO₂e) from existing UK average grid emissions forecast for the estimated first operational year and the carbon intensity of the Scheme. The development of carbon capture projects to reduce emissions from existing plant and available baseline information were considered to the extent possible. Consideration will be given to the wider impacts of the Scheme including in the context of current and future carbon budget targets developed for the UK, and the Scheme's overall contribution to climate change.

13.2.3 The assessment will establish the baseline which will consider the factors above and will then consider the GHG emissions over the Scheme's Construction, Operation (including maintenance and replacement) and Decommissioning Phases.

ICCI Assessment

13.2.4 Baseline Conditions for the ICCI Assessment will be determined using the climate change projections data. UK Climate Projections 2018 (UKCP18) data is available from the Centre of Environmental Data Analysis (CEDA) Archive. Climate change impacts relevant to the Scheme will be assessed through the other relevant topic chapters of the ES

CCR Assessment

13.2.5 Historical climate data for the 25km grid covering the Site has been obtained from the UK Climate Projections 2018 (UKCP18) data available from the Centre of Environmental Data



Analysis (CEDA) Archive from the dataset “HadUK-Grid Gridded Climate Observations on a 25km grid over the UK for 1862-2018.

- 13.2.6 It is anticipated that the future baseline will be different from the current present-day baseline, due to changes in climate. For this assessment, UKCP18 probabilistic projections have been provided for 30-year periods from 2020 - 2099 and obtained for the following climate variables which includes annual and seasonal changes in climatic conditions over the land area of the Scheme.
- 13.2.7 The impact of climate change will be determined over the course of the Scheme’s construction, operation (including maintenance and replacement) and decommissioning phases, which is estimated to be 60 years for the purpose of the EIA. For the assessment, the climatic impacts of GHG emissions at the 10%, 50% and 90% probability levels up to 2099 are included which covers the assessment up to the 2089 expected decommissioning date.

13.3 Mitigation Measures

Construction and Decommissioning Phases

- 13.3.1 Embedded mitigation measures will be implemented to reduce the GHG impact of the Scheme.
- 13.3.2 Specific embedded mitigation measures will be implemented to reduce the GHG impact of the Scheme and include the following and will also be included in the oCEMP: Increasing recyclability, minimise the creation of waste and maximise the use of alternative materials with lower embodied carbon, reusing suitable infrastructure and resources, adopting the Considerate Constructors Scheme (CCS) and employing good industry practice measures, conducting regular planned maintenance of the construction plant and machinery to optimise efficiency, encouraging the use of lower carbon modes of transport, providing appropriate facilities for the safe storage of cycles, switching vehicles and plant off when not in use and ensuring construction vehicles conform to current EU emissions standards and implementing a shuttlebus to transport employees to the sites.
- 13.3.3 Similar measures to the Construction Phase will be developed prior to the decommissioning phase for the use of lower-carbon and more climate change resilient methods and will be outlined in DEMP.
- 13.3.4 Decommissioning is expected to occur in 2093. The requirements for decommissioning are subject to change as the environment beyond 2093 is likely to be considerably different to today. The future technological, regulatory, and environmental landscape beyond 2089 is difficult to predict with certainty, so maintaining flexibility in the decommissioning approach is prudent.

Climate Change Resilience

- 13.3.5 Climate change resilience measures are embedded within the Scheme, particularly in relation to flood risk. These measures are outlined below. The specific flood risk impacts and associated mitigation measures are discussed in more detail in **Volume I, Chapter 12: Water Resources**.
- Climate change resilience measurements will be embedded within the Scheme:



- Using equipment's cooling systems where necessary/adapting working practices and equipment use based on current weather conditions;
- Measures to protect workers and resources from extreme weather conditions;
- Monitoring weather forecasts and the news for Environment Agency flood warnings, relevant weather warnings, and water levels of the local waterway; and
- BESS systems would include heating, ventilation and cooling (HVAC) systems and these would be contained within the individual equipment containers.

Operation Phase

13.3.6 Replacement activities as well as regular planned maintenance of the Scheme will occur during operation. Where applicable, the construction mitigation measures as outlined above will also be put in place during operation to optimise efficiency and will be outlined in the oOEMP, and subsequently the OEMP which will be secured by a requirement in the DCO Application.

13.3.7 Specifically, the following embedded mitigation measures will be in place for operation:

- With regards to flood risk, the individual Sites which make up the Scheme have been assessed on the best available data for each Site. Based on the assessed flood risk the following embedded design has been implemented;
- Critical infrastructure within the Scheme (the conversion units, substations, and energy storage compounds) will be sequentially located where possible to an area with a "Low probability of flooding" and therefore in land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%);
- Non-flood sensitive infrastructure forming the wider Scheme (PV Arrays and cabling) will be sequentially located outside the 1 in 100 plus climate change annual probability extent (1% +CC) or where this is not practicable restricted to areas which experience less than 1 m depth of flooding during the same event;
- Flexibility for either tracker or fixed panels has been built into the EIA. The PV panels will have metal frames that hold solar panels in rows, either secured via metal post driven into the ground at a depth of 1.5-3.5m or weighed down using concrete feet (detailed in the **Volume I, Chapter 5: Scheme Description**);
- For both fixed and tracker panels, all sensitive and electrical equipment on the solar panel will be elevated by the legs (including the solar panel face itself)
- Tracker panel units will be mounted on raised frames and will therefore, be raised above surrounding ground levels and fitted with a tracking system. During times of flooding, solar panels may be stowed by the tracking system algorithm onto a horizontal plane, to the minimum post height of 2.5 m above ground level. This ensures that all sensitive and electrical equipment on the solar panel is raised to a minimum of 2.5 m above ground level in the horizontal position.
- Using equipment's cooling systems where necessary/adapting working practices and equipment used based on current weather conditions;



- Protecting workers and resources from extreme weather conditions through appropriate PPE and working practices as secured through the OEMP;
- Monitoring weather forecasts and the news for Environment Agency flood warnings, relevant weather warnings, and water levels of the local waterways. This will be included within the OEMP; and
- Battery Energy Storage System (BESS) systems would include Heating, Ventilation and Cooling (HVAC) systems and these would be contained within the individual equipment containers.

Decommissioning Phase

- 13.3.8 Similar measures to the Construction Phase will be developed prior to the Decommissioning Phase for the use of lower-carbon and more climate change resilient methods and will be outlined in the oDEMP, and subsequently the DEMP which will be secured by a requirement in the DCO Application.
- 13.3.9 Decommissioning is expected to occur in 2093. The requirements for decommissioning are subject to change as the environment beyond 2093 is likely to be considerably different to today. The future technological, regulatory, and environmental landscape beyond 2089 is difficult to predict with certainty, so maintaining flexibility in the decommissioning approach is prudent.

13.4 Assessment of Likely Significant Effects

GHG Assessment

- 13.4.1 Emissions will result from activities during site preparation/enabling works, construction, commissioning activities, the production of materials e.g. extraction of raw materials and manufacturing products necessary to make equipment, and the transportation of the equipment. During the Construction Phase, the greatest impact of GHGs is the result of embodied carbon in the materials used for construction.
- 13.4.2 During the operational phase, GHG emissions will likely arise from routine operation and maintenance of the Scheme as well as embodied carbon in replacement products to be installed on site as parts installed during initial construction reach the end of their lifecycles. Scheduled replacement activities will be required as part of the Scheme, replacement of PV panels and batteries will likely be required as part of maintenance activities.
- 13.4.3 The GHG emissions during construction, operation, and decommissioning of the Scheme can be considered to be 'offset' by the net positive impact of the Scheme on GHG emissions and the UK's ability to meet its carbon targets. From the preliminary calculations used within this PEIR, it is anticipated that the energy generation from the construction and embodied emissions would be saved in comparison to the 'without development' future baseline. This is considered to constitute a **significant beneficial** effect.
- 13.4.4 Within the ES, a more detailed breakdown and assessment of scheme GHG emissions will be undertaken as the scheme design develops and more information is available with regards to specific product types and quantities to be deployed on the site.



ICCI Assessment

- 13.4.5 The greatest risk of in combination effects are the increased flooding events from extreme weather arising from a changing climate. Following implementation of the proposed mitigation the effect is considered to be **negligible** and **not significant**.

CCR Assessment

- 13.4.6 The Climate Change Risk Assessment has considered the measures which are integrated into the design. These are considered an adequate response to the projected climate change impacts to which the Scheme would be exposed.
- 13.4.7 Following implementation of the proposed resilience mitigation by design measures, the ICCI Assessment has **not identified any potential adverse significant** effects to the Scheme during the Construction, operation and Decommissioning Phases of the scheme. This will be assessed further as part of the ES.

13.5 Additional Mitigation

- 13.5.1 At this PEIR stage, no additional mitigation to the embedded mitigation in **Volume I, Chapter 13: Climate Change** has been identified.
- 13.5.2 It is possible that, through further design refinement, the effects concluded above will be reduced for the final Scheme submitted for the DCO Application, which would be considered as embedded mitigation in the final ES chapter.

13.6 Residual effects

- 13.6.1 No additional mitigation measures for the Scheme are considered to be required for any given stage as no significant adverse effects are predicted. However, this will be investigated further within the ES.
- 13.6.2 Whilst at this stage of the project, residual effects due to climate risks have not been fully assessed, it is anticipated that through the use of mitigation measures such as BESS systems including HVAC systems and being contained within the individual equipment container and by not placing sensitive electrical equipment in flood risk areas, there will be a no significant residual adverse effects.



14 Socio-Economics and Human Health

14.1 Introduction

14.1.1 **Volume I, Chapter 14: Socio-Economics and Human Health** has considered the preliminary findings of the likely significant environmental effects of the Scheme in relation to socio-economics and human health.

14.2 Baseline Conditions and Methodology

14.2.1 The study areas for socio-economic and human health matters are the same and have been defined as the combined authority areas of Borough Council of King's Lynn & West Norfolk, and Breckland District Council due to the geographic expanse and scale of the Scheme. Within that study area, a 3km Zone of Theoretical Visibility (ZTV) is used to assess the effects on access to PRoW, open space, and physical activity and changes to local tourism assets. The Study Area, defined in **Volume I, Chapter 9: Transport and Access**, includes nine road links expected to be used by vehicles accessing the Scheme, and is used for the changes in commuting patterns effect. A Labour Catchment Area (LCA) of a 60-minute travel time to the Site, as defined by the Local Authorities, has been used for employment and related effects since this is considered a reasonable time in which workers would commute to the Site. Norfolk, the East of England, and England have been used mostly for context.

14.2.2 **Table 11.1** presents a range of health indicator statistics at the local authority, regional, and national level. The life expectancy for Breckland residents is higher than the regional and national averages for both men and women. King's Lynn & West Norfolk residents, meanwhile, have a life expectancy that is above the national average but below the regional average for men and women.

Table 11.1 Population health baseline indicators

Health measure	Breckland	King's Lynn & West Norfolk	East of England	England
Life expectancy - male	79.9	79.1	79.8	78.9
Life expectancy - female	83.6	83.2	83.5	82.8
% of residents reporting bad or very bad health	5%	6%	5%	5%
% of residents who are disabled: day to day activities limited a lot	8%	9%	7%	7%



Health measure	Breckland	King's Lynn & West Norfolk	East of England	England
% of residents who are disabled: day to day activities limited a little	12%	12%	10%	10%
% of residents classed as overweight or obese	65.8	66.6	64.8	64.0
% of adults who smoke	9.5	17.6	11.5	11.6
Admissions for alcoholic conditions per 100,000 residents	349	524	394	581
% of adults who are physically active	67.1	61.4	67.7	67.1
% of residents reporting 'Poor' levels of anxiety	22.6	20.9	22.6	23.3
% of residents reporting 'Poor' levels of happiness	11.8	5.5	7.8	8.9
Sources: Public Health England, 2025. Local Authority Health Profiles. ONS, 2025. Personal well-being estimates by local authority. ONS, 2025. TS038 - Disability				

14.2.3 **Table 11.2** summarises the vulnerable populations present in each study area. Vulnerable groups are shaded in light green when they are less prevalent than the national average, and dark green when they are more prevalent. Breckland and King's Lynn & West Norfolk share similar vulnerable group profiles, having an age profile that is skewed towards older residents, a high proportion of residents who are classified as disabled, and low prevalences of other vulnerable groups.



Table 11.2 Vulnerable groups

Vulnerable group	Measure Used	Breckland	King's Lynn & West Norfolk	East of England	England
Children and young people	% of residents aged under 18	19%	20%	22%	22%
Older people (Aged 65 and over)	% of residents aged 65+	25%	26%	20%	19%
Income-related groups	Unemployment rate	3.7%	3.9%	4.2%	4.9%
People with disabilities and long-term illnesses	% of residents disabled under Equality Act	20%	20%	17%	17%
Single-parent families	Single parent families with dependent children as a % of households	5%	5%	6%	7%
Ethnic minority	% of residents	11%	11%	22%	26%
Religious groups	% of residents identifying as having a religious belief	52%	54%	54%	57%
Source: ONS, 2025. Census 2021 ONS, 2025. Population estimates – local authority by single year of age					

14.2.4 Within the LCA, there are 62,700 residents who work in the construction industry, equivalent to 9.7% of all employed residents. This proportion is higher than the national average (8.7% of residents) but broadly in line with the regional average (10.0% of residents). Alternatively, using workplace-based data, there are 36,600 individuals working in the construction industry within the LCA, equivalent to 6.0% of total workers. The stark differential between the resident-based and workplace-based analysis suggests that a significant number of construction



workers who reside in the LCA commute out of the area for work. A comparison of workplace-based and resident-based data from 2021 indicates that at least 41.6% of construction workers who live in the LCA commute out of the area for work, significantly higher than the LCA average.

- 14.2.5 The Construction Industry Training Board (CITB) estimates that there will be a 0.8% yearly increase in the number of construction workers in the East of England between 2024 and 2028. Applying this figure to the LCA, it is estimated that the construction workforce will rise to 65,300 by 2028, a 4% increase from 2023. When the 2024 to 2028 growth rate of 0.8% is used as a best approximation, no available estimates for the growth of construction employment between 2028 and 2031, it is estimated that the construction workforce in the LCA will equal 66,800 in 2031, an increase of 7% from 2023. Overall, the LCA has a high proportion of residents employed in the construction industry and a relatively low unemployment rate across all age groups compared to the national average. Despite the high concentration of construction workers, construction employment growth in the LCA has been significantly lower than regional and national averages.
- 14.2.6 There is a well-established link between employment and health outcomes. Good quality work is associated with improvements in health, whilst unemployment is associated with poor health outcomes. Residents of King's Lynn & West Norfolk report higher levels of anxiety (an average score of 3.3) than the regional average (3.2), indicating that they may be particularly vulnerable to further increases. Breckland, meanwhile, reports levels of anxiety that are below the regional average (3.1). Overall, given the socio-economic context and existing health vulnerabilities within parts of the local population, there is potential for changes in employment to influence health outcomes, particularly in relation to mental health. The local prevalence of factors such as elevated anxiety and lifestyle-related health risks, and an above average proportion of the population with a disability, suggests a population that may be more susceptible to the wider effects of employment uncertainty.
- 14.2.7 Residents of Breckland and King's Lynn & West Norfolk have a lower level of qualifications compared to geographical comparators on average, with a higher proportion of residents achieving no qualifications, and a lower proportion of residents achieving Level 4 qualifications or above. Breckland, and King's Lynn & West Norfolk face a range of challenges with respect to education, skills and training. Residents of the two Local Authorities have lower levels of educational attainment than regional and national averages, are employed in professional and managerial occupations at lower rates, and receive lower hourly wages.
- 14.2.8 The Local Authority and the broader sub-region are predominantly rural areas, leading to a relatively higher reliance on cars and other private vehicles for transportation. In Breckland and King's Lynn & West Norfolk, 60% of residents drive a car or van to work, this is significantly higher than regional (48%) and national levels (45%)
- 14.2.9 The Local Area is host to a range of active travel routes including PRow's, major walking trails, and cycling routes. Peddars Way and Nar Valley Way, for example, are major walking trails that pass through the Local Area, intersecting by Castle Acre.
- 14.2.10 Tourism is a key economic contributor in the Local Area, with tourism-related employment making up a similar share of total employment as in King's Lynn & West Norfolk and a higher share than in Breckland. The proportion is also higher than the regional (10.0%) and national (9.5%) average. The ZTV (3km radius) features a diverse range of tourism assets from cultural to natural attractions, hosting five tourist attractions, including Castle Acre Priory and



Swaffham Museum. The Scheme is, however, predominantly set within agricultural land which, due to its existing use, is not in itself a key tourist attraction or destination.

14.2.11 These attractions are supplemented by the range of major walking and cycling routes that pass through, or nearby to, the Site. These routes include Peddars Way and Nar Valley Way, major walking routes that stretch from North to South and East to West across Norfolk respectively.

14.2.12 For a comprehensive overview of the baseline environment for socio-economic and human health matters referenced can be made to **Volume I, Chapter 14: Socio-Economics and Human Health**.

14.3 Mitigation Measures

14.3.1 Embedded mitigation measures are integrated into the design of the Scheme that are relevant to socio-economics and human health are as follows:

- Construction works which create dust will be kept to a minimum within proximity to existing pedestrian routes and residential properties, and dust prevention measures, such as damping, will be undertaken to reduce the impact on users of the PRow network (as will be secured within the CEMP submitted as a requirement of the DCO Application)
- Retention of the existing landscape fabric within and around the boundaries of the Site, namely mature hedgerows and tree cover which contribute to the landscape character of the local context
- Offset and buffering of the Scheme with new hedgerow and tree planting to mitigate potential views from the existing residential dwellings within close proximity to the Site
- In addition to the establishment of new hedgerow and hedgerow trees, the embedded mitigation also includes the retention, gapping up and enhancement of existing hedgerow within the Site. New planting species would be native, locally prevalent and also include a mixture of deciduous and evergreen species to provide year round screening. Alongside the existing hedgerow and trees within the Site's context, the gapping up of hedgerow with native trees and whips would provide visual screening of the Scheme from visual receptors within the wider study area, and from PRow and droves within the Site itself
- Setting back the Scheme from key landscape features within and adjacent to the Site Boundary, such as trees, hedgerow and woodland. The Scheme would be offset from existing PRow by a minimum of 15m, to respect the amenity and experience for PRow users along existing routes and allow for planting along the margins of the Scheme. Potential new planting is also proposed underneath the Solar PV panels which would enhance biodiversity within the Site
- Recreational enhancements such as the potential for new publicly accessible amenity space within the north-western area of the Site, that is connected to the existing PRow network. In addition to this, a number of new permissive routes are proposed, of approximately 5.0km in total, which would link to the existing PRow network within the Study Area to provide recreational benefits. This total number can be broken down to



approximately 1.2km new offsite permissive route provision and approximately 3.8km new onsite permissive route provision; and

- Internal access routes will be provided within the Site to minimise vehicles needing to use the Local Road Network (LRN) where possible. The details of this will be secured through the detailed design of the Scheme.

14.3.2 Embedded mitigation measures, particularly those relating to employment and skills and the supply chain, are currently developing as part of the Scheme design. Further refinement of embedded mitigation measures for the Scheme is ongoing and will be presented once confirmed in the ES for the submission of the DCO Application. Emerging employment and skills initiatives (mitigation and enhancement measures) are treated as additional mitigation for the purposes of the PEIR.

14.4 Assessment of Likely Significant Effects

Construction and Decommissioning Phase

Employment - Socio-economics

Construction Phase

14.4.1 The Scheme will create direct, indirect, induced, and local jobs during the Construction Phase.

- Direct jobs are those supported by Scheme activities on the Site
- Indirect jobs are those supported by the Scheme's supply chain
- Induced jobs are those supported by expenditure in the relevant area created by the Scheme's workers; and
- Local jobs are those supported by residents within the Travel to Work Area (TtWA).

Direct jobs

14.4.2 The Applicant estimates that the Construction Phase would support an indicative peak of approximately 740 construction jobs. In total, the Construction Phase would support approximately 1,245 construction jobs. Applying a displacement rate of 50%, it is estimated that there will be approximately 625 net direct jobs created during the Construction Phase.

Indirect and induced jobs

14.4.3 Based on the total of approximately 625 net direct jobs supported over the Construction Phase, and applying the uplifted regional construction multiplier (1.8), there are expected to be 525 net indirect and induced jobs supported through the Construction Phase.

Local jobs

14.4.4 Accounting for this leakage factor, the Scheme is estimated to support approximately 155-310 net direct jobs for residents in the LCA over the Construction Phase. This is equivalent to a 0.2%-0.5% uplift on the current baseline positions for residents in construction jobs in the LCA.



Net additional jobs

- 14.4.5 Taking the net direct and net indirect jobs together, the Scheme is expected to support 1,145 net additional jobs during the Construction Phase, with between 285 and 575 of these being taken by LCA residents.

Decommissioning Phase

- 14.4.6 The Decommissioning Phase is expected to start in 2093 and is assumed to support a lower number of direct, indirect, induced and local jobs than the Construction Phase. For the purposes of the PEIR, it is assumed that a workforce the size of approximately 50%-80% of the construction workforce would be required for the Decommissioning Phase. The ES will consider in more detail how many workers would be supported in the Decommissioning Phase of the Scheme once available.

Conclusion: Construction and Decommissioning Phase

- 14.4.7 Overall, the Scheme is considered to have a low magnitude of impact in relation to Construction and Decommissioning Phase jobs, as there is only estimated to be an uplift of 2.0% (during the Construction Phase) and between 1.0%-1.6% (during the Decommissioning Phase) on existing LCA residents working in construction with respect to approximate gross direct jobs and is likely to have a positive impact on health. On a medium sensitivity receptor, this leads to a **direct, temporary, minor beneficial** effect that is considered **not significant** during the Construction and Decommissioning Phase.

Employment – Human Health

Construction and Decommissioning Phase

- 14.4.8 Overall, the Scheme is considered to have a low magnitude of impact on human health in relation to jobs created during the Construction and Decommissioning phases. The temporary nature of the Construction Phase (24 months) and Decommissioning Phase means it is unlikely to influence long-term health outcomes. On a medium sensitivity receptor, this leads to a **direct, temporary, minor beneficial** effect that is considered **not significant** during the Construction and Decommissioning Phase.

Provision of education, skills and training – Socio-economics

Construction Phase

- 14.4.9 The Scheme will create substantial employment opportunities across a range of different occupation types in construction; however, these will be temporary due to the duration of the Construction Phase. The construction of the Scheme will support local jobs and provide opportunities for upskilling and training. It is expected that similar roles would be required during the Decommissioning Phase. The Scheme would also support a range of supply chain opportunities to local businesses. Where possible, the Scheme would seek to source materials and components from the local supply chain. The Applicant would aim to create partnerships between suppliers, manufacturers, and distributors, to maximise local economic benefits and stimulate economic activity with the LCA.



- 14.4.10 On a high sensitivity receptor, this leads to a **direct, temporary, moderate beneficial effect** in relation to education, skills and training for local residents and businesses that is considered **significant** during the Construction Phase.

Decommissioning Phase

- 14.4.11 It is expected that similar types of roles would be required during the Decommissioning Phase of the Scheme. For the purposes of the PEIR, it is assumed that a workforce the size of approximately 50%-80% of the construction workforce would be required for the Decommissioning Phase (and hence the numbers of available education, skills and training opportunities would naturally be lower). The ES will consider in more detail how many workers would be supported in the Decommissioning Phase of the Scheme once available.
- 14.4.12 On a high sensitivity, this leads to a **direct, temporary, minor beneficial** effect on education, skills, and training opportunities for local residents and businesses that is considered **not significant** during the Decommissioning Phase.

Provision of education, skills and training - Human Health

Construction Phase

- 14.4.13 Residents of Breckland and King's Lynn & West Norfolk have a lower level of qualifications compared to geographical comparators on average, with a higher proportion of residents achieving no qualifications, and a lower proportion of residents achieving Level 4 qualifications or above. The impact from the Scheme is likely to have a positive impact on mental health for residents as there would be a greater opportunity for them to upskill. In addition, with greater employment opportunities in the area, it would encourage younger residents to stay in the area rather than move away, which is another concern identified by local authorities
- 14.4.14 On a medium sensitivity, this leads to a direct, temporary, **moderate beneficial** effect in relation to education, skills and training for local residents and businesses that is considered **significant** during the Construction Phase.

Decommissioning Phase

- 14.4.15 It is expected that the impact from the Scheme during the Decommissioning Phase is likely to have a positive impact on mental health for residents as there would be a greater opportunity for them to upskill. In addition, with greater employment opportunities in the area, it would encourage younger residents to stay in the area rather than move away, which is another concern identified by Local Authorities. However, as the decommissioning workforce is expected to be approximately 50%–80% of the size of the construction workforce, the overall magnitude of impact is likely to be lower than during the construction phase. Furthermore, given the 60-year timescales on this effect, there is far less certainty regarding the extent to which initiatives to support education, skills and training could be achieved.
- 14.4.16 On a medium sensitivity, this leads to a **direct, temporary, minor beneficial effect** in relation to education, skills and training for local residents and businesses that is considered **not significant** during the Decommissioning Phase.



Changes in demand for temporary worker accommodation - Socio-economic

Construction and Decommissioning Phase

- 14.4.17 It is conservatively estimated that between 50-75% of the construction workforce would come from outside of the LCA and therefore, may require temporary accommodation during the Construction Phase. At the peak of the Construction Phase used for assessment (Q2 2032), it is estimated that 740 workers will be onsite. Applying a leakage of 50%-75% suggests that between 370-555 construction workers at peak would come from outside of the LCA and seek temporary accommodation. This is a reasonable worst-case scenario given that potential displacement of workers from other construction projects in the LCA is not factored into this calculation.
- 14.4.18 Although the decommissioning workforce is expected to be approximately 50%–80% of the size of the construction workforce, the assessment of potential changes in demand for temporary worker accommodation during the Decommissioning Phase has been based on the Construction Phase estimates. This approach ensures a worst-case scenario assessment.
- 14.4.19 Given the low sensitivity of the receptor, this leads to a **direct, temporary, minor adverse** effect that is considered **not significant** during the Construction and Decommissioning Phases.

Effect on land uses – Socio-economics

Construction and Decommissioning Phase

- 14.4.20 The Construction Phase of the Scheme will lead to a temporary loss of agricultural land. Most of the Site boundary is grassland and is actively farmed. **Volume I, Chapter 11: Soils and Agriculture** concludes that the construction phase of the Scheme will lead to a temporary loss of agricultural land. Whilst some agricultural activities will likely temporarily stop during the construction phase, it is expected that some agricultural practices such as sheep grazing will be able to continue on a rotational basis, aligned with the construction phasing. Whilst the Scheme has the potential to reduce agricultural incomes for farm businesses affected during the Construction Phase, this is countered by the alternative incomes received by the leasing of the land for the Scheme, which would lead to an overall beneficial impact for these landowners.
- 14.4.21 It has been conservatively assumed that the decommissioning phase mirrors the construction phase in terms of magnitude of impact for the effect on land uses. This represents a worst-case scenario, as it assumes continued displacement of agricultural land during the Decommissioning Phase.
- 14.4.22 Interviews will be carried out with the agricultural landowners to better understand the expected socio-economic impacts on their farming operations.
- 14.4.23 The Scheme will result in the loss of some agricultural activity. However, it is anticipated that alternative income and some of the agriculture practices, would help to offset some of the losses experienced by affected farmers. Given the medium sensitivity, this leads to a **direct, temporary, minor adverse** effect that is considered **not significant** during the Construction and Decommissioning Phases. This is a preliminary conclusion that will be refined in the ES following further engagement with landowners



Effect on land uses - Human Health

- 14.4.24 The UK is heavily reliant on imports to meet consumer demand for fruits and vegetables, and that approximately 40% of all food is imported rather than produced domestically. As a large part of diet and nutrition is mostly dictated by macro trade factors, it is not likely that any potential loss of agricultural land at this scale would have a likely significant effect in this instance. Similarly, the Site may benefit from a break from cultivation and improved soil health, once the land is returned to agricultural production at the end of the Decommissioning Phase.
- 14.4.25 The UK Food Security Report finds that food production levels could be maintained or moderately increased alongside the land use change required to meet our Net Zero and Environmental Act targets and commitments.
- 14.4.26 For this assessment, it has been conservatively assumed that the decommissioning phase mirrors the construction phase in terms of magnitude of impact for the effect on land uses. This represents a worst-case scenario, as it assumes continued displacement of agricultural land during the Decommissioning Phase.
- 14.4.27 As such, the change in land use is not expected to impact the diet or nutrition of the local residents and it is unlikely that these land use changes would have any impact on residents' health. Given the low sensitivity, this leads to a **direct, temporary, negligible** effect that is considered **not significant** during the Construction and Decommissioning Phases.

Changes in commuting patterns - Socio-economic

Construction and Decommissioning Phase

- 14.4.28 **Volume I, Chapter 9, Transport and Access** confirms that most vehicle trips associated with the Scheme will occur outside of peak network hours (08:00–09:00 and 17:00–18:00), except in emergencies or exceptional circumstances. **Chapter 9** concludes that the Scheme would have a local, temporary, medium-term, and negligible adverse effect on driver delay, which is not significant. Similarly, regarding pedestrian delay, **Chapter 9** finds that during the Construction Phase, the Scheme will result in less than a 10% increase in annual average daily traffic. This falls within the normal range of daily traffic fluctuations and is therefore considered not significant.
- 14.4.29 Although the decommissioning workforce is expected to be approximately 50%–80% of the size of the construction workforce, the assessment of potential changes in commuting patterns during the decommissioning phase has been based on the construction phase estimates. This approach ensures a worst-case scenario assessment.
- 14.4.30 From a socio-economic perspective, the Construction and Decommissioning Phases are unlikely to disrupt commuting patterns in a way that would prevent employees or shoppers from accessing businesses. Given the medium sensitivity, this leads to a **direct, temporary, and negligible** effect that is considered **not significant** during the Construction and Decommissioning Phases of the Scheme.



Physical Activity – Human Health

Construction and Decommissioning Phase

- 14.4.31 **Volume III, Appendix 6.9, Amenity and Recreation** identifies that most construction effects are likely to arise due to perceptual or actual changes during the Construction Phase as a result of the construction activities such as operation of plant and movement of materials. Chapter 6: Landscape and Visual identifies potential impacts during the Construction and Decommissioning Phases among various different visual receptors (including motorists on local roads, users of rights of way and local residents or visitors to settlements). It is stated that effects during Construction and Decommissioning Phase would be temporary and short-term and would be of medium-low magnitude, resulting in moderate adverse effects that are significant.
- 14.4.32 For this assessment, it has been conservatively assumed that the decommissioning phase mirrors the construction phase in terms of magnitude of impact for physical activity. This represents a worst-case scenario, as it assumes there is a potential for temporary closures or diversions may be required for a very limited time period during the Decommissioning Phase.
- 14.4.33 As a result, the Scheme is not expected to have any physical impact on access to PRoW during the construction phase. While some visual impacts may deter individuals from using the PRoW, these are expected to be limited. Given the medium sensitivity, this leads to a **direct, temporary, minor adverse** effect that is considered **not significant** during the Construction and Decommissioning Phase.

Operational Phase

Provision of education, skills and training - Socio-economics

- 14.4.34 The Scheme will support limited operational employment opportunities (due to the nature of the development), that consist of operation and maintenance crews (including technical professions such as electrical engineers and performance managers), landscaping, and occasional repair teams. As in the Construction Phase, the jobs supported would also support long-term skills development for local residents. Many of the skills that will be developed among local residents will support career opportunities across the sector in the future.
- 14.4.35 Overall, on a high sensitivity receptor, this leads to a **direct, long-term, negligible** effect in relation to education, skills and training for local residents and businesses that is considered **not significant** during the Operational Phase of the Scheme

Provision of education, skills and training – Human Health

- 14.4.36 The impact from the Scheme on health during the Operational Phase is likely to have a positive impact on mental health for residents. This is based on evidence showing that access to education and training opportunities can improve mental wellbeing by offering a sense of security, purpose, and personal development. Awareness of future employment opportunities in the area may motivate some residents to develop their skills in preparation, contributing to improved confidence and optimism about the future.
- 14.4.37 Overall, on a medium sensitivity receptor this leads to a **direct, long-term, negligible** effect in relation to education, skills and training for local residents and businesses that is considered **not significant** during the Operational Phase of the Scheme.



Effect on land uses – Socio-economics

- 14.4.38 As noted in the Volume I, Chapter 11, Soils and Agriculture, once the Scheme is operational, there is potential for the land to continue to be used for agricultural purposes and be farmed by way of sheep grazing, or fodder production with associated land management of the grassland. The design of the Scheme has been chosen to enable agricultural uses.
- 14.4.39 Whilst the Scheme has the potential to reduce agricultural incomes for farm businesses affected during the Operational Phase, this is countered by the alternative incomes received by the leasing of the land for the Scheme, which would lead to an overall beneficial impact for these landowners.
- 14.4.40 Given the medium sensitivity, this leads to a **direct, long-term, minor adverse** effect that is considered **not significant** during the Operational Phases. This is a preliminary conclusion that will be refined in the ES following further engagement with landowners. It is known that the Scheme will result in the loss of some agricultural activity. However, it is anticipated that alternative income, would help to offset some of the losses experienced by affected farmers

Effect on land uses – Human Health

- 14.4.41 Throughout the Operational Phase, agricultural uses could still be supported. At this stage it is not known the level or type of agricultural output that would be supported, however as 42% of the existing land is not BMV any potential impact on diet and nutrition is likely to be low.
- 14.4.42 As such, the change in land use is not expected to impact the diet or nutrition of the local residents and it is unlikely that these land use changes would have any impact on residents' health. Given the low sensitivity of the receptor, this leads to a **direct, long-term, negligible effect** that is considered **not significant** in relation to effect on the effect of land uses with regards to human health, that is considered not significant during the Operational Phase

Changes to local tourism assets - Socio-economics

- 14.4.43 The Scheme would not directly impact tourism assets as there are no tourism assets on Site, however it will likely indirectly adversely impact the visual amenity of a limited number of local tourism assets, with the effect likely to reduce throughout the Operational Phase through embedded mitigation measures.
- 14.4.44 Volume III, Appendix 6.9, Amenity and Recreation assesses the effects on visual amenity in mid to long distance views. This would specifically impact the view from Castle Acre. The assessment concludes that the visual impact from Castle Acre would reduce from moderate to slight in the long-term as hedgerow grows with time.
- 14.4.45 The extent of large visual effects, where the Scheme would form major alterations to key elements, features, qualities and characteristics of the landscape, would generally be limited to the land within the Site . Based on this, it is unlikely that changes to recreational and visual amenity associated with local tourism assets and PRoWs would affect overall tourist visits to the LA.
- 14.4.46 The PEIR assessment is based on parameter plans, and further design evolution will take place following statutory consultation. This preliminary assessment should be considered a worst-case assessment, with the effect conservatively concluded on. More work will be done in the ES to further understand the impact on individual tourism assets.



14.4.47 At this stage, it is expected that the impact of the Scheme overall on local tourism assets on current and future residents, visitors and businesses would be low. On a medium sensitivity receptor, this leads to a **direct, long-term, minor** adverse effect that is considered **not significant** during the Operational Phase of the Scheme.

Physical activity – Human health

14.4.48 Volume III, Appendix 6.9, Amenity and Recreation Assessment outlines that a key benefit of the Scheme is the creation of 5.0 km of new permissive paths, improving access to previously inaccessible land and integrating with the wider PRoW network to provide off-road alternatives for pedestrians and cyclists. These paths include 1.2 km of off-site permissive routes, enhancing links beyond the Site, and 3.8 km of on-site permissive routes (a 36% uplift of existing pathways in the Site area), improving connectivity within the Site itself. Along these new routes, the Scheme will introduce nature areas, interpretation boards, and wayfinding signage to encourage engagement with and understanding of the natural environment.

14.4.49 Given the medium sensitivity of the receptor, this leads to a direct, long-term, moderate beneficial effect in relation to physical activity with regards to human health, that is considered **significant** during the Operational Phase of the Scheme.

14.5 Additional Mitigation

14.5.1 The Preliminary Employment and Skills Plan (PESS) provides an initial outline of the range of broad commitments the Applicant is considering making towards supporting local jobs and skills, including supporting apprenticeship opportunities during the duration of the Scheme, engaging local education providers to maximise opportunities for local residents, and offering local procurement opportunities to businesses. The PESS provides broad commitments under consideration by the Applicant related to employment and skills initiatives associated with the Scheme in the construction and operational phases. Additional mitigation measures will be developed and confirmed with the Applicant and reflected in the ES.

14.5.2 The following sets out a longlist of potential initiatives that are currently being explored, drawing on precedent from similar schemes. This list provides an early indication of the Applicant's ambition and areas of focus. As the Scheme evolves, and in response to ongoing consultation, the initiatives will be refined and developed further, with consideration given to which are the most achievable and the mechanisms for securing their delivery. The Outline Employment and Skills Strategy (OESS), to be submitted with the DCO Application, will set out a refined list of commitments with further detail, along with the steps required to ensure they are effectively secured and implemented:

- Collaborate with council initiatives such as the Boost Programme, Careers Hub, and the Breckland Skills Assembly
- Collaborate with other projects to coordinate on skills and employment commitments
- Partner with local education institutions
- Graduate trainee programmes
- Work with STEM organisations
- Delivery of construction and operational apprenticeships



- Green energy construction courses
- Educational outreach on solar energy
- Offer site tours during the operational phase for schools and colleges
- Summer internship and research programmes
- Sponsoring secondary or college students
- Source main construction services from local contractors and sub-contractors
- Advertising jobs on local job boards
- Provide local jobs
- Green energy awareness campaigns; and
- Skills workshops for local residents.

14.6 Residual effects

- 14.6.1 The impact of education, skills and training during the Construction, Operational, and Decommissioning Phases increases after considering the likely additional employment and skills related additional mitigation presented above. For the provision of education, skills and training during construction, the magnitude of impact rises from medium to high from both a socio-economic and health perspective, which on a high sensitivity leads to a residual effect that is major beneficial and significant. For education skills and training during operation of the Scheme the impact magnitude increase from negligible to low from a socio-economic and health perspective, which on a high sensitivity leads to a moderate beneficial effect that is significant. For education skills and training during decommissioning of the Scheme the impact magnitude increase from low to medium from a socio-economic and health perspective, which on a medium sensitivity leads to a moderate beneficial effect that is significant.
- 14.6.2 All other residual effects are the same as the effects presented above as likely significant effects.



15 Other Environmental Matters

15.1 Introduction

15.1.1 **Volume I, Chapter 15 Other Environmental Matters** has considered the findings of the likely significant environmental effects of the Scheme in relation to other environmental topics that do not warrant individual chapters. This either due to the brevity of the assessment, or lack of likely significant effects that they have been scoped out of the ES but not the EIA associated with the Scheme. This includes the methods used to assess the effects; the existing baseline conditions at the Site and surrounding areas; the mitigation measures required to prevent or reduce any significant effects and the likely residual effects after adopting these measures.

15.1.2 The following topics have been considered at PEIR stage:

- Air Quality
- Glint and Glare
- Electromagnetic Fields (EMF)
- Telecommunications, Utilities and Television Receptors; and
- Waste.

Air Quality

15.1.3 Dust emissions associated with construction and decommissioning activities will be controlled through mitigation measures outlined in the outline oCEMP and oDEMP. With the inclusion of the mitigation outlined in the CEMP and DEMP, potential dust emissions associated with on-site activities during Construction and Decommissioning Phases are **not anticipated to be significant**.

15.1.4 Vehicle traffic emissions produced during the Construction Phase will be controlled through mitigation measures outlined in the outline Construction Traffic Management Plan (oCTMP). The oCTMP will include details on construction logistics and construction worker travel, alongside providing information to guide the delivery of material, plant, equipment, and staff during the Construction Phase. In addition, measures to minimise dust emissions arising from vehicles entering/exiting the Site during the Construction Phase and Decommissioning Phase will be put in place, such as wheel washing facilities at entrance locations, which will be committed to and controlled through mitigation measures outlined in the oCEMP, and oDEMP, submitted in support of the DCO Application, secured in full by the DCO Application.

15.1.5 Construction traffic vehicle movements will be reviewed as the details of the design of the Scheme is progressed up to the submission of the DCO Application. The ES will provide an updated statement, supported by information on expected vehicle movements and the locations of the nearest sensitive receptors, as to why effects during construction and decommissioning would not be significant. If the updated construction traffic vehicle movements for the ES do exceed the threshold criteria for detailed assessment, detailed dispersion modelling of traffic impacts to nearby sensitive receptors will be assessed quantitatively and presented in the ES. Given the low number of vehicle movements, as well



as the dust control measures, the release of dust and particulate matter as a result of Construction Phase and Decommissioning Phase are **not anticipated to be significant**.

- 15.1.6 The ES will confirm the type, quantity, use and duration of the Non-Road Mobile machinery (NRMM) used during the Construction and Decommissioning Phases. All NRMM used will be required to adhere to the latest emissions standards, which will be detailed and controlled through the oCEMP and oDEMP, submitted in support of the DCO Application, which will be secured in full by a requirement in the DCO Application. With these measures in place, **significant effects** as a result of NRMM emissions are **not likely**.

Glint and Glare

- 15.1.7 The location of the Scheme is rural, surrounded by roads, dwellings, PRow, and airfields.

Construction and Decommissioning Phases

- 15.1.8 During the Construction Phase, the PV panels will be installed over the duration of the construction programme until they represent the presence of the Operational Phase. As the Scheme is constructed and PV panels are installed, there is the potential for glint and glare impacts on the identified receptors as detailed for the assessment of Operational Phase impacts.
- 15.1.9 During the Decommissioning Phase, the PV panels will be removed over the duration of the decommissioning programme. As the Decommissioning Phase progresses, there is the potential for glint and glare impacts from the PV panels that have not been removed yet; however, as a worst-case scenario, these impacts would be of the same level as identified during the Operational Phase, when the maximum number of PV panels are present.
- 15.1.10 As concluded in the Operational Phase assessment, there are no likely significant effects during the Operational Phase, when the Scheme has the highest potential for glint and glare impacts. As a result, during the Construction and Decommissioning Phase there is not the potential for likely significant effects.

Operational Phase

Aviation Receptors

- 15.1.11 Solar reflections with 'potential for temporary after-image' are predicted to be geometrically possible towards the ATC Tower and approach path for runway 05 at RAF Marham for the Fixed South Facing PV panel configuration. Solar reflections with 'potential for temporary after-image' are predicted towards the approach paths for runways 01 and 05 at RAF Marham for the Single Axis Trackers PV panel configuration. Consultation will be undertaken with RAF Marham to confirm if views of the site will be possible and position towards the Scheme prior to ES, the outcome of which will be incorporated into the ES.
- 15.1.12 Solar reflections with 'potential for temporary after-image' are predicted towards receptors on the approach paths and visual circuits (specified paths to be flown by aircraft operating in the vicinity of an aerodrome) at Great Friar Thornes Farm Airfield for both Fixed South Facing and Single Axis Trackers PV panel configurations. The effects have been considered in an operational context and may be considered operationally accommodatable. The impact is not considered to be significant but consultation with the airfield will be undertaken to understand their position towards the Scheme. If mitigation is required for aviation receptors, this would



take the form of changes to the PV configuration (i.e. removal and/or reorientation of PVs). Specific mitigation will be confirmed in the ES, if significant impacts are identified.

- 15.1.13 A low impact is predicted towards aviation activity associated with East Winch Airfield and Great Massingham Airfield. It is considered that solar reflections towards East Winch Airfield and Great Massingham Airfield would constitute a low impact in the worst-case due to the distance between the airfields and the Scheme, and previous project experience. Impacts are considered to be not significant.

Road receptors

- 15.1.14 Solar reflections are predicted to occur within a road user's primary field-of-view (50° either side of the direction of travel) towards a 2.2km section of the A1065 for the Single Axis Trackers PV panel configuration being considered (see **Volume I, Chapter 5: Scheme Description** for detail on components). Embedded vegetation planting and hedgerow reinforcement has been proposed which would significantly screen views once matured. Impacts are considered to be not significant, considering the proposed planting once matured (maturity considered to be 2m) but **significant impacts** may be possible temporarily, therefore additional mitigation has been identified, until vegetation reaches the required height.

Dwelling receptors

- 15.1.15 A low impact is predicted towards residential amenity associated with dwellings for both Fixed South Facing PV and Single Axis Trackers PV panels configurations being considered where reflections are predicted to occur for more than three months per year but less than 60 minutes on any given day in the presence of mitigating factors. This is considered **not significant**

Viewpoint Receptors

- 15.1.16 A low impact is predicted towards users of Public Rights of Way (PRoW) in the vicinity of the scheme. It is considered that solar reflections towards PRoW would constitute a low impact in the worst-case as there are no significant safety implications and any negative impact upon amenity will be fleeting for users travelling on PRoW. This is considered **not significant**.

Additional Mitigation

- 15.1.17 As identified above, for road receptors along the A1065, a temporary significant impact may be possible until vegetation matures to a sufficient height. The following additional mitigation measures are being considered by the Applicant's design team for the most appropriate to mitigate the potentially significant effect:
- Mature planting along this section, sufficient in height to mitigate significant impacts, established by the start of the Operational Phase;
 - Short-term installation of opaque fencing in the required areas (which would be in place until the vegetation reaches the required height);
 - Programming single-axis panels to backtrack to an angle where solar reflections are not possible during the time where effects are predicted; and
 - Providing fixed south facing panels only in the areas where the reflections are predicted to occur from.



15.1.18 The additional mitigation strategy will utilise the options listed above and include one or multiple of the options to mitigate the effect. The Applicant is committed to mitigating the short-term potentially significant effect on Road Users along the A1065 and will continue to develop and consult on the optimum strategy. With this mitigation commitment, there are **no significant effects** likely on Road Users of the A1065 in respect of glint and glare.

Electromagnetic Fields (EMF)

15.1.19 Design measures for the avoidance of significant effects have been built into the Scheme and, as is concluded in the preliminary EMF Risk Assessment (**Volume III, Appendix 15.4**), significant effects are not likely in respect of EMF.

15.1.20 The High-Level Electromagnetic Field Assessment undertaken at the PEIR stage includes information regarding the routing and voltages of Low and High Voltage Cables (ranging up to 400kV) and infrastructure over 132kV. The High-Level Electromagnetic Field Assessment has considered EMF in relation to the following Scheme infrastructure:

- Low and high voltage underground and overground cables (specifically those that exceed 132kV up to 400kV);
- Customer Substation;
- National Grid Substations; and
- BESS.

15.1.21 As concluded in the High-Level Electromagnetic Field Assessment (**Volume III, Appendix 15.4**) there is not the potential for significant effects as a result of the Scheme in respect of EMF.

Telecommunications, Utilities and Television Receptors

15.1.22 Effects relating to existing infrastructure are not environmental effects and there is no requirement to include an assessment of these effects under the EIA Regulations. However, given the nature of solar farm developments, they have the potential to affect existing utility infrastructure above and below ground.

15.1.23 Due to the size, scale and nature of the Scheme, as detailed in **Volume I, Chapter 5: Scheme Description**, it is considered there is limited potential for likely significant effects on all above ground telecommunications, utilities and television infrastructure. However, solar farms have the potential to affect existing below ground utility infrastructure, for example, through 'cable strike' when piling for Ground mounted PV Modules or excavating the cable trenches.

15.1.24 There are a number of underground utility assets and pipelines within the Site.

15.1.25 The design of the Scheme has been informed by topographical and geophysical survey data to ensure underground utilities are adequately offset from.

15.1.26 Following the application of the mitigation measures outlined in Volume 1, Chapter 15: Other Environmental Matters, the Scheme is not expected to have any adverse impacts on below ground telecommunication, television, or utilities.



Waste

15.1.27 The land within the Site is predominately in agricultural use, being utilised in part for pig farming, chickens and other livestock, and in part for arable crop production across agricultural fields. The existing waste arisings are assumed to be low.

15.1.28 Through iterative and detailed assessments, potential impacts will be evaluated, and mitigation opportunities will be further refined to prevent or reduce impacts as much as possible. This proactive approach aims to minimise potential adverse impacts from the beginning.

Construction Phase

15.1.29 The Scheme will aim to minimise and eliminate waste streams wherever possible. Opportunities for reusing material resources will be pursued. When reuse and prevention are not feasible, waste will be managed according to the waste hierarchy and detailed in the CEMP. The CEMP will incorporate industry-standard practices and control measures to address environmental impacts during construction, such as dust control and on-site material and waste management. The CEMP will be secured through DCO before the commencement of the construction phase.

15.1.30 Once appointed, details of the waste carriers and contractors for the Scheme, along with copies of their appropriate licenses, will be included in an outline Construction Resource Management Plan (oCRMP) will be developed by the appointed contractor and submitted in the ES and in support of the DCO Application.

15.1.31 An assessment on the capacity of waste management infrastructure in the vicinity of the Scheme will be undertaken ahead of submission of the DCO Application. The likely anticipated waste stream quantities will be included to determine the likely effects caused on the receptors. At this stage with the information that is available and considering similar type and scale of schemes, it is not considered, no significant effects are anticipated at this stage.

Operational Phase

15.1.32 During operation and replacement, the Scheme will prioritise waste prevention, followed by preparation for reuse, recycling, and recovery, with landfill disposal as the last resort, in line with the waste hierarchy. A Site Waste Management Plan (SWMP) will be developed as part of the OEMP. The SWMP, to be prepared before construction begins, will detail the efficient management, storage, and legal disposal of materials during the Operational Phase, including the maintenance and replacement. It will also outline the aims, objectives, and ongoing management responsibilities, including practices for management and storage, and set targets for waste reduction, landfill diversion, and reuse.

15.1.33 All waste management will comply with relevant regulations, and waste will be transported by licensed hauliers to authorised waste management sites with the necessary permits for the consigned wastes.

15.1.34 It is anticipated that the Scheme will generate Waste from Electrical and Electronic Equipment (WEEE) during both operation and maintenance phases, and a significant amount during decommissioning. This includes photovoltaic panels, batteries, substation equipment, and smaller quantities from supporting electrical infrastructure. These items will be recovered and



recycled by an authorised re-processor in compliance with the WEEE Regulations 2013 which will be detailed in the OEMP.

- 15.1.35 A full assessment of waste arising during the Operational Phase will be provided in the ES. Considering the approaches to similar type and scale of Schemes, the waste impacts will be long term however considering embedded mitigation measures and good and best practice waste recovery at the time of writing and at decommissioning and likely recycle opportunities, it is not considered that there is the potential for likely significant effects as a result of replacement activities.

Decommissioning Phase

- 15.1.36 During the Decommissioning Phase, PV panels and related built infrastructure, ancillary infrastructure, substations and energy storage will be removed, recycled, recovered or disposed of in accordance with good practice and market conditions at that time. The Scheme is anticipated to generate WEEE however, recycling and recovering of these items will be detailed in the DEMP.
- 15.1.37 The decommissioning of the Scheme will adhere to the measures and procedures outlined in a DEMP, secured through the DCO. A Decommissioning Resource Management Plan (DRMP) will be developed by the appointed contractor and will set out how measures to manage the disposal of waste may be required in accordance with relevant legislative and policy requirements at the time of decommissioning and submitted in the ES and in support of the DCO Application.
- 15.1.38 An assessment on the capacity of waste management infrastructure in the vicinity of the Scheme will be undertaken in the ES and submitted in support of the DCO Application submission. The likely anticipated waste stream quantities will be included to determine the likely effects caused on the receptors. At the Decommissioning Phase, the Scheme will produce additional waste than at the Construction Phase due to the equipment that will need to be removed. At this stage with the information that is available, and the unknowns around the process and level of recycling processes which will be available at the time of decommissioning, with an assumption that future waste management practices no less equal to recycling process at the time of writing, it is not considered that there is the potential for likely significant effects during the Decommissioning Phase. This conclusion will be further clarified and assumptions underpinning provided in the ES when more information on the Scheme design is known.



16 Cumulative Effects

16.1 Introduction

16.1.1 The Cumulative Effects Assessment (CEA) will be undertaken in accordance with PINS Advice on Cumulative Effects Assessment (September 2024) and will consider two types of cumulative effects:

- In-combination effects - the inter-relationship between individual development effects, for example, noise, dust and visual on one particular receptor; and
- Cumulative effects - multiple existing and/or approved developments generating additive effects which together have an increased effect on the same receptors.

In-combination Effects

16.1.2 A summary of potential likely in-combination effects is provided within **Volume I, Chapter 16, In-Combination Effects** of the PEIR to provide a preliminary summary of effect interactions between topics assessed in the main PEIR chapters, setting out the inter-relationship arising as a result of direct effects from other environmental topics.

16.1.3 In summary, the significant in-combination effects identified within the PEIR are:

16.1.4 Construction and Decommissioning Phase noise, vibration, and visual impact on Residential Properties and Public Rights of Way represented by Visual Receptor Groups 1, 2 and 3, as well as The Peddars Way and Norfolk Coastal Path, and Rebellion Way Cycle Route;

16.1.5 Operational Phase noise and visual impact in the medium term on Residential Properties represented by Visual Receptor Groups 1 and 3, and Public Rights of Way represented by Visual Receptor Groups 1 and 2;

- Operational visual impact, cultural heritage, and socio-economic impacts the medium and long term on Castle Acre Priory and Castle Acre Castle; and
- Operational long term noise and visual impact on Public Rights of Way represented by Visual Receptor Group 2.

16.1.6 The ES will set out a table demonstrating where multiple effects from the Scheme would combine to affect sensitive receptors, which will explain what mitigation measures are proposed and how such mitigation may have an in-combination effect across several topics.

Cumulative Effects

16.1.7 Each topic chapter within the ES will set out how the particular topic area has considered and assessed the cumulative effects arising as a result of other existing or proposed development that will be set out in the long and short lists for the EIA.

16.1.8 The Cumulative Effects Assessment will adopt a four-staged approach. Stage 1 establishes a long list of other existing and/or approved development for the preliminary environmental assessment. The preliminary long list and short lists will be finalised with input from Statutory Consultation. This ensures all developments with potential significant cumulative effects, when



considered with the Scheme, are included in the environmental assessments. At Stage 2, a short list will be established from the preliminary short list of other existing and/or approved development. Developments unlikely to cause significant cumulative effects will be excluded after review by environmental specialists

- 16.1.9 Stage 3 will look to gather and review information on the final shortlisted developments, including their design, location, and programme of construction, operation, and decommissioning, as well as any environmental assessments that set out baseline data, and effects arising from other existing and / or approved development. Stage 4 will involve a proportionate assessment of the cumulative effects of the Scheme with the other existing and / or proposed developments identified in Stage 1 to 3.
- 16.1.10 The ES will report the assessment results, focusing on significant cumulative effects and the need for mitigation. These effects will be detailed in individual technical chapters, with full details of Stages 1 to 4 and the final development list outlined in as part of the ES.
- 16.1.11 The potential for cumulative effects has been considered in the preliminary assessment for a number of topic chapters.
- 16.1.12 A full assessment of the cumulative effects of the Scheme with other identified developments will be included in the ES.



17 Summary and Conclusions

- 17.1.1 The PEIR explains the preliminary findings of the environmental assessments that have been undertaken for the Scheme.
- 17.1.2 A number of design and mitigation measures have been identified to mitigate and control environmental effects during the Construction, Operation (including maintenance and replacement) and Decommissioning Phases of the Scheme. These will be secured through appropriate requirements and other controls within the DCO for the Scheme.
- 17.1.3 Feedback from the formal consultation process will be taken into account when finalising the design of the Scheme and preparing the ES that will be submitted with the DCO Application.



The Drovers Solar Farm – Preliminary Environmental Information Report
Non-Technical Summary
May 2025