FAIR OAKS RENEWABLE ENERGY PARK

Environmental Statement Volume 1 - Non Technical Summary

PREPARED ON BEHALF OF

Fair Oaks Renewable Energy Park Limited

JANUARY 2023



FAIR OAKS RENEWABLE ENERGY PARK

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PREFACE

This Non-Technical Summary forms the first part of a four volume, five part Environmental Statement which describes the findings of the Environmental Impact Assessment (EIA) of the proposed Fair 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 Rushcliffe Borough Council (Planning Team), Rushcliffe Arena Rugby Road, Bridgeford, NG2 7YG 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 CD-ROM free of charge.

To order copies, please contact Engena Limited at:
The Old Stables, Bosmere Hall, Creeting St Mary, IP6 8LL.
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The Applicant may also be contacted at:
https://ridgecleanenergy.com/fairoaks/

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Fair Oaks Renewable Energy Park

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NON-TECHNICAL SUMMARY

- 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 the renewable energy park, the development process and the proposal itself.
- A.3 Part B summarises the findings of the EIA assessments.
- Please note that this document is A.4 a summary of the key issues and findings identified by the EIA. 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 Fair 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 site is located on farmland to the south of the settlement of Clifton (0.7km), Ruddington is 1.4km northeast and Gotham is 1.6 km south-west. The site falls within the jurisdiction of Rushcliffe Borough Council. The location of the site is illustrated in **Plate A.1 on page 4**, the site layout is illustrated in **Plate A.2 on page 5**.
- A.7 The Proposal would take approximately nine to twelve 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 Fair 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 of the ES)



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.3** 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, Rushcliffe Borough Council declared a Climate Emergency in March 2019 five years after the current local plan was adopted. It is therefore expected

that the required actions to resolve the climate emergency will be more strongly reflected in the emerging Greater Nottingham Strategic Plan.

A.17 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.18 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.19 In providing domestic renewable electricity generation, with battery storage to support the variable nature of renewable energy, the Fair Oaks Renewable Energy Park will provide a significant contribution towards reducing carbon dioxide emissions in the UK.



SITE SELECTION AND DESIGN

- A.20 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.21 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 951 - 1 000kWh of solar irradiation falls on each square metre of horizontal surface.
- A.22 The next principal technical constraint is available grid connection. Within

Rushcliffe Borough, the Developer secured a 49.9MW grid connection, with adequate import capacity to provide battery charging capacity on the 132kV overhead line to the southeast of Clifton, south of Nottingham.

- A.23 Land within relative proximity of this connection location was then screened to identify areas with enough contiguous land to have potential to host a solar farm meeting the 49.9MW 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, land was identified to the south of Clifton and Ruddington. The land was observed to have an association with energy infrastructure, particularly the 400kV overhead lines that cross the site and 132kV powerlines to the west of the site and south of Clifton.

- A.25 It was recognised that this parcel of land was within Derby and Nottingham Greenbelt, and that there will be some 'harm' to the openness of the Greenbelt, however, it was judged that this would be of limited duration and is entirely reversible. It is considered that the harm to the openness of the Green Belt has been kept to a minimum given the nature of the proposals, position of the site and the landscape and habitat mitigation proposed. The resultant harm is therefore considered to be limited. No other planning harm has been identified. The Planning Statement that accompanies this planning application considers the matter in detail.
- A.26 A design 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.27 During the latter stages of the iterative EIA process, analysis of the site, its constraints and evolving technology, land to the southern edge of the landholding in the area known as Gotham Moor was excluded from consideration for the placement of new infrastructure to avoid creation of a new crossing over Fairham Brook.

Removing the field to the south also avoided the well used and locally valued public footpath running along the brook.

- A.28 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; and
 - use of wildflower seed.
- A.29 Following assessment of the final site layout, the Fair 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.30 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.31 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.32 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.33 Assessment under EIA is legislated through The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

The Need for EIA

- A.34 A Screening Request was submitted to Rushcliffe Borough Council in October 2021. 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.35 No Screening Opinion was forthcoming from Rushcliffe Borough Council and on 9th December 2021, the Screening Request was formally withdrawn due to lack of resource availability within

the Council. At this time, the applicant volunteered an EIA and identified that it would focus around Landscape and Visual Impact, as well as Ecology.

A.36 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.37 The Developer carried out a full programme of community consultation in support of its proposals for Fair Oaks Renewable Energy Park in line with Rushcliffe Borough Council's Statement of Community Involvement for Planning Policy and Planning Applications (2019).
- A.38 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/fairoaks, containing information on the project.

- A.39 Copies of the invitation were also sent to Ruddington Parish Council, Gotham Parish Council and Barton in Fabis Parish Council. They were also digitally sent to the Conservative MP for Rushcliffe, the portfolio holder for Communities and Climate Change at Rushcliffe Borough Council and the ward councillors for Ruddington.
- A.40 The two public exhibitions were held on the 22nd and 25th March 2022 at St Peter's Rooms, Ruddington.
- A.41 At least 112 individuals attended the exhibitions. Feedback responses are reported in more detail in the Statement of Community Involvement accompanying the planning application.

Other Consultation

A.42 Additionalpre-application consultations included Ruddington Parish Council, Gotham Parish Council, Barton in Fabis Parish Council, East Clifton Ward and the MP for Rushcliffe. The Applicant has remained in contact with Ruddington Parish Council through the development phases.



THE PROPOSED DEVELOPMENT

- A.43 The proposed development is located on farmland to the south of the settlement of Clifton (0.7km), Ruddington is 1.4km northeast and Gotham is 1.6 km south-west. The site falls within the jurisdiction of Rushcliffe Borough Council. The application site comprises a fenced area of approximately 75.2ha.
- A.44 The site is identified as located within Derby and Nottingham Greenbelt and this is discussed further within the Planning Statement accompanying the planning application.
- A.45 The site is currently arable farmland. There are infrastructure features existing in the landscape around the site, including a 400kV overhead power line crossing the site east-west

with two pylons located within the site boundary. An underground pipeline is located just outside of the south of the site boundary traversing the fields in a north-east to south westerly direction.

- A.46 The land at, and surrounding, the Proposed Development has been independently assessed for its agricultural quality and versatility. The Fair Oaks Renewable Energy Park would be located on grade 3a land in its entirety.
- A.47 There are no public rights of way crossing the fenced solar array, BESS and substation compound. Footpaths follow the southern boundary of the proposed site, with a second footpath following a portion of the eastern boundary where it abuts the Great Central Railway. No crossings of the footpaths are required.
- A.48 **Plate A.4** and **Plate A.5** show existing views across the site.



Plate A.4 - View west across site.



Plate A.5 - View across solar site.

- A.49 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); World Heritage Sites or Registered Battlefields within 2km of the potential site area.
- A.50 There is one SSSI (Gotham Hill Pasture, 1.9km west) and three local nature reserves within 2km (Becks plantation (0.8km north), Glapton Wood (1.6km north) and Rushcliffe Country Park (1.1km east)).
- A.51 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.52 The Fair 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.53 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.54 Construction traffic will travel along Pasture Lane and south to Asher Lane to reach the site. A temporary steel plate track (each plate measuring 2.5 x 3 m) will be laid on top of agricultural land in the field parallel to the existing agricultural track at Pasture Lane. There is a single point of entrance off the farm track after it leaves Asher Lane by Fields Farm Cottage. The running surface of new internal access tracks is laid over a permeable stone sub-surface and no formal drainage is proposed.
- A.55 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.56 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.57 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.58 The BESS and substation compound will occupy an area of approximately 1ha.
- A.59 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.

- To connect to the local electricity A.60 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 appropriate through protection equipment. A UKPN control building would be situated on the substation / BESS compound. At a height of up to 5m, this would be the tallest feature of the renewable energy park.
- A.61 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 to the north of the of renewable energy park near to Fields Farm Cottages.

Environmental Enhancements

- A.62 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 (and controlled through planning condition):
 - Woodland copses of native trees, one in the far north of the site and two along the western boundary.
 - New hedgerows around the boundary of the site with occasional small native hedgerow trees along the western and northeastern boundaries of the site.
 - Species-rich meadow across the entire site within the perimeter fencing including beneath the solar PV arrays (but not within the battery storage and substation compound).
 - Grassland between the perimeter fence and the site boundary.
 - A 1ha area of lapwing habitat to the south of Fairham Brook which would be left fallow, allowed to vegetate naturally and ploughed once a year to prevent

the establishment of tall woody vegetation.

- A mix of local native species will A.63 be used and will be agreed with Rushcliffe Borough Council through an Outline Landscape and Biodiversity Management and Enhancement Plan (OLBMEP) to be agreed under Condition. To avoid creating a uniform habitat, a mixture of specimen sizes will be used and ongoing maintenance through grazing, mowing and rotational trimming will allow variation in height to result in a natural appearance whilst maximizing screening benefits. The planting has been specifically designed to reflect the wider pattern and scale of woodland and hedging in the area.
- A.64 The operational site would be maintained to allow benefits to biodiversity whilst allowing the potential for continued agricultural use in the form of sheep grazing (with the intention that a licence would be entered into at the appropriate time).

Site Access

A.65 Access for the delivery of equipment was initially anticipated to be routed through Ruddington Village to site via Asher Lane. During public consultation, (as discussed further in ES Volume 2a Chapter 5 - EIA), valuable information was provided by the community which the Applicant considered and progressed.

- A.66 Consequently, a construction delivery route was adopted from the direction of the M1 and wider highway network, delivery vehicles will approach the site from Remembrance Way/Clifton Lane (A453), then right on to Farnborough Road after the NTU Clifton Campus.
- A.67 Following Farnborough Road clockwise, vehicles will then turn left on to Clifton Lane after approximately 1.9km. After 750m, the route turns right on to Pasture Lane and in to then through the Artex Works facility south towards site along a temporary and non-intrusive road surface parallel to Pasture Lane within agricultural fields to the site.
- A.68 Returning vehicles will follow the reverse of the route taking the appropriate course through road junctions.
- A.69 Construction traffic along Pasture Lane would be controlled by banks men to minimise disruption. Wheel wash facilities would minimise mud and

silt being added to the highway from departing HGVs.

Construction Phase

- A.70 **Plate A.6 on page 14** provides an overview of the construction process as a photographic sequence.
- A.71 The peak in construction deliveries will occur in months seven and eight with twelve additional HGVs movements (six individual HGVs) per day .
- A.72 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.73 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.74 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.75 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.76 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.77 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.78 It is envisaged that the proposed Fair Oaks Renewable Energy Park will take nine to twelve months to construct. A typical construction programme for a project of the scale of the Fair Oaks Renewable Energy Park is shown in **Table A.1.**

FAIR OAKS RENEWABLE ENERGY PARK











Plate A.6 - Photographic Sequence of Construction Process

NON-TECHNICAL SUMMARY

Table A.1	-	Typical	Construction	Programme
		11		

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

- A.79 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.80 It has been modelled that the proposed solar farm will generate an annual average of approximately 43 700 000kWh (net) of electricity. On this basis, the electricity produced by the Fair Oaks Renewable Energy Park will offset approximately 9 270 000kgCO2/annum or 9 270 tonnes CO2 per annum.

Decommissioning Phase

A.81 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.

- A.82 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.83 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 decommisioning will be re-used or recycled in accordance with the waste management hierarchy.

NON-TECHNICAL SUMMARY

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NON TECHNICAL SUMMARY - PART B

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INTRODUCTION

- B.1 The Environmental Impact Assessment (EIA) for the Fair 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 8 of ES Volume 2a); and
 - HBA Environmental LVIA (Chapter 9 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 provided the Agricultural Land Classification survey appended to **Chapter 4 - Existing Conditions**.

- 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 agreed scope as set out in ES Chapter 5 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;
 - Rushcliffe Local Plan 2014; and
 - Ruddington and Gotham Neighbourhood Plans (Ruddington Parish Council, 2021 and Gotham Parish Council 2020).

- 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 8)

B.10 An Ecological Impact Assessment has been undertaken of the proposed Fair Oaks Renewable Energy Park on the ecological resource in the vicinity of the proposed development. The likely significant effects on Biodiversity from the construction and operation of the proposed development are assessed as summarised in this section. Mitigation measures are identified. where appropriate, to avoid, reduce or offset any significant adverse effects identified and/or enhance likely beneficial effects. Taking into account the mitigation measures, the nature and significance of the likely residual effects are summarised. The full assessment can be found in Volume 2a - Chapter 8 of this Environmental Statement and accompanying, Volume 2b - Appendix 8 and Volume 3 - Figures.

Key Target Species (Valued Ecological Receptors)

- B.11 Key target species for the assessment have been identified using the following criteria:
 - Bird species listed in Annex 1 of the EU Birds Directive and/or on Schedule 1 of the 1981 Wildlife & Countryside Act;
 - European Protected Species, protected under The Conservation of Species and Habitats Regulations 2010;
 - Species protected under Schedule 5 of the Wildlife and Countryside Act 1981;
 - Priority Habitats identified under the Natural Environment and Rural Communities Act (2006) Section 41 as habitats of principal importance; and
 - Red-listed species on the Birds of Conservation Concern list (Stanbury et al. 2021), or other national/international red lists.
- B.12 The ecological assessment has, therefore, given particular consideration to all species/ communities recorded

during the baseline surveys present in the study area that meet any of these criteria.

Study Areas

- B.13 The desk study to support this assessment covered all European protected sites (designated and proposed) within 20km of the proposed development, all nationally important sites within 5km and all other protected nature conservation sites within 2km.
- B.14 The field survey areas were chosen to include all areas within the potential zone of ecological influence of the development, where there was habitat that could support important populations, plus an area around that to provide wider context to inform the assessment. The extended Phase 1 habitat survey, breeding bird surveys and protected species surveys covered the proposed development plus up to a 500m buffer (where access/viewing was possible), whilst the wintering bird surveys extended up to a 1km buffer.

Baseline Ecological Conditions

Statutory Designations: International and Nationally Important Sites

 B.15 The only statutory designations within the study area comprise six Sites of Special Scientific Interest (SSSI) within 5km of the proposed development. None would be affected by the proposed development.

Local Wildlife Sites

- B.16 Three Local Wildlife Sites (LWS) are located within 1km of the proposed development and could potentially be affected by it (their locations are shown in **Appendix 8.1 Figure 2**):
 - West Rushcliffe District Disused Railway – adjacent to the eastern edge of the proposed development - a lengthy section of interesting disused railway with several uncommon species, including grizzled skipper and botanical interest.
 - Ruddington Moor Drain approximately 180m north-east from the fenced development area - a field drain with notable species (botanical interest).

 Fairham Brook Nature Reserve

 440m north from the proposed development and at the proposed grid connection location - marsh and riparian habitat with botanical interest and water voles.

Priority Habitats

B.17 There was no mapped priority habitat within the site itself. The proposed grid connection (which would be an associated, but separate and future impact of the proposed development, secured through a separate application for planning permission) would pass underground through Lowland Fen at the Fairham Brook Nature Reserve (though would involve some ground disturbance). The locations of priority habitats within 2km of the proposed development are shown in Appendix 8.1 (Figure 3 and Table 1).

Phase 1 Habitat Survey

- B.18 The Extended Phase 1 survey map of the proposed development is shown in Figure 8.1. The proposed area in which the solar panels will be located is currently entirely arable land.
- B.19 There are widespread intact speciespoor hedgerow and defunct speciespoor hedgerow across the survey

area, but none within the proposed development itself.

B.20 There are 4.5km of wet drains/ditches within/adjacent to the site (and 21.2km across the whole survey area). All were on the site boundary apart from one 430m ditch in the northern part of the site.

Protected Species Surveys

- B.21 Specific field surveys were undertaken for:
 - An assessment of bat roost suitability;
 - water vole;
 - badgers;
 - great crested newts;
 - breeding birds; and
 - wintering birds.

Potential Ecological Effects of the Development

Construction

HABITAT LOSS

8.22 The solar panels and associated infrastructure would all be located on land that is currently arable farmland.

The panels will cover about 30ha of the 84.12ha. total land within the proposed development. Only a small proportion of this area of arable farmland would actually be lost as a consequence of construction. With the solar panels raised above the ground, the permanent land take would typically be only about 5% of the site (BRE 2014).

- 8.23 The only loss of habitat would, therefore, be to arable farmland. This receptor is of low ecological value, and with a high impact magnitude, effects would be minor adverse and temporary which is not significant.
- 8.24 There would be no loss of any habitat associated with the three Local Wildlife Sites (LWS) located in proximity to the proposed development.

POLLUTION

8.25 Any pollution incidents would be highly localised and temporary, and there would be a negligible risk of this impact occurring, which would not be significant. As a result, this would not be expected to result in any significant ecological impact.

DISTURBANCE

8.26 Water voles were found in the Fairham Brook and several of the

other drains surrounding the site. all watercourses have been buffered from the development by at least 9m to ensure that this species is not affected. This receptor is of high ecological value, and with a negligible impact magnitude, effects would be negligible which is not significant.

- 8.27 Badgers were widespread across the survey area, with several setts located. None were within the 30m distance from the development at which disturbance to this species may occur. This receptor is of high ecological value, and with a negligible impact magnitude, effects would be negligible which is not significant.
- 8.28 The only disturbance effect for bats during construction would be to commuting/foraging habitat. The main areas that these species would be likely to use have been buffered by at least 5m. This receptor is of high ecological value, and with a negligible impact magnitude, effects would be negligible which is not significant.
- 8.29 There will need to be a Breeding Bird Protection Plan to ensure compliance with the 1981 Wildlife and Countryside Act (which protects Schedule 1 species from disturbance and all active birds' nests from destruction).

Further details are given in the mitigation section below. This receptor is of high/medium ecological value, and with a low impact magnitude, effects would be minor adverse and temporary which is not significant.

Three wintering bird species were 8.30 taken forward for assessment: little egret, peregrine and black-headed gull. Whilst some displacement from the development site and its surrounds may occur during construction, the area from which any such displacement may occur was not particularly important for any of these species and did not hold any habitat that was not widely available nearby. This receptor is of high/ medium ecological value, and with a low impact magnitude, effects would be minor adverse and temporary which is not significant.

Operation

HABITAT CHANGE

8.31 The habitat within the development site will change from open arable farmland to wildflower meadow with solar panels after construction. This will result in a positive beneficial ecological impact. Furthermore, the site will be buffered by open grassland habitat around all of the watercourses and hedgerow/woodland habitat, which too will deliver an ecological gain.

DISTURBANCE

- It is likely that some breeding bird 8.32 species, particularly those that prefer more open ground, could be displaced from the site as a result of the presence of the solar panels. Of the key ecological receptors, those most likely to be affected include grey partridge, lapwing and skylark. Mitigation measures are set out below that will deliver a net gain to these species and enable the local populations to be maintained. This receptor is of high/medium ecological value, and with a low impact magnitude, effects would be minor adverse and temporary which is not significant.
- 8.33 There could also be some operational phase disturbance effects on wintering birds. The area from which any such displacement may occur was not particularly important for any of the key species and did not hold any habitat that was not widely available nearby. This receptor is of high/

medium ecological value, and with a low impact magnitude, effects would be minor adverse and temporary which is not significant.

Mitigation through Avoidance in Design

- B.34 Buffers to the development have been applied to avoid the more ecologically sensitive habitats within the site. This included:
 - Minimum 9m buffer along the Fairham Brook flowing through the site.
 - Minimum 5m buffer from all other watercourses/drainage ditches.
 - Minimum 5m buffer from all hedgerows, woodland and isolated trees.
- B.35 The site has also been designed to avoid any loss of hedgerow or trees by using existing breaks and farm tracks, avoid any tree felling/damage, and use existing watercourse crossing (so no new watercourse crossing is required). These measures have been considered as applied in the assessments above.

Mitigation for Breeding Birds

- B.36 To avoid disturbance during the breeding season, particularly during the construction phase of the development, further surveys for Schedule 1 species will occure at fortnightly intervals through the breeding season (March-August) for the construction period.
- B.37 Where works affecting habitats that could be used by nesting birds must take place between March and August (inclusive), they will only be carried out following an on-site check for nesting birds by an experienced ecologist, to ensure compliance with the 1981 Wildlife and Countryside Act.
- B.38 Measures to deliver benefit for breeding bird species that may be displaced during operations will be delivered as part of the Landscape and Biodiversity Management and Enhancement Plan (LBMEP).

Mitigation for Other Protected Species

B.39 No other protected species likely to be affected by the development given results from the ecological surveys, but badgers could move therefore, check surveys within 30m of the development footprint should be undertaken prior to construction (to inform the need for any mitigation measures).

B.40 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 Ecological Effects

B.41 The assessment of effects to ecological receptors arising from the proposed development in isolation (reported above), has not identified any effects above 'minor' adverse. Upon consideration of the ecological context and connectivity of the proposed development site, and the substantial benefits to be brought by the proposed enhancement, it is not considered that the proposed development would materially contribute to adverse cumulative effects on relevant ecology. Accordingly, it is not considered that a detailed cumulative assessment would be necessary or proportionate for the proposed development.

Biodiversity Net Gain

- B.42 The data gathered during the desk study and the field surveys have been used to undertake a biodiversity net gain calculation for the project, following the DEFRA/Natural England Biodiversity Metric 3.0 methodology (Panks et al. 2021). The DEFRA Biodiversity Metric 3.0 Tool was used to audit the habitats present on the site, the losses that would occur as a result of the development and the biodiversity net gain that would be achieved through the OLBMEP -**Figure 8.3 of ES Volume 3**.
- B.43 Four specific habitat enhancement measures are proposed within the site boundary:
 - Restoration of lowland meadow

 the large majority of the site is currently arable farmland of low diversity and low ecological value.
 This grassland will be managed after construction of the solar farm to promote the re-establishment of a diverse meadow plant community. The target will be to enhance 83ha of improved grassland to a more biodiverse neutral grassland.

- Native hedgerow planting 3.2km of new native hedgerow will be planted as detailed in the HMP.
- Native woodland planting 0.45ha. of new native broadleaved woodland will be planted in the south-west and north-west corners of the site.
- Provision of 1ha. plot on the southern edge of the site (outside the area in which the solar panels would be located, for ground-nesting birds (including lapwing and skylark).
- B.44 A range of bird and bat boxes will be installed to improve the availability of nesting and roosting resources. This will include:
 - Barn owl boxes two 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).
 - 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 woodland patches (including in the trees along the main stream through the site (see **Figure 8.3**) and on trees within existing hedgerows/field boundaries.

- Bat boxes 10 boxes same locations as songbird nest boxes.
- B.45 Measures will be implemented to ensure that mammal access routes across the site are not impeded by site fences. This will be achieved by either leaving a minimum gap of 20cm between the ground and the fence, cutting gaps at the bottom of fences to allow passage through, or installation of mammal 'gates'. In addition, the restoration of flower-rich lowland meadow will provide enhanced habitat and feeding resources for the local bee populations.
- B.46 The OLBMEP will deliver a net gain of 122 habitat units (an increase of 74%) and 25 hedgerow units (there is no hedgerow in this area currently).
- B.47 Ongoing management of the grassland will be carried out primarily by specialist operational solar management teams, utilising small scale equipment to cut

grassland annually or via grazing stock (sheep) with the intention that a sheep grazing licence being entered into at the appropriate time.

B.48 Management of the mitigation and enhancement measures will be agreed with Rushcliffe Council and controlled through planning condition.

Conclusion

 B.49 Overall, with the proposed mitigation in place, there would be no significant residual adverse ecological effects from the proposed Fair Oaks Renewable Energy Park.



LANDSCAPE AND VISUAL IMPACT ASSESSMENT (ES CHAPTER 9)

- B.50 This section summarises the findings of a landscape and visual impact assessment that has been undertaken to identify the likely effects of the proposed Fair Oaks Renewable Energy Park on the landscape character and visual amenity of the locality.
- B.51 The LVIA and Cumulative LVIA (CLVIA) have been undertaken in accordance with relevant legislation, policy and guidance, with the scope of the assessments being proportional to the scale, nature and location of the proposed development, and with the viewpoint locations identified in consultation with the Council's Design and Landscape Officer.

- B.52 The LVIA has focussed on identifying all "likely significant landscape and visual effects", i.e. landscape and visual effects that are material to the decision making process (see **Appendix 9.2**, paragraph A2.15). It has identified and taken into account the landscape and visual mitigation and enhancement measures that have been embedded into the siting, design, construction, operation and decommissioning of this proposed development, as well as those proposed to further mitigate effects during operation and decommissioning.
- B.53 The CLVIA has focussed on identifying all "likely significant landscape and visual additional cumulative effects" (ie additional cumulative landscape and visual effects that could be material to the decision making process) using publicly available information on the permitted, other proposed and possible solar developments in the study area.
- B.54 This assessment is illustrated by visualisations presented as Figures 9.1
 9.6 in ES Volume 4 Visualisations and is supported by information provided in Appendices 9.1 9.4.

Assessment Process

- B.55 The assessment is an iterative process, undertaken in a series of stages, with each stage revisited during the assessment process and drawing on the assessments undertaken by other disciplines, so that the findings of each stage have been incorporated into the proposed development and have been taken into account in the assessments of residual effects.
- B.56 The assessment process has involved consultations, document and data review, fieldwork observations and photography, computer modelling, computer-generated visibility plans and visualisations, objective measurements and subjective professional judgement.

Preliminary Visibility and Viewpoint Appraisal

- B.57 At an early stage in the design and assessment process, a "bare earth" intervisibility map was generated, extending at least 6 km from the site.
- B.58 In addition to the terrain, a further degree of screening is provided by surface features such as built

development and vegetation as identified in fieldwork observations. A resulting study area extending to 7 km x 7 km, with the site slightly offcentre towards the north, was selected for the more detailed assessments (see **Figures 9.1 – 9.3**). This is the study area referred to throughout this assessment.

B.59 The intervisibility map and fieldwork observations enabled the identification and appraisal of five preliminary viewpoints which were provided to the Council during the pre-application consultations. Final versions of these maps are provided as **Figure 9.4a** and **Figure 9.4b of ES Volume 3**.

Current Landscape and Visual Baseline

B.60 The landscape in the study area has been examined from publicly available aerial photography and databases, published landscape character assessments and fieldwork observations, to identify the landscape fabric of the site and the landscape character of the site and study area. There are no national or local landscape designations in this study area but there are some planning designations which have also been noted.

- B.61 The visual receptor types and locations within the study area have been identified from Ordnance Survey maps, aerial photography, databases, and fieldwork observations.
- B.62 The current baseline also includes all built and under construction development. There are no operational solar farms in the current baseline.

LANDSCAPE FABRIC

- B.63 The landscape fabric of the development site consists of the existing field pattern, the drainage ditch and the low vegetation around the edges of the fields.
- B.64 The landscape fabric of the grid connection route consists of the vegetation along the route, including the lowland fen vegetation alongside Fairham Brook.

Landscape Character

REGIONAL LANDSCAPE CHARACTER AREAS AND DRAFT POLICY ZONES

B.65 The landscapes of Rushcliffe Borough are described and characterised

as part of The Greater Nottingham Landscape Character Assessment (TEP June 2009). This identifies nine regional landscape character areas (RLCAs) each of which is sub-divided into one or more Draft Policy Zones (DPZs).

- B.66 Each DPZ is a distinct and unique area of landscape, relatively homogeneous in character, with a particular combination of geology, soils, topography, drainage, land use, vegetation, field, road and settlement patterns, and perceptual and aesthetic attributes.
- B.67 The study area extends across three RLCAs and six component DPZs. The locations of the RLCAs and DPZs within the study area are illustrated on Figure 9.1 of ES Volume 3.
- B.68 The site is in the South Nottinghamshire
 Farmlands RLCA. The theoretical visibility of the solar PV arrays and Substation and BESS Infrastructure (see Figures 9.4a and 9.4b of ES Volume 3) extends into the Nottinghamshire Wolds RLCA to the south.
- B.69 The baseline landscape character analysis and assessment of effects

on landscape character have focussed on SN01: Clifton Slopes, SN02: Ruddington Alluvial Fringe, SN04: Cotgrave and Tollerton Village Farmlands and NW01: Gotham and West Leake Wooded Hills and Scarps DPZs (Figures 9.4a and 9.4b of ES Volume 3).

PLANNING DESIGNATIONS

- B.70 As shown on Figure 9.2 of ES Volume
 3, the site is located in the Green Belt, in an Urban Fringe Enhancement Area and the Fairham Brook is a Green Infrastructure Corridor, as defined in the Rushcliffe Local Plan Part 1: Core Strategy Adopted December 2014 (RBC 2014) and Part 2: Land and Planning Policies Adopted October 2019 (RBC 2019).
- B.71 The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open (NPPF, paragraph 137). The purpose of the Urban Fringe Enhancement Area is to encourage development within the urban fringe to incorporate accessible infrastructure that provides recreational opportunities, wildlife benefits and enables pedestrian and cycle access to the wider countryside

(see Policy 35). The purpose of the Green Infrastructure Corridor is to ensure that the primary functions of the GI network are maintained and enhanced, and the primary functions for GI Corridors 3, 7 and 15 are ecological networks (wetland, grassland and woodland creation, protection and enhancement), floodwater storage, and improved pedestrian and cycling connectivity (see Policy 35).

- B.72 These are not areas designated for the quality of the landscape and so are not landscape designations, but the indirect effect of these planning designations is to conserve and, in some cases, enhance the character of the landscape, and so they have been noted in the detailed assessments of landscape character.
- B73 There are no other national or local landscape designations in the study area.

Likely and Possible Future Landscape and Visual Baselines

B.74 There is one permitted solar farm and one permitted solar array in the study area, which are likely to be constructed and operational during the lifetime of the development. There is also an extensive permitted residential and employment development called Fairham Pastures immediately south of Clifton, which is also likely to be constructed during the lifetime of the development, so all of these have been included in a "likely future baseline".

- B.75 Within the study area, there are also two solar farms with validated planning applications, which could be permitted and operational during the lifetime of the development, so these have also been included in order to consider a "possible future baseline".
- B.76 No other potential changes to the current baseline have been considered.

LVIA Parameters

- B77 Visual receptors were identified as residents in villages and individual properties, walkers, cyclists and equestrians on the public rights of way network, visitors to tourist attractions and motorists on the main and minor roads.
- B78 Nine viewpoints have been selected to represent the landscape resources and visual receptor types and locations in the study area. Visualisations prepared

from these representative viewpoints are presented in **ES Volume 4 - Visualisations**.

- B79 Elements and activities of the construction, operational and decommissioning phases of the proposed development with the potential to give rise to significant effects on landscape and/or visual amenity have formed the basis of the assessment.
- B80 The timescales taken into account in the assessments are the length of the construction phase (9 - 12 months), operational phase (40 years) and decommissioning phase (9 - 12 months), and the timescale selected to illustrate the effectiveness of the mitigation measures (5 – 40 years).
- B81 The direct/indirect, short/medium/ long-term temporary, permanent, and beneficial/adverse effects of the proposed development have been considered in the context of the current baseline.
- B82 The site is not near to any country borders and there will not be any transboundary landscape or visual effects.

Viewpoint Analysis

- B.83 Nine viewpoint locations have been selected to represent the more open views of the proposed development from publicly accessible locations within the various landscape character areas and visual receptor locations in the study area. These viewpoint locations were identified in consultation with the Council's Design and Landscape Officer (RBC 3 January 2022).
- B.84 Analysis was then undertaken at each viewpoint to predict the likely changes in landscape character and views at these locations as a consequence of the construction, operational and decommissioning phases of the proposed development and to identify whether these changes would be significant.
- B.85 The viewpoint analysis is illustrated in Figures 9.5.1 9.5.9 of ES Volume
 4). The photographs were taken on 17 November 2021 and 17 February 2022 (when deciduous vegetation was not in leaf) and so the photomontages illustrate the worst case, ie the extent to which the proposed development would be visible in late autumn through

to early spring. Some additional screening would be provided by vegetation in late spring, summer and early autumn when deciduous trees and hedgerows are in leaf and hedgerows may be taller (prior to seasonal pruning).

B.86 The viewpoint analysis has also considered the extent to which the views could be progressively mitigated during the operational phase as the proposed new boundary hedgerows, hedgerow trees and wooded copses establish.

Assessment of Effects on Landscape Resources and Visual Amenity

B.87 An assessment has been undertaken of the effects of the proposed development on the landscape fabric of the site, the character of each landscape character area and a range of receptor types and locations. This has drawn on the visibility and viewpoint analyses and other observations and has been undertaken in accordance with the methods of assessment of effects on landscape fabric, character and visual amenity, as described in **Appendix 9.2**.

B.88 The viewpoint analysis is only a sample of locations in the study area, so it is necessary to undertake this further step in the assessment so that all likely significant effects of the proposed development on landscape resources and the visual amenity of receptors in the study area have been identified.

Assessment of Cumulative Effects on Landscape Resources and Visual Amenity

B.89 An assessment has also been undertaken of the likely cumulative effects of the proposed development on the character of each landscape character area and a range of receptor types and locations, taking into account the likely future and possible future baselines in the study area. This has drawn on the visibility and viewpoint analyses and other observations and has been undertaken in accordance with the method of assessment of cumulative effects, as described in **Appendix 9.2**.

Mitigation & Enhancement

Embedded Siting and Design Mitigation

- B.90 A number of mitigation measures have been incorporated into the site selection, design and construction of this proposed development which will limit the effects on landscape and visual amenity. These include:
 - Site location on arable land and outside any national or local landscape designations, thereby avoiding the more sensitive and valued landscapes.
 - Site access utilising an existing farm track which would avoid effects on landscape fabric.
 - Protection of existing features using temporary protective fencing to protect features of ecological, and/or landscape value on the site during the construction phase.
 - Internal access tracks running a single site track up the centre spine of the site with only two side spurs, thereby minimising the amount of hard surfacing on the site.

- Solar PV arrays locating these within the existing field pattern and utilising existing drainage crossing points, thereby avoiding the need to remove any vegetation or undertake any works to the drainage ditches.
- Battery storage and substation compound – locating this adjacent to the boundary of the site and away from public rights of way and residential properties, keeping the solid elements of infrastructure to 5m or below, thereby limiting the height and effects of these elements on landscape character and visual amenity.
- Services laying all services underground where possible.
- Lighting no permanent external lighting is proposed, with safety lighting in the BESS and substation compound lit only as and when needed, such as to provide lighting for maintenance visits after dark (eg on winter afternoons).
- Site restoration at the end of the construction phase all areas disturbed by the works will be restored which will minimise the

footprint of the development and the long-term effects on landscape and visual amenity.

• Decommissioning – at the end of the operational phase which will restore the site to agricultural use.

Further Landscape and Biodiversity Mitigation and Enhancement

B.91 The further landscape and biodiversity mitigation and enhancement proposals appropriate for this site were informed by the pre-application consultations, this LVIA and the Ecological Assessment (Chapter 8 - Ecology) and are illustrated in the Outline Landscape and Biodiversity Mitigation and Enhancement Plan (LBMEP) (Figure 8.3 of ES Volume 3).

B.92 In

In accordance with NPPF (section 15, see paragraph 65), the Outline LBMEP has drawn on the intrinsic character of the countryside in this study area and sought to maximise the wider benefits from natural capital and ecosystem services, in particular, the benefits of hedgerows, trees and woodland, species-rich meadows and other habitats specific to this locality.

- B.93 These measures are indicative and will be secured by way of a planning condition(s) requiring the submission of a detailed LBMEP and a Landscape and Ecological Management Plan (LEMP).
- B.94 The Outline LBMEP includes:
 - Woodland copses of native trees, one in the far north of the site and two along the western boundary.
 - New hedgerows around the boundary of the site with occasional small native hedgerow trees along the western and northeastern boundaries of the site.
 - Species-rich meadow across the entire site within the perimeter fencing including beneath the solar PV arrays (but not within the battery storage and substation compound).
 - Grassland between the perimeter fence and the site boundary.
 - A 1ha area of lapwing habitat to the south of Fairham Brook which would be left fallow, allowed to vegetate naturally and ploughed once a year to prevent

the establishment of tall woody vegetation.

- B.95 The new hedgerow planting would use a mix of native species, typically: Hawthorn Crataegus monogyna 30%
 Blackthorn Prunus spinosa 30%
 Hazel Corylus avellana 15%
 - Field MapleAcer campestre 10%DogwoodCornus sanguinea 5%Crab AppleMalus sylvestris 5%Buckthorn Rhamnus cathartica 5%
- B.96 There are a few small scrubby trees along the drainage ditches around the site and some hedgerow trees will be incorporated into the new hedgerow planting to provide some wildlife and visual diversity. These will be small native tree species commonly found in the field boundary hedgerows in the wider area, including Hawthorn (*Crataegus monogyna*), Hazel (*Corylus avellana*), Crab Apple (*Malus sylvestris*) and Field Maple (*Acer campestre*).
- B.97 The aim would be to create a diverse meadow across the site, with a mosaic of habitats to benefit a range of flora and fauna, including bees. The approach would be to select a commercially

available and locally grown meadow seed mix with a range of species that would suit the varying microclimates across the site (due to variations in shade, soils and soil moisture) and allow the meadow to evolve into a mosaic of habitats to suit the varying microclimates. The meadow would be cut twice a year, in late summer and autumn, after the flowers have set seed, to ensure the continuance of the component species.

- B.98 This planting and seeding would be undertaken in the first available planting and seeding seasons following the end of the construction phase. Further to this, there would be long-term management of the wooded copses, hedgerows, hedgerow trees, meadow, grassland and lapwing habitat on and around the site to maximise their wildlife value and also their amenity (screening) and aesthetic value.
- B.99 These measures would be sympathetic to and would enhance the character, quality and biodiversity of the site and surrounding landscapes, would be visually attractive and would add to the overall quality of the area over the lifetime of the development (in accordance with the NPPF (MHCLG

July 2021). They would improve the compatibility of this landscape to the type and scale of energy development proposed (in accordance with Local Development Plan (LDP) Part 1 Policy 2) and protect and enhanced the Fairham Brook GI corridor (in accordance with LDP Part 1 Policy 16).

- B.100 The Outline LBMEP would provide a buffer between the surrounding watercourses and the perimeter fence, would conserve and enhance the biodiversity, landscape and recreational value of the watercourse and corridor through good design and includes the long-term landscape and ecological management plan for this buffer (see LDP Part 2 Policy 19).
- B.101 These measures will also ensure that one of the primary functions of Green Infrastructure Corridor 7 : Fairham Brook/Packman Dyke and Rushcliffe Country Park Green Corridor, is maintained, ie its ecological networks (wetland, grassland and woodland creation, protection and enhancement), with enhancements to its ecological value (in accordance with LDP Part 2 Policy 35).
- B.102 No mature trees will be affected and the proposed new tree planting in the

copses and hedgerows would include a wide range of locally native tree species, to provide resilience to climate change and diseases (in accordance with LDP Part 2 Policy 37).

Conclusions

- B.103 The entire footprint of the construction phase would be on land currently used for arable production and there would not be any adverse effects on landscape fabric as a consequence of the construction or operational phases. The woodlands, hedgerows, hedgerow trees and species-rich meadow proposed in the Outline IBMEP would establish and mature during the operational phase which would result in long-term beneficial effects on the landscape fabric of the site during the remainder of the operational phase. There would be some disturbance of the species-rich meadow and grassland as the site is dismantled, but this would be restored at the end of the decommissioning phase.
- B.104 The site is located within SN02: Ruddington Alluvial Fringe DPZ and there would be some short-term significant adverse effects on the

character of the site and surrounding landscape within SN02 during the construction phase. During the operational phase (years 1 - 5) there would be some medium-term significant adverse effects on the character of the site and surrounding landscape, but these significant effects on landscape character would not extend beyond the railway line to the east of the site, more than approximately 850 m to the north and west or more than 400 m south of the site (to Moor Lane). During the remainder of the operational phase (years 5 onwards) the proposed new boundary vegetation would establish and significant effects on landscape character would be confined to the site and immediate surroundings, extending no more than approximately 50m from the perimeter vegetation.

B.105 There would not be any significant effects on the landscape character of SN01: Clifton Slopes DPZ (to the west), SN04: Cotgrave and Tollerton Village Farmlands DPZ (to the north and east) or NW01: Gotham and West Leake Wooded Hills and Scarps DPZ (to the west and south) during the construction, operational and decommissioning phases of the proposed development.

- B.106 The proposed development would be screened by topography from Ruddington, East Leake and Barton in Fabis, and by intervening field boundary vegetation from Bradmore and Bunny, so there would not be any effects on views or the visual amenity of residents in properties within these five settlements.
- B.107 There would be views southwards towards the site from the properties along Summerwood Lane and Manesty Crescent on the southern edge of Clifton. However, the development would be 0.7 – 1.2 km from these properties and would occupy a narrow sector of the view beyond two lines of pylons, and there would not be any significant adverse effects on views and visual amenity for residents in properties in Clifton.
- B.108 There would be a significant effect on the views and visual amenity of residents in Fields Farm Cottages and Ruddington Farm during the construction and early operational phases, before the boundary vegetation has established, but not during the remainder of the operational phase nor during the decommissioning phase as the site would then be screened

by the proposed boundary planting. The acceptability of significant effects on residential properties is a planning matter and is addressed in the accompanying Planning Statement.

- B.109 Views from other properties in the surrounding area, such as Moorend Farm and Farm Cottages, Moor Farm, Long Manor, Gotham Moor Farm, Fairholme Farm, Glebe Farm and Top Barn Cottage would be largely screened by intervening vegetation and/or buildings and there would not be any significant effects on the views and visual amenity of residents in these properties.
- B.110 Views from Rushcliffe Country Park, Nottingham Transport Heritage Centre and Nottingham Heritage Railway, Ruddington Village Museum, the Framework Knitters' Museum and the human sundial in Ruddington would be screened by topography and there would not be any effects on views and the visual amenity of visitors to these visitor attractions. The proposed development may be visible from some of the more elevated and open locations on the Rushcliffe Golf Course. but these would be distant views and there would not be any significant

effects on views and the visual amenity of golfers on this course.

- B.111 Views of the proposed development would be screened by topography from the Trent Valley Way and from Ruddington Walks # 2, 3 and 4 and so there would not be any effects on the visual amenity of users of these routes.
- B.112 There would be views of the proposed development from Midshires Way on Lantern Lane, and from the Gotham Ride and the Gotham Heritage Trail over Gotham Hill and on Court Hill. However, views from most of these routes would be screened, such as by built development within Gotham and vegetation on the West Leake Hills, and there would not be a significant effect on the visual amenity of users of these routes.
- B.113 Walkers on the footpath alongside the railway line to the immediate east of the site (Ruddington FP6) and on the footpath from Gotham to the railway line (Gotham FP5) within 1km of the site would have relatively close and open views of the site and there would be a significant effect on the visual amenity of walkers on these footpaths during the construction and operational phases.

- B.114 For walkers on the footpath from Clifton to Gotham (Barton in Fabis FP4) and on footpaths and bridleways to the east of the railway line, including around the periphery of Rushcliffe Country Park and across Bradmore Moor and Bunny Moor, there would be significant effects on views and visual amenity during the early operational phase but not during the construction phase, the remainder of the operational phase or the decommissioning phase.
- B.115 There would be views of the proposed development from a short section of the A543 and a parallel section of Green Street where these cross the lower slopes of Brands Hill, northwest of the site and from Nottingham Road to the northwest and west of the site. However, motorists will be travelling swiftly, their direction of travel is not towards the site and there would not be any significant effects on views and the visual amenity of motorists on these roads. Intervening vegetation would screen views towards the site from the A60, so there would not be any effects on views and the visual amenity of motorists on the A60.
- B.116 With regards to cumulative effects, due to the separation distances between

the permitted and proposed solar farm developments in the study area, each would affect the character of the landscape and the views and visual amenity of receptors local to each site. Consequently, the proposed development would not result in any significant additional cumulative effects on landscape character or visual amenity in the context of any of these schemes.

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NON-TECHNICAL SUMMARY

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