

SIX OAKS RENEWABLE ENERGY PARK

Environmental Statement Volume 1 - Non Technical Summary

PREPARED ON BEHALF OF

Six Oaks Renewable Energy Park Limited

OCTOBER 2022



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PREFACE

This Written Statement forms the second part of a four volume, five part Environmental Statement which describes the findings of the Environmental Impact Assessment (EIA) of the proposed Six Oaks Renewable Energy Park. The volumes of the complete document are:

Document	Title	Contents
Volume 1	Non-Technical Summary	Summarises the proposal and the key conclusions of the EIA for the non-technical reader
Volume 2A	Written Statement	Presents the full assessments of the EIA
Volume 2B	Appendices	Presents the appendices referred to in the Written Statement
Volume 3	Figures	Presents the figures referred to in the Written Statement
Volume 4	Visualisations	Presents the visualisations referred to in the Landscape and Visual Impact Assessment (LVIA) within the Written Statement

In addition to the Environmental Statement, the Applicant has submitted a Planning Statement which summarises the planning policy context of the proposal. A Design and Access Statement as well as a supporting Socio Economics Statement, Transport Statement and environmental assessments undertaken outside of the EIA regulations also accompany the planning application.

A complete set of application documents can be viewed in person at East Cambridgeshire District Council, The Grange Car Park, Nutholt Lane, Ely CB7 4EE or South Cambridgeshire District Council, South Cambridgeshire Hall, Cambourne Business Park, Great Cambourne, Cambourne, Cambridge CB23 6EA or downloaded from the project website, as detailed in the box below.

Printed copies can be purchased at a cost of £500+VAT or digital versions, either as a download or on a USB Stick free of charge.

To order copies, please contact Engena Limited at:

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The Applicant may also be contacted at:

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Six Oaks Renewable Energy Park

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NON-TECHNICAL SUMMARY INTRODUCTION

- A.1 The Environmental Impact Assessment (EIA) for this project provides a thorough, independent and objective assessment of the proposal identifying its anticipated significant impacts. Additional non-EIA assessments accompany the planning application.
- A.2 Part A of this EIA Non-Technical Summary describes the elements that constitute a renewable energy park, the development process and the proposal itself.
- A.3 Part B summarises the findings of the EIA assessments.
- A.4 Please note that this document is a summary of the key issues and findings identified by the Environmental Impact Assessment. For full details of all the findings of the studies involved in the Environmental Impact Assessment of this project, as well as full details of the methodologies used in these studies, please refer to **Volume 2A, the Written Statement** (and the accompanying appendices, **Volume 2B**) and also **Volume 3 (Figures)** and **Volume 4 (Visualisations)**. Relevant **Volume 2** chapter numbers are provided within the section titles of this report.



PROJECT INTRODUCTION

- A.5 The Six Oaks Renewable Energy Park (the Proposal) consists of an array of ground-mounted solar panels and ancillary infrastructure including inverters, with an installed AC capacity of up to 49.9MW; a Battery Energy Storage System (BESS) sized at 50MW; and, a substation compound comprising a DNO Control Room, Solar and BESS Substation Containers and electrical infrastructure.
- A.6 The 76 hectare site is to the south east of Bottisham, Cambridgeshire, on arable land between the A14 and A11. **Figure 1.1** of **ES Volume 3** shows the site location and **Figure 1.2** shows the site layout. These are provided as **Plate A.1** on page 4 and **Plate A.2** on page 5 respectively.
- A.7 The Proposal would take approximately nine months to construct, have an operational lifetime of 40 years, and be decommissioned after the operational period, with the land being returned to its current agricultural use.
- A.8 The Applicant for the Proposal is Six Oaks Renewable Energy Park Limited, a project company owned by Ridge Clean Energy Limited, a UK- based clean energy company whose team have developed, constructed and operated clean energy projects in the UK since 2003. Engena Limited, an independent planning consultancy with over 1GW of development experience in the renewable energy industry, is supporting Ridge Clean Energy Limited with the provision of planning services.

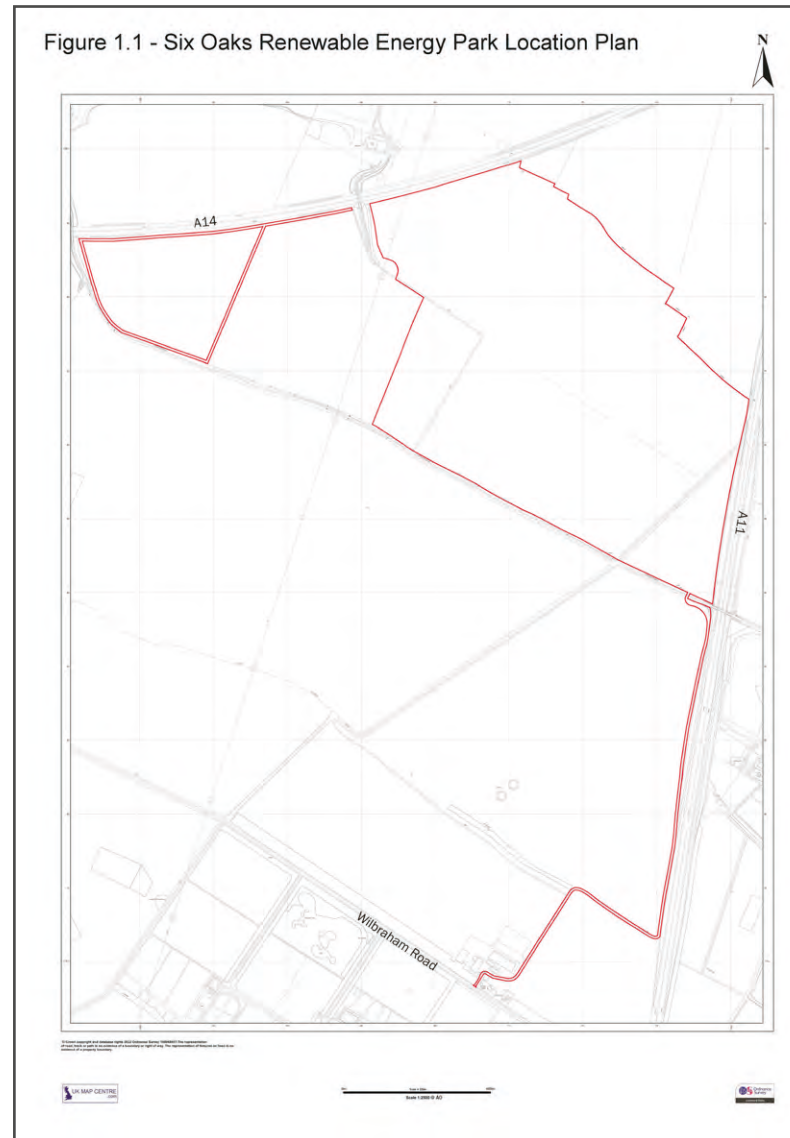


Plate A.1 - Site Location (replicated from Figure 1.1)

NON-TECHNICAL SUMMARY

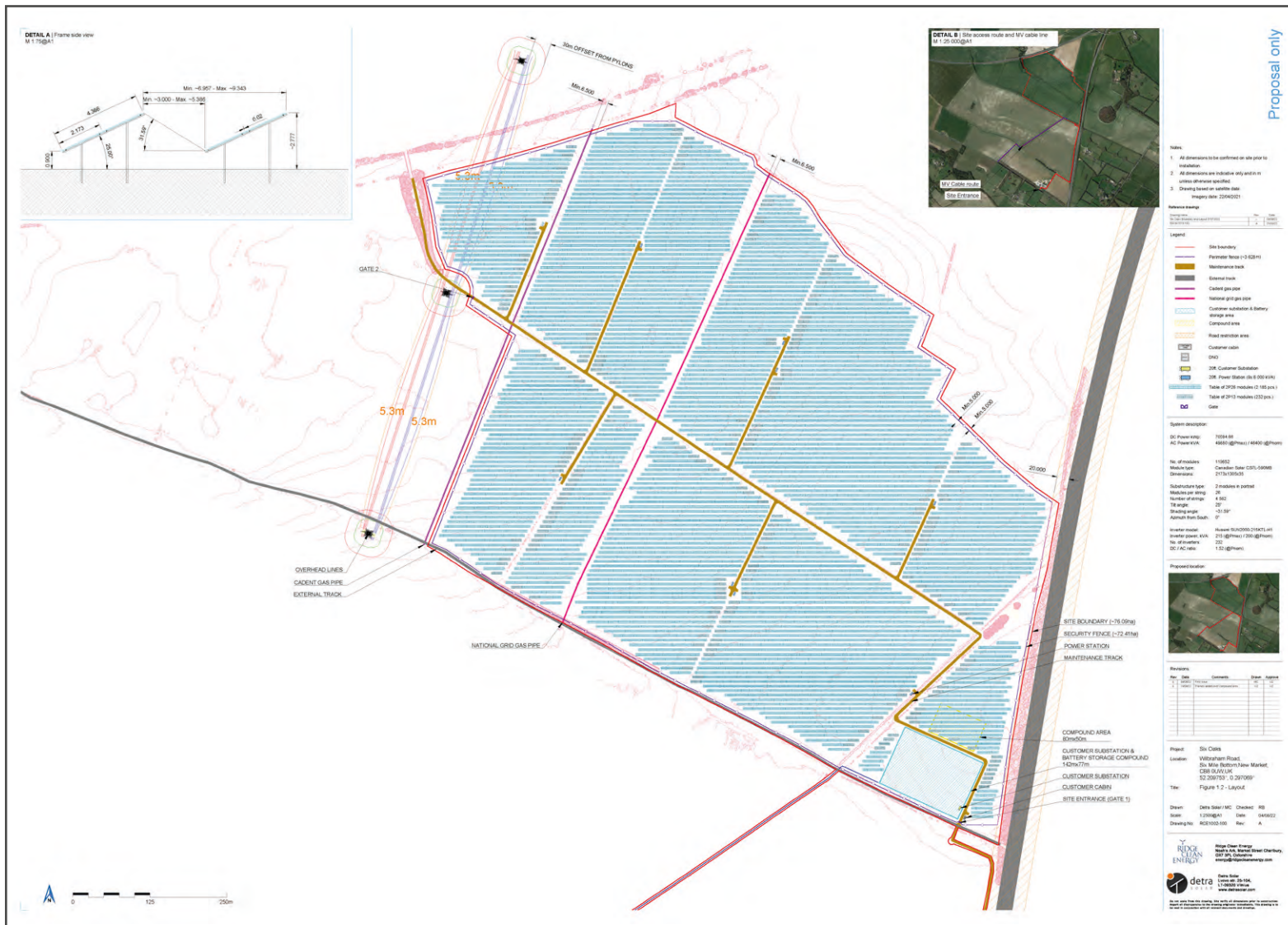


Plate A.2 - Site Layout (replicated from Figure 1.2)



DEVELOPMENT RATIONALE

A.9 It is internationally accepted that global warming and its association with climate change effects are a reality. Scientific opinion has converged on the appreciation that human activity, including the burning of fossil fuels, is rapidly changing the Earth's climate.

A.10 In the UK, the latest annual UK weather and climate report, published in July 2021 (Kendon et al., 2021), found that:
'Year 2020 was third warmest, fifth wettest and eight sunniest on record for the UK. No other year has fallen in the top-10 for all three variables for the UK.'

A.11 **Plate A.1** produced by the University of Reading (Hawkins, 2020) and using UK Met Office Data illustrates the average annual UK temperature since 1884. Blues represent cool average temperatures, and reds represent warm average temperatures. The increase in average annual temperature is abundantly clear.

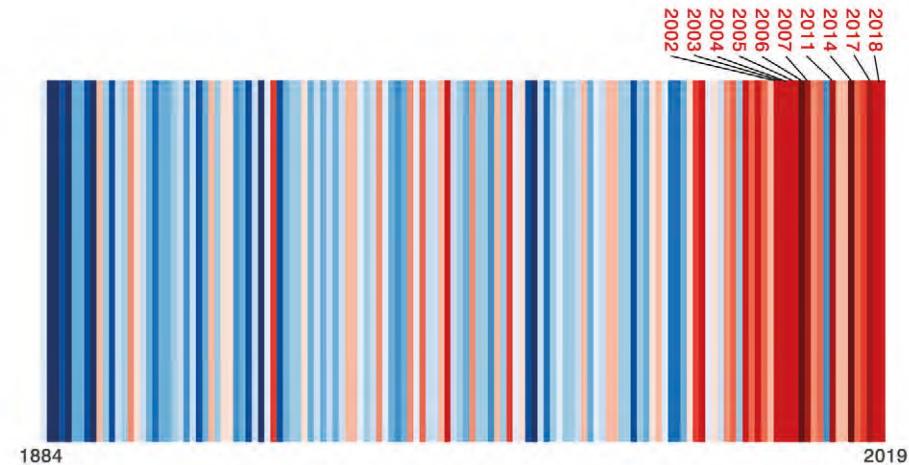


Plate A.3 - UK Annual Temperature (Hawkins, 2020)

A.12 The Paris Agreement, negotiated at COP21 and adopted in December 2015, is to limit the global average temperature rise to 'well below 2 degrees Celsius above pre-industrial levels; and to pursue efforts to limit the increase to 1.5 degrees Celsius'.

A.13 In 2021, the UK Government hosted COP26 in Glasgow. Amongst the outcomes was 'A stronger commitment to limit global temperature rises to 1.5 degrees.'

A.14 The Climate Change Act 2008 sets a legal duty on the Secretary of State to reduce greenhouse gas emissions by 2050. In 2019, the UK Government formally amended the target within the Climate Change Act as follows:

'It is the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline.'

A.15 In this context, and in the context of global energy price rises, the most recent changes to the UK energy picture emerged with the publication in April 2022 of the British Energy Security Strategy, which expects a five-fold increase in the amount of solar power in the UK by 2035 from its current level of around 14GW.

A.16 At a more local level, East Cambridgeshire District Council declared a Climate Emergency in October 2019. In June 2020 the Council published an Environmental Plan, 'A Strategy And Action Plan To Boost The Environment And Help Mitigate Climate Change'.

A.17 In relation to renewable energy developments the strategy states,
In seeking to reach the overall goal of 'net zero' across East Cambridgeshire, it is therefore important to not only tackle what we do emit (and try to reduce it), but also consider what renewable energy we generate (and how could we, in appropriate places, increase it).

A.18 Although progress is being made, the UNEP's Emissions Gap Report (October 2022) states that:
'Every year, the negative impacts of climate change become more intense. Every year, they bring more misery and pain to hundreds of millions of people across the globe. Every year, they become more a problem of the here and now, as well as a warning of tougher consequences to come. We are in a climate emergency.'

A.19 The report goes on to state that,
'increased and accelerated action is needed if these are to happen at the pace and scale required to limit global warming to well below 2°C, preferably 1.5°C.'

A.20 In providing domestic renewable electricity generation, with battery storage to support the variable nature of renewable energy, the Six Oaks Renewable Energy Park will provide a significant contribution towards reducing carbon dioxide emissions in the UK.



SITE SELECTION AND DESIGN

A.21 The Developer has followed a detailed site selection process that considered a range of environmental and technical constraints. These include environmental designations; ecology; landscape and visual effects; flood risk; cultural heritage; potential for glint and glare; electrical network connection; land availability and land use; agricultural land quality; and, the transport network for access to the site.

A.22 As acknowledged by the Building Research Establishment's Planning Guidance (BRE, 2014a), the UK receives a significant amount of solar energy. At the proposed site, approximately 1 001 - 1 050kWh of solar irradiation falls on each square metre of horizontal surface.

A.23 Land within relative proximity to Cambridge, a growing city with increasing electricity demand, was

screened to identify areas with enough contiguous land to have potential to host a solar farm maximising use of the secured connection capacity and the associated BESS facility.. An arbitrary search radius was not applied, rather, a pragmatic review of proximate farmland was considered in light of environmental constraints. Considerations included:

- proximity to ecological, historic or landscape designations;
- proximity to settlements; and
- agricultural land classification.

A.24 Taking these constraints into account, well enclosed land between the A11 and A14 was identified to the south east of Bottisham. This land was observed to have an association with energy infrastructure, particularly the 400kV overhead lines that cross the site and the transport infrastructure bounding two sides of the site.

A.25 It was recognised that this parcel of land was within Cambridge Green Belt, however, it was judged that as a consequence of the Very Special Circumstances associated with the need for renewable energy and storage, the location - with the enclosed nature of the site and existing bounding infrastructure (which is judged to not

consequentially change the perception of 'openness') - would not conflict with the purposes of the green belt. The Planning Statement that accompanies the planning application considers green belt in more detail.

A.26 A grid connection was assessed as being available at the Fulbourn substation. A connection at the substation has subsequently been secured. The underground cable route, running alongside road verges and/or field margins will be subject to a separate permitting process.

A.27 A design freeze meeting took place involving the EIA assessment team. The purpose of this was to ensure all technical and environmental parameters, including public comment, were accounted for and balanced with optimising the potential generation from the site.

A.28 During the latter stages of the iterative EIA process, analysis of the site, its constraints and evolving technology, land to the west was removed from the solar array to remove the use of any grade 2 land from the Proposal. This had the added advantages of reducing potential impacts on a likely archaeological asset (identified during the geophysical survey) and reducing

the visual impact along part of the Heath Road public right of way.

A.29 The specific site design further evolved through the Environmental Impact Assessment process, whereby any impacts identified by the specialist assessment team or consultees were mitigated for, where possible, through alterations in the site design. Measures proposed as mitigation and substantial landscape and habitat improvement include:

- hedge planting (both new and improvement of existing hedges);
- tree planting;
- use of wildflower seed, and
- bird and bat boxes placed around the site.

A.30 Following assessment of the final site layout, the Six Oaks Renewable Energy Park was judged by the developer and the EIA and non-EIA assessment team to be a location offering the prospect of a suitable balance of the site- specific features which render a solar and BESS development (with its associated environmental benefits) both technically and economically viable, and the need to keep any adverse environmental impact of such a development to an acceptable minimum.



ENVIRONMENTAL IMPACT ASSESSMENT

The Concept of Environmental Impact Assessment (EIA)

- A.31 EIA is a process by which a development is assessed in terms of its likely significant impacts upon the baseline environment, to enable decision makers to determine the acceptability of the development in the planning balance.
- A.32 Environmental impacts, both positive and negative, can be classified in terms of their significance according to relevant best practice guidelines and methodologies. An EIA is intended to identify the significant effects, other effects may be assessed outside of the EIA.

- A.33 Once significant impacts have been determined, an EIA will propose avoidance and mitigation strategies that may be applied to avoid, reduce, remedy or compensate for the predicted significant effects. The predicted residual impacts of the development are assessed on the basis that these strategies are applied.
- A.34 Assessment under EIA is legislated through The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

The Need for EIA

- A.35 A Screening Request was submitted to East Cambridgeshire District Council in January 2022. The report provided details of the Proposed Development and presented the screening process to be followed in line with the EIA Regulations. In addition, the Screening Request detailed the scope of works anticipated for the project and the guidance to be followed for each discipline.
- A.36 A Screening Opinion was received in May 2022 and stated:

It is considered that with the significant amount of energy farm developments having taken and potentially taking place in the locality there will be a cumulative significant impact upon the visual character of the area and the amount of high quality farmland being used.

- A.37 The Screening Opinion concluded that:

An Environmental Statement is required for: The cumulative impact on the rural character of the district and the substantial loss of arable farmland in the next 30-40 years in the district.

- A.38 Consequently, the Developer advised East Cambridgeshire District Council that an EIA would be undertaken with the scope limited to agricultural land, landscape and ecology as the only disciplines with the potential for significant impacts.
- A.39 Other matters, such as noise, flood risk, glint and glare, traffic and access, socio-economics and cultural heritage, have been assessed and reported on in the technical reports that accompany the planning application, together with a Planning Statement, Design and Access Statement and Statement of Community Involvement.

Public Consultation

- A.40 The Developer has carried out community consultation in support of its proposals for Six Oaks Renewable Energy Park in line with East Cambridgeshire District Council's Statement of Community Involvement for Planning Policy and Planning Applications (2018).
- A.41 In early March 2022, invitations to public exhibitions were issued to addresses around the proposal. The invitation contained details on the Developer, the Proposed Development and the dates and times for two exhibitions. At the same time, a dedicated project website was launched at www.ridgecleanenergy.com/sixoaks, containing information on the project.
- A.42 Copies of the invitation were sent to Bottisham Parish Council, Little Wilbraham and Six Mile Bottom Parish Council and Great Wilbraham Parish Council. They were also digitally sent to the Conservative MP for South East Cambridgeshire, and the ward councillors for Bottisham.
- A.43 The two public exhibitions were held on the 28th March in the Wilbrahams' Memorial Hall and 29th March in the

Poppy Lounge of Bottisham Sports and Social Club.

- A.44 Approximately 80 individuals attended the exhibitions. Feedback responses are reported in more detail in the Statement of Community Involvement accompanying the planning application.

Other Consultation

- A.45 Additional pre-application consultations included Bottisham Parish Council, with a follow up meeting with some members of the Parish Council; the MP for South East Cambridgeshire; and, the Wilbrahams' Environment Group.



THE PROPOSED DEVELOPMENT

- A.46 The site is approximately 9km east of Cambridge, on agricultural land between the A14 and A11. The village of Bottisham is 1.3km to the north-west, Little Wilbraham is 1.6km to the south-west and Great Wilbraham is 1.9km to the southwest of the proposal. The site lies within East Cambridgeshire District Council with the site access crossing into South Cambridgeshire. The application site extends to approximately 76.4ha (189 acres).
- A.47 The site is identified as located within Cambridge Greenbelt and this is discussed further within the Planning Statement accompanying the planning application.

A.48 The site is predominantly arable farmland comprising of large and medium sized fields across a gently undulating terrain. There are a number of infrastructure features existing in the landscape around the site, including the National Grid Pelham-Burwell Main 400kV double circuit transmission line; a double UK Power Networks (UKPN) 33kV overhead line (on wooden poles); a further 33kV overhead line (on wooden posts), west of the proposal; the A14 trunk road runs along the northern boundary of the site; and, the A11 trunk road to the east of the proposal.



Plate A.4 - View SW from Heath Road (restricted byway).

A.49 The land at, and surrounding, the Proposed Development has previously been independently assessed for its agricultural quality and versatility by the former Ministry for Agriculture, Fisheries and Food. The Six Oaks Renewable Energy Park would be located on grade 3 land, 15% grade 3a and 85% of the lower grade 3b.



Plate A.5 - View N from Heath Road (restricted byway) across solar site.

A.50 There are no public rights of way crossing the fenced solar array, BESS and substation compound. A restricted byway travels along Heath Road, adjacent to the southern boundary of the proposed site. It will be necessary to cross the restricted byway with the access track.

A.51 There are no Areas of Outstanding Natural Beauty (AONB); National Nature Reserves; National Parks; Ramsar sites; Special Areas of Conservation (SAC); Special Protection Areas (SPA); Sites of Special Scientific Interest (SSSI); Local Nature Reserves; World Heritage Sites or Registered Battlefields within 2km of the potential site area.

A.52 Two County Wildlife Sites (CWS) are located within 2km of the Proposal with a further site just beyond this zone (at 2.2km). Their locations are shown in **Figure 9.1 of the ES**.

A.53 There are a number of listed buildings and scheduled monuments in the wider area. These are discussed further in the Historic Environment Assessment that accompanies the planning application.

Description of the development

A.54 The Six Oaks Renewable Energy Park will consist of up to 49.9MW of solar arrays; a 50MW Battery Energy Storage System (BESS) with two hour generation capacity; site access tracks; inverters and transformers; a customer

- cabin; underground cables; security fencing; infrared inward facing CCTV cameras; an electrical substation; and, a temporary construction compound.
- A.55 The solar panels will be mounted on frames at an angle of approximately 20 to 25 degrees, with a maximum height of 3.0m. The frames that support the panels are typically made of aluminium or galvanised steel pushed in to the ground.
- A.56 The Proposed Development will be accessed from Wilbraham Road, using an existing farm entrance and farm tracks. Where sections of new, upgraded or widened access track are required, these will have a crushed stone running surface that will grass over in time. The running surface (4.0m wide) is laid over a permeable stone sub-surface, therefore, no formal drainage is proposed.
- A.57 Inverter units (converting the DC generated electricity to AC) will be mounted behind the solar panels. Approximately nine transformer units (each 6.1m long x 2.4m wide x 2.9m high) will be sited amongst the rows of solar panels, to raise the voltage to minimize electrical losses within the site.
- A.58 A single on-site customer cabin will contain the security and solar farm control systems, equipment for general maintenance and spare parts, should they be needed during the operational phase. These are glass reinforced plastic (GRP) or steel container-based cabinets typically 6.1m long, 2.4m wide and 2.9m high.
- A.59 A perimeter fence would be installed to protect the panels from theft. The fence will be stock style fencing with wooden posts and open wire mesh up to 1.8m tall. CCTV cameras will be sited amongst the fencing. A 15cm gap at the base of the fence would allow the passage of small animals. Access points for wildlife will be included in the fence line to ensure permeability across the habitats.
- A.60 The BESS and substation compound) will occupy an area of approximately 1.1ha.
- A.61 The proposed BESS would comprise approximately 28 containerised battery modules. Rated at approximately 100MWh, the BESS would be able to provide a continuous 50MW output over a 2 hour period. A Power Conversion System (PCS) unit converts the Direct Current (DC) electricity of the battery to the Alternating Current (AC) electricity of the power network - and vice-versa - whilst discharging and charging. A switchgear container houses a 33kV transformer amongst other equipment and generally serves each battery/PCS pair. This steps the system voltage up (or down) appropriately.
- A.62 To connect to the local electricity distribution network for the export of electricity from the BESS and solar panels, a link must be made between the solar farm and BESS's electrical distribution network cables and the local electricity distribution network through appropriate protection equipment. A UKPN control building would be situated on the substation / BESS compound. At a height of up to 6m, this would be the tallest feature of the renewable energy park.
- A.63 For the duration of the construction (and decommissioning) periods, a temporary compound area will be required to provide secure storage of equipment and construction materials, welfare facilities and office accommodation for site staff. The compound will be located in the south-east of the of renewable energy park immediately north of the BESS and substation compound.

Environmental Enhancements

- A.64 To provide additional screening around the site and to increase biodiversity, a number of site specific landscape and biodiversity enhancements will be incorporated into the site. Apart from allowing hedges to grow out, which could commence as early as next year (2023), other enhancements would be put in place as the last stage of the renewable energy park construction. The following paragraphs summarise the enhancement measures.
- A.65 Restoration of lowland species-rich grassland – most of the site is currently arable farmland of low diversity and low ecological value. This will be restored to grassland habitat and will be managed after construction of the project either by sustainable grazing or cutting. This will promote the re-establishment of a diverse meadow community, with abundant wildflowers to provide food for pollinators. The arable farmland will be enhanced to deliver a more biodiverse neutral grassland wildflower meadow. This will be located under and around the proposed solar arrays within the site.

- A.66 Native hedgerow planting – 1.1km of new native hedgerow will be planted and a further 2.5km of existing hedge restored to native species-rich hedgerow. The recommended species mix with approximate target proportions for this planting is as follows: hawthorn (35%), blackthorn (35%), field maple (15%), hazel (10%) and elder (5%) (reflecting the composition of other species-rich hedges locally).
- A.67 A line of Rowan trees will be planted in the south-east corner of the site. This tree planting will be monitored annually during establishment (first 5 years), and pruned to encourage strong growth as required. Any trees that die during this period will be replaced. After that tree guards will be removed and the planting will be left to grow without further intervention.
- A.68 Barn owl box – one to be erected at a secure location within the site (specific location confidential to avoid disturbance to this species which is specially protected from disturbance under Schedule 1 of the 1981 Wildlife and Countryside Act).
- A.69 Songbird nest boxes – 20 boxes of mixed type (5 x small hole for tits, 5 x larger hole for sparrows, 5 x larger

boxes for starlings and 5 x open-fronted boxes for flycatchers/robins/thrushes). These will be erected within existing woodland patches and on trees within existing hedgerows/field boundaries.

- A.70 Bat boxes – 10 boxes – the same locations as songbird nest boxes.
- A.71 In addition, an area of grassland will be set aside for ground nesting birds and wood piles would be provided for invertebrates.

Site Access

- A.72 Deliveries will approach from the wider highway network on the A14, leaving at Junction 35 on to the A1303, Newmarket Road. Traveling north-east, vehicles will turn right after approximately 1.7km on to Little Wilbraham Road (which becomes Wilbraham Road), the site entrance is on the left approximately 4.8km from the A1303 turning.
- A.73 From the site entrance, vehicles will use the existing farm track for about 1.5km. New track would then be required for approximately 150m, including the Heath Road crossing point, after which the construction vehicles will enter the site and progress to the temporary construction compound.

Construction Phase

- A.74 **Plate A.6 on page 15** provides an overview of the construction process as a photographic sequence.
- A.75 There would be a peak monthly average of 16 HGV movements per day (where one delivery is equivalent to two vehicle movements).
- A.76 During the construction phase of the proposed renewable energy park the Heath Road right of way will remain fully open for use. There may be some minor disruption for users when construction traffic may cross. Banksmen will be engaged to minimise disruption to users of the right of way.
- A.77 Concrete footings or piers are cast for the site cabinets, transformer units BESS and substations components where required. Concrete will also be used to anchor the posts holding the CCTV cameras.
- A.78 The solar panel frames are assembled and the panels are then mounted onto the frames. Cable trenches will be excavated within the renewable energy park. The cables will be installed as the trench is excavated, and the trench filled immediately afterwards wherever possible.

- A.79 Following commissioning of the project, the site is cleared and the temporary construction compound removed. Planting is undertaken during the autumn planting season, although the existing hedgerows can be allowed to grow during the pre-construction phase.

Operation Phase

- A.80 The site is remotely monitored and operated with an automated system alerting an engineer in case of component or system errors or component failures.
- A.81 Regular checks will be undertaken to ensure the panels, frames, fittings, inverters, batteries, PCSs, substation components and fencing are all in good working order.
- A.82 The panels will be cleaned periodically to ensure maximum production. This involves the transportation of a tractor unit, de ionised water bowser and cleaning team (generally 3-4 personnel) to site once or twice a year.
- A.83 It is envisaged that the proposed Six Oaks Renewable Energy Park will take around nine months to construct. A typical construction programme for

a project of the scale of the Six Oaks Renewable Energy Park is shown in **Table A.1.**

NON-TECHNICAL SUMMARY



Plate A.6 - Photographic Sequence of Construction Process

SIX OAKS RENEWABLE ENERGY PARK

Table A.1 - Typical Construction Programme

Activity	Programme Month								
	1	2	3	4	5	6	7	8	9
Solar panels		■	■	■	■	■	■	■	
Mounting system		■	■	■	■	■	■	■	
Cabling	■	■	■	■	■	■	■	■	
Cable trench sand	■	■	■	■	■	■	■	■	
Transformers			■	■	■				
Substation				■					
Client container				■					
Security fencing and gates	■	■	■	■	■	■			
Construction compound, including gates, welfare and temporary surfacing.	■	■							
Site tracks & BESS/Substation compound (crushed stone over geogrid base)	■	■	■	■	■	■			
Foundation concrete for inverter/transformer units, customer cabin, welfare unit, store, substation and CCTV posts	■	■	■	■	■	■	■		
BESS & Substation Components				■	■	■	■	■	
Inverters	■	■	■	■	■	■	■		
Ecological works (seed, new hedge and woodland), subject to appropriate time of year.									■
Site commissioning and site clearing									■

- A.84 The battery will charge either during daylight when the panels are generating or at times when electricity demand is low. It will be called on to generate at times of maximum demand or when immediate generation is required on the electricity network for example either because of a loss of a large generator elsewhere on the network or when frequency support is required to balance load on the network.
- A.85 It has been modelled that the proposed solar farm will generate an annual average of approximately 48 700 000kWh (net) of electricity. On this basis, the electricity produced by the Six Oaks Renewable Energy Park will offset approximately 9 430 000kgCO₂/annum or 9 430 tonnes CO₂ per annum.
- A.87 It is likely that a temporary compound similar in size and nature to the main temporary construction compound will be required for the secure storage of equipment and for worker welfare facilities during decommissioning. After, the compound area will be reinstated to agricultural land.
- A.88 New site tracks would be left in place for use by the landowner for their farming practices, if required. All other materials would be removed and the land returned for full agricultural use. Materials recovered during decommissioning will be re-used or recycled in accordance with the waste management hierarchy.

Decommissioning Phase

- A.86 At the end of the operating life of the renewable energy park, the panels and associated infrastructure will be fully decommissioned unless a new application for a replacement solar energy development is made to, and granted by the Local Planning Authority.

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NON TECHNICAL SUMMARY - PART B

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INTRODUCTION

- B.1 The Environmental Impact Assessment (EIA) for the Six Oaks Renewable Energy Park has been undertaken by a specialist team appointed by the developer. This team operates independently from the developer to ensure neutrality.
- B.2 The independent specialists, each established in their field, who form the Environmental Impact Assessment team with Engena are:
- Ecology Consulting - Ecology and Ornithology (**Chapter 9 of ES Volume 2a**); and
 - HBA Environmental - LVIA (**Chapter 10 of ES Volume 2a**).
- B.3 The specialist assessments and their associated chapters have been authored in their entirety by the relevant consultants.
- B.4 In addition, Daniel Baird Soil Consultancy Limited contributed to **Chapter 5 - Agricultural Land**.
- B.5 Following completion of the Environmental Impact Assessment, production of the subsequent

Environmental Statement accords with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, and follows the scope as set out in **ES Chapter 6 - EIA**.

- B.6 Throughout, general guidance has also been used from the following documents:
- National Planning Policy Framework, MHCLG, 2021;
 - National Planning Practice Guidance, MHCLG, 2020;
 - Overarching National Policy Statement for Energy (EN-1), 2011a;
 - National Policy Statement for Renewable Energy Infrastructure (EN-3), 2011b; and
 - East Cambridgeshire Local Plan 2015.
- B.7 Individual specialist sections of the assessment and chapters have been prepared according to the relevant standards and methodologies pertinent to each section. Please refer to individual chapters in **Volume 2A** for details.

- B.8 In addition to the Environmental Statement, the Planning Statement accompanying the application considers the local and national planning policy relevant to this application, and the planning context that the development should be assessed against.
- B.9 The following sections are summaries of the full assessments provided as **Volumes 2a - Written Statement, Volume 2b - Appendices, Volume 3 - Figures** and **Volume 4 - Visualisations**.



ECOLOGY (ES CHAPTER 9)

Baseline and Context

- B.10 **Chapter 9** of the Environmental Statement presents an Ecological Impact Assessment (EclA) of the proposed Six Oaks Renewable Energy Park. The EclA reports the findings of the potential significant effects of the Renewable Energy Park on ecology and biodiversity in the vicinity of the proposed development.
- B.11 A desk study was conducted to determine the protected nature conservation sites in the area, which considered all internationally protected sites (designated and proposed) within 30km of the proposed renewable energy park, all nationally important sites within 5km, and all other protected nature conservation sites (statutory and non-statutory) within 2km.

B.12 There are 12 statutory designated internationally/nationally important nature conservation sites in the search area around the proposed renewable energy park. There are 2 non-statutory sites (County Wildlife Sites) in the 2km search area. These are the Heath Road / Streetway Green Lanes and St George's Churchyard (Six Mile Bottom). Other priority habitats (deciduous woodland and traditional orchard) are located within the search area, but none are situated in the site itself, or in an area that may be affected by the proposed development.

B.13 Valued ecological receptors, also referred to as 'key indicator species' (species/habitat considered important at an international or national level), are given particular consideration in the EclA. The following baseline surveys were undertaken to identify key indicator species:

- an Extended Phase 1 survey (conducted 1 September 2020 and 15 August 2022) which included a habitat suitability assessment to inform further surveys;
- Wintering Bird Surveys (winter of 2019-20);

- Breeding Bird Surveys (April-July 2020 and 2022);
- Bat Surveys (spring, summer, autumn 2020); and,
- Badger Surveys (September 2020).

B.14 **Figure 9.2 of ES Volume 3** (replicated as **Plate B.7** on page 23 for convenience) shows the habitats within and around the site. Habitat suitability within the survey area was assessed as high for bats and badgers, so specific surveys were undertaken for each. Both species are protected species and classified as high value, and thus bats and badgers were taken forward for further assessment.

B.15 There were regular sightings of a small number of brown hares during the baseline surveys, and as a NERC Species of Principal Importance, brown hares have been taken forward for further assessment.

B.16 Three additional Red Data Book species (two bee species and one plant) were recorded along bridleways/tracks within the County Wildlife Site and have been taken forward for further assessment.

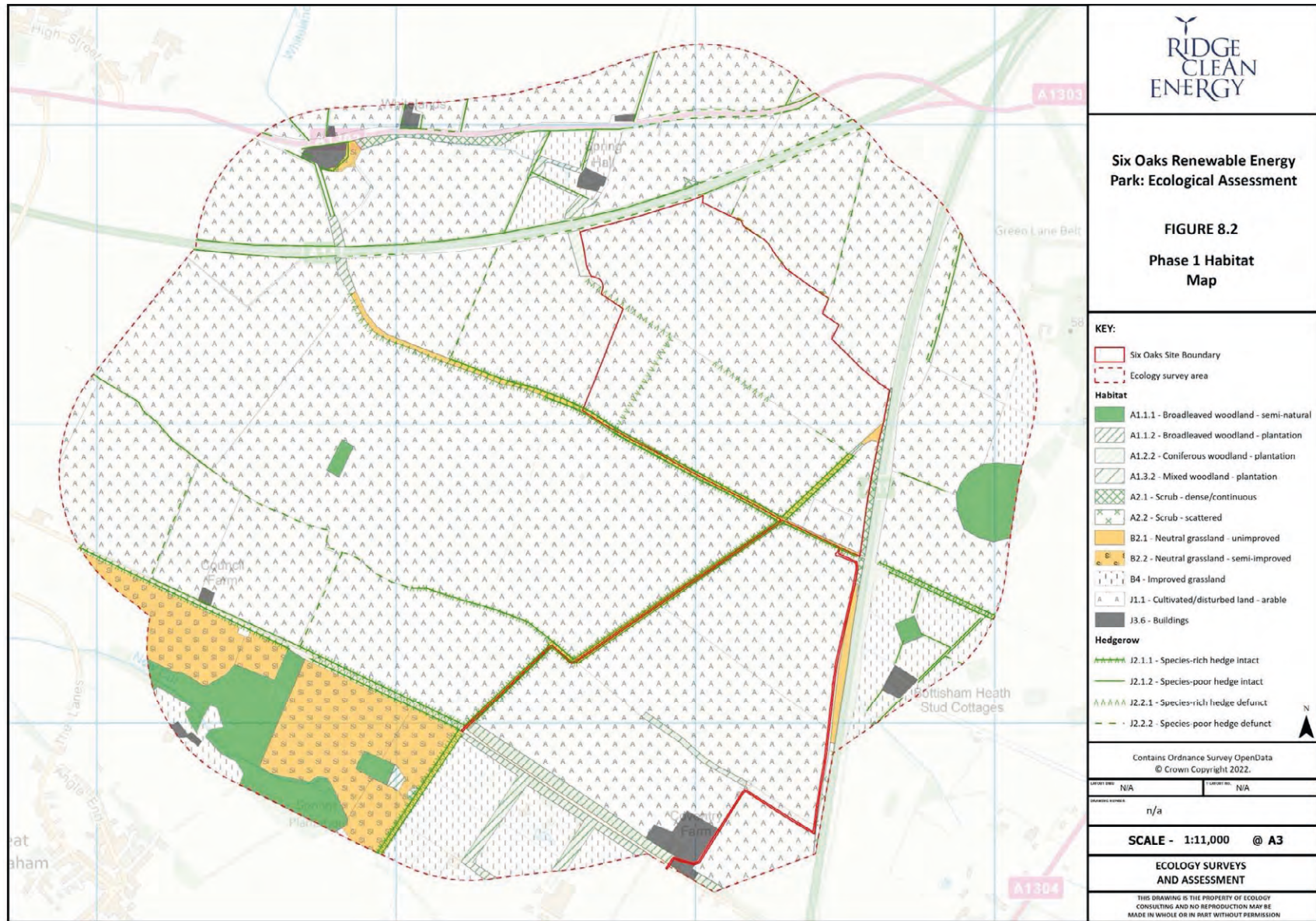


Plate B.7 - Phase 1 Habitats Map

- B.17 All bats are all specially protected as European Protected Species (so all have been classed as high value). All bat species have therefore been taken forward for further assessment.
- B.18 The Wintering Bird survey did not identify any important wintering bird populations that would likely be affected by the proposed renewable energy park, or any areas of particular importance for wintering birds that should be avoided in the site design process. Three high value species (red kite, golden plover, peregrine) and three medium value species (black-headed gull, common gull, lesser black-backed gull) were taken forward for further assessment.
- B.19 The Breeding Bird surveys found that the study area did not hold any notable concentration of any breeding birds but was typical of the open arable farmland habitats across the survey area. Four high value species (quail, hobby, red kite and common cross bill) and 10 medium value species (grey partridge, skylark, yellow wagtail, dunnoek, song thrush, house sparrow, linnet, yellowhammer, reed bunting and corn bunting) identified in the survey were taken forward for further assessment.

Assessment of Effects

- B.20 The main potential effects on ecology are direct loss of breeding and feeding habitat, indirect loss of habitat from disturbance, and, for birds, collision risk with solar panel structures and overhead lines (no new overhead lines are proposed at the site). Habitat loss for birds, particularly for species with restricted ranges and specific habitat requirements, can potentially result from large-scale solar PV developments. No such species would be affected and accordingly this is not a factor at this site.
- B.21 The Six Oaks Renewable Energy Park has the potential to cause a range of ecological impacts, including, but not limited to habitat loss during construction, disturbance/harm during construction, and change in habitat during operation.
- B.22 The only loss of habitat during the construction and decommissioning of the renewable energy park would be of arable farmland (other than a small loss of native species-poor hedgerow), and the effect would not be significant.

- B.23 The potential ecological effects of disturbance/harm on key indicator species, including, badgers, bats, breeding birds, and wintering birds, will not be significant.
- B.24 The potential ecological effects of the renewable energy park during operation were also assessed. The change of habitat within the site from open arable farmland to wildflower meadow, and the associated management of the grassland resulting in a more ecologically rich habitat, will result in a positive beneficial ecological impact. A positive impact will also derive from open grassland situated around hedgerow/woodland habitat used to buffer the site's components from these features.
- B.25 Though some breeding bird species may experience disturbance and displacement, particularly those that prefer more open ground, mitigation measures designed to deliver a net gain to these species have been proposed. As a result, the potential effects will not be significant.
- B.26 Further, some displacement of wintering bird species may occur during construction. As the area which

such displacement may occur was not particularly important for any key indicator species and did not hold any habitat that was not widely available nearby, the potential effect will not be significant.

Mitigation Measures

B.27 The following mitigation measures are proposed at the Six Oaks Renewable Energy Park:

- Mitigation measures will be required during construction to avoid any significant impacts on breeding birds, through the implementation of a Breeding Bird Protection Plan (BBPP).
- Measures to deliver benefits to breeding bird species that may be displaced from the site during the operational phase have been included as part of the Biodiversity and Landscape Management Plan (BLMP).
- Pre-construction checks will be required for badgers to inform any mitigation measures for this species in case they have moved into the site prior to construction starting.

- Best practice construction methods will be followed such as clearing all refuse piles daily, covering nightly or providing exit ramps to any excavations and minimising on site noise.

Cumulative Effects

B.28 As the Six Oaks Renewable Energy Park will deliver a net biodiversity gain, it will not contribute to any adverse cumulative ecological effects.

Biodiversity Net Gain

B.29 The data gathered during the field surveys have been used to undertake a biodiversity net gain calculation that considers the habitat present on site, losses that would occur as a result of the development, and the biodiversity net gain achieved through the BLMP.

B.30 There will be a net 66% gain in habitat units and a 2% gain in hedgerow units associated with enhancement measures delivered as part of the Six Oaks Renewable Energy Park. The following habitat enhancement measures (**Figure 9.3 of the ES**, replicated as **Plate B.7** on page 23 for convenience) are proposed:

- Restoration of lowland species-rich grassland: 76ha. of arable farmland will be restored to grassland habitat, managed over the lifetime of the project by sustainable grazing and to promote the re-establishment of a diverse meadow community. Grassland wildflower meadow will be located under and around the proposed arrays.
- Native hedgerow planting: 1.1km of new native hedgerow will be planted and a further 2.5km of existing hedgerow restored to native species-rich hedgerow. Hedgerows will be managed to reach a target height (3m) and width (2m) and will then be maintained at this size.
- Native tree planting: a line of Rowan Sorbus aucuparia will be planted in the south-east corner of the site.
- Fence design/management: to avoid barriers to mammal movement (including brown hare, badger and hedgehog) will be achieved through the installation of 'mammal gates' or suitable gaps beneath the fencing.

SIX OAKS RENEWABLE ENERGY PARK

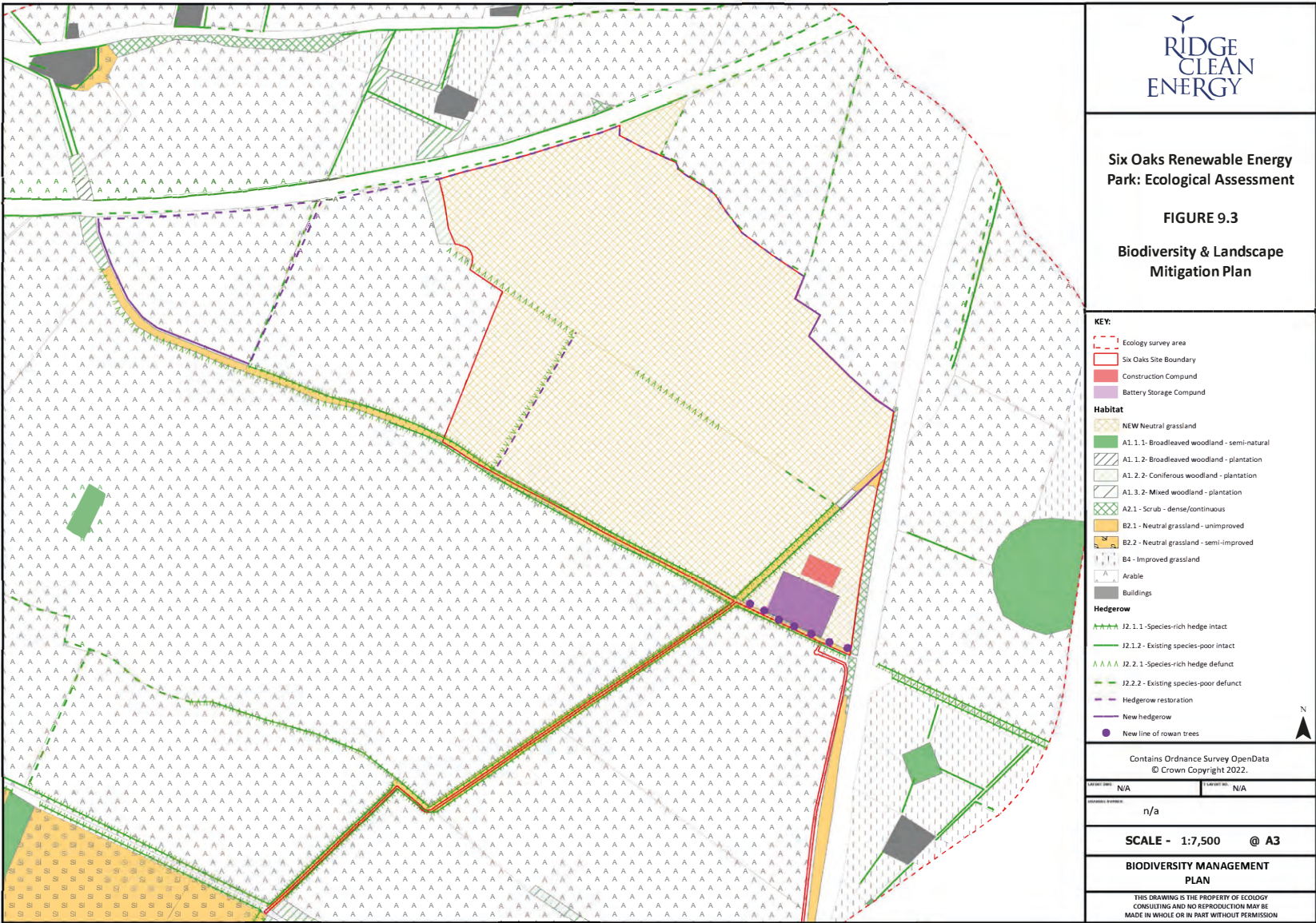


Plate B.8 - Biodiversity and Landscape Management Plan

- Bird and bat box provision: a range of bird boxes (one barn owl box and 20 songbird nest boxes) and bat boxes (10) will be installed to enhance nesting/roosting opportunities, all to be manufactured from high quality long-lasting material.
- Other enhancement measures include an area of grassland to be set aside for ground nesting birds and wood piles provided for invertebrates.



LANDSCAPE AND VISUAL IMPACT ASSESSMENT (ES CHAPTER 10)

Baseline

B.31 To ensure the BLMP has delivered the required net gain for the breeding bird population, breeding bird surveys will be carried out over the first three years of the renewable energy park's operational life. If net gain requirements are not delivered, additional measures to improve the site's management will be recommended and surveys will continue at set intervals (in years 5, 10, and 15).

B.32 **Chapter 10** of the Environmental Statement presents a Landscape and Visual Impact Assessment of the proposed Six Oaks Renewable Energy Park. The assessment assesses the potential significant effects on landscape fabric, landscape character, designations and views.

B.33 The assessment of the effect of the proposed development on the landscape resource is undertaken by way of defining how susceptible and sensitive the landscape is to the proposed development, where that change would be experienced in relation to the key characteristics, and

to what degree. The methodology is presented in the appendices of the Landscape and Visual Assessment, where the effects are determined by combining sensitivity with magnitude of change.

B.34 In the same way an assessment of the effect of the proposed development on the visual resource and visual amenity of viewers and visual receptors is set out. This analysis records the effect on viewers including users of the roads, public rights of way, settlements and adjacent individual residential dwellings.

B.35 The baseline landscape and visual context of the proposed project is described, drawing on the 1991 Cambridgeshire Landscape Guidelines and the 2021 Greater Cambridgeshire landscape character assessment that defines the site as falling within the Chalklands character area and Chalk Hills landscape character type.

Assessment of Effects

- B.36 Embedded mitigation has been included in the design of the site. This includes removing solar arrays from the western part of the site to reduce the effects on users of the A14 and on users of the Heath Road right of way.
- B.37 A minimum of a 5m buffer will be uniform across the site. This will ensure that 'habitat corridors' remain throughout the site, which will maintain habitat linkage and enhance the site's overall value for biodiversity.
- B.38 Other measures inherent within the design include:
- Ensuring that the installation is 'reversible' at the end of the operational phase, so that the land can be returned to its original form and condition.
 - Minimising security lighting and use passive infra-red (PIR) to minimise light pollution.
 - The colour of the substation building will be agreed with the Local Planning Authority to ensure that it is in keeping with the surrounding area.
- Solar arrays have a maximum height of 3m to limit the landscape and visual effects.
- B.39 There are no national landscape designations within the study area, and therefore no effects.
- B.40 There would be some effects on landscape fabric, character and views during the construction and decommissioning phases due to the presence of the mechanical equipment and movement on the site. These effects will be temporary, therefore, the following summary focuses on the potential effects during the operational phase.
- B.41 The operational direct effects on landscape fabric would be high, and due to the medium to low sensitivity of the site, would bring about moderate / moderate to substantial and not significant effects, as would be anticipated with any field-scale solar development. The effects would be contained within the site boundary.
- B.42 In landscape character terms the only long range views afforded are from Wilbraham Road and Little Wilbraham Road, in the context of the large scale of the landscape seen in the direction of the view and the adjacent A11 and A14 routes. The change in this part of the landscape would be of a medium magnitude, however the landscape is not particularly sensitive to the change, and the resultant effect slight to moderate / moderate and not significant.
- B.43 The fields are large as is typical for the area, being representative of the large-scale of this landscape. The addition of a large-scale solar development with battery storage in this landscape will accord with the scale. The development will have a negligible / no impact on the settlement patterns seen in this landscape.
- B.44 The site is set between the A11 and A14 corridors, creating the perception of movement, light and sound in the landscape, creating an area of low tranquillity. However, when walking on Heath Road the levels of tranquillity are higher than would be anticipated in such a busy landscape. The proposals include for elements to enhance the visitor experience when using Heath Road.

- B.45 Users of the byway heading south-east will have the backs of the panels in their view. For north-west-bound users the full fronts of the panels will be in the direction of travel. This is the only location that the impact on this key characteristic would be readily observed for a sufficient duration for there to be an impact. Accordingly, some disruption to tranquillity is anticipated, however this is very minor and the landscape enhancements will in part mitigate for these effects. The change to the perception of tranquillity and distant views in this part of the landscape would be of a medium magnitude, however the landscape is not particularly sensitive to the change, and the resultant effect slight to moderate / moderate effect would not be of significance.
- B.46 The development would bring about the reversion to grassland across the site. This would over time develop some heathland characteristics. The perpetual arable cultivation of the land has weakened and depleted the soils. The reversion of this land will bring about a longer-term broad-scale beneficial change of a high magnitude that, based on the medium to low sensitivity of the land to change would bring about moderate/ moderate to substantial gains. These effects would become apparent over the lifetime of the scheme.
- B.47 Overall, there will be a medium magnitude of change to the perception of the character area brought about by the addition of a solar farm and battery storage facility to the landscape, that based on the medium to low sensitivity of the landscape to change would bring about a slight -moderate / moderate effect, which would not be significant.
- B.48 The viewpoint analysis has been undertaken at the viewpoint locations that represent locations within the study area where the main landscape resources and visual receptor groups are located. These visualisations associated with these viewpoints (viewpoints 1-9) are shown within Volume 4 of the Environmental Statement.
- B.49 The assessment has considered all of the settlements within the context of the site, including Bottisham, Little Wilbraham and Great Wilbraham and identified that they all lie outside of the area of any potential visibility, confirmed by field checking in bare-leaf conditions. Overall, the assessment has concluded that there would be no significant changes in views from within any of the settlements and therefore no significant impacts.
- B.50 All of the properties in the context of the site have been considered and none, including the nearest dwellings, would experience a change in view that would come close to a level commensurate with an impact on residential amenity. This is because the nearest dwellings all are set within mature vegetation, including trees; and they do not directly view the panels from the south where there would be potential for glint and glare effects.
- B.51 There is potential intermittent visibility for A11 south bound drivers for a distance of 1.3km from the A11/A14 interchange west. The road is in a cutting for much of the distance, but when parallel to the site a full open view would be afforded of the front faces of the panels for a duration of 150m. The road then enters a cutting adjacent to the site. The magnitude of change of view would be high for most of this 150m road length, where there would be a moderate to substantial and significant effect due to the changes in view.

- B.52 No other changes to views for road users of the A14, A1303, A1304, Little Wilbraham Road, Wilbraham Road, or other local roads would be significant.
- B.53 Through the proposed hedge rejuvenation proposals, the hedges would gradually increase in height by 1m and by year 10 all of the mitigation will be in place. The changes to the views of the landscape from this increase in hedge height would be beneficial but would not fully screen the proposed panels from any road user views.
- B.54 There is no railway in the context of the site, and therefore no effects. There are no Sustrans routes in the context of the site, with the nearest being Sustrans Route 51 located to the west and north of Bottisham. There would be no other views afforded by cyclists other than those using the local roads and rights of way and therefore no additional effects beyond those described in the assessments of users of the roads and rights of way.
- B.55 There are public rights of way to the south of and adjacent to the site. Viewpoints 4-8 are taken from this route from the most open locations where the view increases to the greatest magnitude of change that would be afforded by a walker, rider or cyclist on this section of Heath Road and Street Way.
- B.56 The removal of solar arrays from the south-western side of the site has considerably reduced the change in view from Viewpoints 4 & 5 compared to the scoping consultation document plans. This has shortened the duration of view alongside the development by over 400m.
- B.57 The viewer travels along Heath Road parallel to hedges on the southern side of the Renewable Energy Park, reaching a separation distance of only about 20m at Viewpoint 6 where panels would be seen in the adjacent or adjoining field compartment. For the duration of approximately 1.0km the Renewable Energy Park would form a strong presence in views from the byway. There is the potential for glint and glare to be experienced by users of the route. The change would be long-term and of a large scale. The change in view would be of a high magnitude, creating substantial and significant changes in view for high sensitivity byway users who have the time to look around and observe the surrounding landscape. Users heading west would experience the sequence of views in reverse.
- B.58 By years 10-15 the hedgerow planting and restoration should be sufficiently established to have a beneficial landscape change, but unlikely to drop the magnitude to below the threshold of significance.
- B.59 Along the northern 50m of Street Way where it meets Heath Road, a user will experience a short duration of high magnitude of changes, bringing about substantial, adverse and significant effects. These would reduce to moderate and not significant on establishment of the hedgerow planting and restoration.
- B.60 Information boards about the Six Oaks Renewable Energy Park, wildlife and climate change could be installed for viewing from these paths. In addition, a bench could be placed along the route to provide further benefits for footpath walkers and any visitors.

Mitigation Measures

- B.61 A draft Biodiversity and Landscape Management Plan (**Appendix 9.6 of Volume 2b**) has been produced to accompany the application. The plan includes new hedgerow planting and hedgerow restoration around the site as shown on **Figure 9.3 of Volume 3**. The final Landscape and Ecological Management Plan will be agreed with the Council and produced under a pre-commencement condition.
- B.62 New hedgerow planting along the northern part of the site will provide screening from the north. Hedgerow planting and restoration adjacent to the A14 will provide additional screening for users of this route.
- B.63 Hedges are to be let up by approximately 25cm per year to an overall increase in height of 1m. By gradually letting the hedges up the resultant hedge will be dense without a single line of woody knots. Once the development has been constructed, the existing hedges around the site should be maintained at this new height.

- B.64 Grassland within the site should be seeded and maintained to encourage the development of a species diverse and flower-rich habitat over time, allowing growth over the summer months before cutting or potential grazing with sheep.

Cumulative Effects

- B.65 Within a 10km radius of the proposed development area, there are a number of other solar farms that are either operational, consented or in planning.
- B.66 The proposed Sunnica development is a Nationally Significant Infrastructure Project application. The nearest solar panels proposed at Sunnica would be 10.5km from the proposed Six Oaks Renewable Energy Park. Therefore, there is no potential for any cumulative impacts to be brought about on landscape or visual receptors through the development of both schemes.
- B.67 Potential cumulative effects were considered for the nearest solar developments, the Great Wilbraham Solar Farm and the more distant Heath Road Solar Farm.
- B.68 The assessment showed almost no overlap in visibility between the

proposed Six Oaks Renewable Energy Park and the Heath Road Solar Farm. There would be no simultaneous cumulative effects or cumulative effects on landscape character.

- B.69 The proposed Six Oaks Renewable Energy Park and the Great Wilbraham Solar Farm both lie within the Chalk Hills. The area is sufficiently large for the combination of these two developments being constructed in the landscape character type to have no impact on the appreciation of the character or features that the type is valued for, and therefore no cumulative landscape effects.
- B.70 There is no potential for simultaneous intervisibility between the two schemes due to the nature of the intervening landscape which includes layers of established field boundary and roadside vegetation, as well as woodland blocks, in combination with underlying topographical variations.
- B.71 For A11 road users travelling north-east they would pass the rear-mountings of the Great Wilbraham development 2.5km, approximately 2-3 minutes, before passing the proposed Six Oaks Renewable Energy Park. The magnitude of change of

view would be high for c 350m. The driver would then head a further 6km north-east before views of the Heath Road solar farm would be seen. The layers of landscape in the intervening distance would be seen in sequence, and there would not be a magnitude or scale of effect sufficient to bring about any cumulative effects.

- B.72 For road users travelling south-west they would pass the Heath Road solar farm 6km, approximately 5-8minutes travelling time before passing the proposed Six Oaks Renewable Energy Park. They would then travel 2.5km, approximately 2-3 minutes, before seeing the rear-mountings of the Great Wilbraham development. The magnitude of change of view would be high for c 150m. The layers of landscape in the intervening distance would be seen in sequence, and there would not be a magnitude or scale of effect sufficient to bring about any cumulative effects.
- B.73 It is concluded that the proposed development would not bring about any cumulative effects.

LAND USE AND SOILS (ES CHAPTER 5)

Baseline

- B.74 The site is predominantly arable farmland comprising of large and medium sized fields across a gently undulating terrain. There are a number of infrastructure features existing in the landscape around the potential renewable energy park. These include:
- The National Grid Pelham-Burwell Main 400kV double circuit transmission line crosses the western section of the site in a north south direction.
 - A double UK Power Networks (UKPN) 33kV overhead line (on wooden poles) follows Heath Road, alongside the southern boundary of the proposed site.
 - A local distribution 33kV overhead line (on wooden posts), owned by UKPN, west of the proposal.
 - The A14 trunk road runs along the northern boundary of the site.
 - The A11 trunk road to the east of the proposal.

- B.75 The land at, and surrounding, the proposed development has previously been independently assessed for its agricultural quality and versatility by the former Ministry for Agriculture, Fisheries and Food.
- B.76 The Six Oaks Renewable Energy Park would be located on grade 3 land, 15% grade 3a and 85% grade 3b. According to the government's website, grade 3b means the land is only capable of producing moderate yields of a narrow range of crops such as grass and cereals.
- B.77 Best and Most Versatile (BMV) agricultural land is defined as being grade 1, 2 and 3a, with grade 1 being the best land. The 15% of grade 3a land on the site is interspersed with the grade 3b land.
- B.78 The most recently published baseline data was gathered from existing Government sources reporting 2021 agricultural land provision within the regions and counties of England (DEFRA, 2022 and 2022a). A simple area comparison was then undertaken to identify the percentage of national, regional, and county agricultural land likely to be temporarily taken by the Proposed Development.

Assessment of Effects

- B.79 The temporary impact the Six Oaks Renewable Energy Park will have on BMV agricultural land (ALC grades 1, 2 and 3a) is very limited.
- B.80 The development would result in a temporary use of approximately 0.0054% of farmed area in the East of England region. Within Cambridgeshire, the proposed development equates to approximately 0.031% of total farmland within the county.
- B.81 Due to the very limited impact on the lowest grade of BMV land and the very limited temporary land take for the renewable energy park, the effects on land use would not be significant.

- B.83 The increase from 0.2538% without the proposed development to 0.2592% with the proposed development would not be significant.
- B.84 Within Cambridgeshire, the current projects combined with the proposed development in the planning system (including Six Oaks Renewable Energy Park) would result in the temporary use of 0.47% of farmland against the current county farmland provision.
- B.85 The increase from 0.4396% without the proposed development to 0.4706% with the proposed development would not be significant.
- B.86 Utilising 0.26% of regional farmland, equivalent to 0.47% of farmland within the county, would not have a significant effect on agricultural land use.

Cumulative Effects

- B.82 Considering all the solar farms in operation, in the planning system (excluding any proposals no longer being progressed or refused planning consent) and including the Six Oaks Renewable Energy Park, the total farmland used would equate to 0.26% of East of England regional farmland.

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