OAKLANDS FARM SOLAR PARK

Applicant: Oaklands Farm Solar Ltd

Environmental Statement
Non-Technical Summary
January 2024
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Revision: -

Planning Act 2008
Infrastructure Planning (Application: Prescribed Forms and Procedure) Regulations 2009 - 5(2)(a)

Oaklands Farm Solar Park

Environmental Statement
Non-Technical Summary

Final report
Prepared by LUC
January 2024

The image used on all the Application document front covers is a photomontage of the Proposed Development from Viewpoint 2: Cross Britain Way at Year 1 in Winter.

Image 1: Photomontage of the Proposed Development from Viewpoint 2: Cross Britain Way at Year 1 in Winter

Introduction

Background

1.1 This document is the Non-Technical Summary (NTS) of the Environmental Statement (ES)[1] which accompanies an application for development consent made by Oaklands Farm Solar Limited ('the Applicant'). The NTS summarises the key findings of the Environmental Impact Assessment (EIA) which has been undertaken by LUC and technical specialist consultants on behalf of the Applicant to assess the effects of the construction, operation and decommissioning of Oaklands Farm Solar Park ('the Proposed Development').

1.2 The ES is divided into 4 volumes:

- Volume 1 – assessment chapters.
- Volume 2 – maps and figures which accompany the assessments.
- Volume 3 – appendices to the assessments.
- Volume 4 – visualisations to accompany the Landscape and Visual Assessment.

1.3 The Proposed Development is located in South Derbyshire District Council local authority area and is close to the boundaries of East Staffordshire and Lichfield Districts. It is south-east of Walton-on-Trent and south of the former Drakelow Power Station. The location of the Proposed Development is shown in **Figure 1**.

1.4 The Proposed Development will comprise a solar farm with a Battery Energy Storage System (BESS) and a connection to the UK electricity transmission system.

1.5 As the Proposed Development would be an onshore generating station with a generating capacity of over 50MW an application for a Development Consent Order is being made under

[1] The section numbering in this document does not align with the numbering of the ES chapters.

the Planning Act 2008 to the Planning Inspectorate (the examining authority), for determination by the Secretary of State for Energy Security and Net Zero (the consenting authority).

The Applicant

1.6 The Applicant is a wholly owned subsidiary of BayWa r.e. UK Limited, an established renewable energy developer. BayWa r.e. UK Ltd has extensive experience of delivering solar projects in the UK, with 23 UK solar projects delivered to date.

Environmental Impact Assessment (EIA)

1.7 The EIA process is used, during the development of projects, to identify potentially significant environmental effects likely to occur as a result of a proposed development. Reporting these effects enables the consenting authority, the examining authority, statutory consultees, and wider public to consider the environmental effects of an application. The EIA process is also used during the design process to avoid and reduce impacts. Where adverse environmental effects have been identified, changes can be made to the design of the proposed development, and additional measures, known as mitigation measures, can be taken to reduce and avoid these impacts. In this way, the assessment process feeds back to inform the final design.

1.8 EIA is a formal process which requires the applicant to identify, describe and assess effects and state whether any identified effects are significant or not (either positive or negative). The findings of the assessment process are reported in an ES and summarised using non-technical language in an accompanying NTS document. This document is the Oaklands Farm Solar Park NTS which meets the requirements of the Infrastructure Planning EIA Regulations[2].

1.9 The EIA for the Oaklands Farm Solar Park considers the following topics:

- Landscape and Visual
- Ecology
- Historic Environment
- Water Resources and Flood Risk

[2] Statutory Instrument 572 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

- Ground Conditions
- Transport and Access
- Noise
- Socio-Economics
- Climate Change
- Glint and Glare
- Agriculture and Soils
- Other Issues:
  - Major Accidents and Disasters
  - Air quality
  - Waste
  - Human health
  - Telecommunications and Utilities

1.10 Each of the above topics used criteria to categorise the identified effects as major, moderate, minor or negligible. Effects assessed as being of 'major' or 'moderate' significance are considered to be significant effects in the context of the Infrastructure Planning EIA Regulations. Significant effects must be taken into account by the relevant decision makers.

1.11 The EIA also assesses potential effects from other nearby developments in combination with the Proposed Development – known as ‘Cumulative effects’. The list of relevant cumulative developments for this project are listed in **Chapter 2: The Environmental Impact Assessment and Methodology** in the ES.

1.12 During the EIA process local and national organisations were consulted to gain more information about the Site, agree the best methods to carry out the assessment and discuss early findings of the assessments. The organisations consulted include:

- The Planning Inspectorate
- Derbyshire County Council
- South Derbyshire District Council

- Local Parish Councils
- Derbyshire Fire and Rescue Service
- Environment Agency
- Historic England
- Natural England
- National Grid

1.13 As required by the EIA Regulations, the ES has been prepared by 'competent experts' in relevant specialisms.

Minimising Environmental Effects

1.14 During the design of the Oaklands Solar Farm measures were taken to reduce the environmental effects of the Proposed Development. These include:

- Locating solar equipment and infrastructure as far from residential properties as possible to reduce the visual effects and disturbance from noise.
- Moving infrastructure out of areas that could flood.
- Retaining as much existing habitat such as ancient and veteran trees, hedgerows and ancient woodland habitat on the site.
- Not diverting or changing the existing Public Rights of Way (PRoW) which crosses the Site.
- Locating the site access points to reduce impacts on the local road network.
- Keeping operational lighting to a minimum.

1.15 In addition, best practice measures to minimise environmental effects to be adopted during construction are set out in an Outline Construction Environmental Management Plan (CEMP); during operation in an Outline Operational Environmental Management Plan (OEMP); and during decommissioning in an Outline Decommissioning Environmental Management Plan (DEMP).

Overview of the Site and the Proposed Development

The Site

1.16 The Site lies within the administrative boundaries of South Derbyshire District Council and Derbyshire County Council. It is located approximately 0.25km west of the village of Rosliston and 0.7km south-east of Walton-on-Trent, and extends from the former Drakelow Power Station, north of Walton Road, to the south of Coton Road. **Figure 1** shows the Site Boundary, which is also known as the Order Limits. The Site occupies a total area of approximately 191 hectares.

1.17 The Site mainly comprises agricultural land of arable and pastoral fields, enclosed by low-clipped hedgerows with occasional hedgerow trees, and post and wire fencing. A small area of the northern section of the site is located within land associated with the operational National Grid Drakelow Substation and this area comprises scrub and trees and a series of overhead power lines.

1.18 The Site is crossed by a series of large scale power lines connecting into the Drakelow Substation. A small section of the Cross Britain Way / National Forest Way long distance path crosses the Site. The Site lies within the National Forest.

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 1: Site Location Plan

Order Limits / Site Boundary

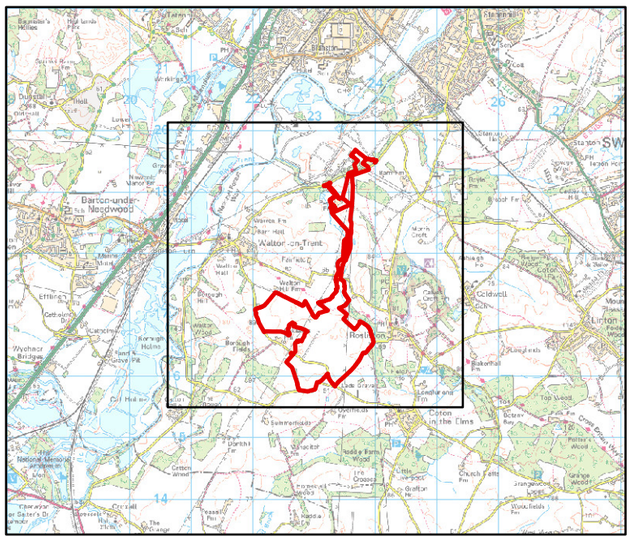

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Image 2: Typical operational solar farm

Development Description

The Proposed Development

2.1 Figures 2a and b show an illustrative layout of the Proposed Development including the key components noted below. Typical examples of the equipment are shown in **Plates 1 to 4**[3] below.

2.2 The main components of the Proposed Development comprise:

- The solar panels which are fitted to metal mounting structures, generally piled into the ground. These will be up to 2.7m in height. The solar panels capture particles of light and convert it to an electrical current.
- Solar Inverter Units which are attached at the back of the panels convert the initial electrical current from direct current (DC) to alternating current (AD) so it can be exported to the grid.
- Transformer Units spaced across the Site. The electrical current generated by the solar PV panels needs to be stepped up from 33 kilovolts (kV) to 132kV to match the voltage required for export to the National Grid.
- The Battery Energy Storage System (BESS). The BESS compound in the centre of the Site, contains a series of batteries, power conversion system units and transformers to store and discharge electricity when required.
- A Substation which manages the flow of electricity between the Proposed Development, and the National Grid, changing voltage upwards or downwards as necessary via large 132/33kV transformer units. The Substation compound will comprise two transformers, a control building, staff welfare and storage units, and fire suppression/fighting systems.

[3] Images in this chapter provided by BayWa r.e.; all other images in this document by LUC and Kernon Countryside Consultants.

- Low and medium voltage (up to 33 kV) electrical Cabling will collect electrical output from the solar PV modules and transfer it to the inverters to converted from DC to AC. Underground cabling will then transfer the electricity to the transformers and Proposed Development's substation.
- High voltage 132kV underground grid cabling will connect the Proposed Development's substation to the National Grid at Drakelow.
- Fencing around the perimeter of the Site will comprise agricultural stock wire mesh deer fencing, with wooden posts and a single line of barbed wire where necessary. For additional security at the entrance to the Site off Coton Road, a metal post and mesh fence will be installed. Both the BESS and the Substation will be secured by metal palisade fencing.
- Pole mounted CCTV cameras will be mounted throughout the site.
- Access tracks. Existing farm access tracks will be used where possible. Construction access tracks will be between 3.5m and 6m wide and will be made of compacted stone gravel. Once the Proposed Development is operational, access tracks north of Rosliston Road will be decommissioned. Access tracks within the Oaklands Farm area, around the solar panels, BESS and the Substation will be 3.5m wide and either compacted stone/gravel or grass corridors.
- Construction compounds for the coordination of construction activities and storage of material and equipment.
- Watercourse crossings where necessary for cables or access tracks.

Plate 1: Typical Solar PV Panels

Plate 2: Typical mounting structures and string inverter

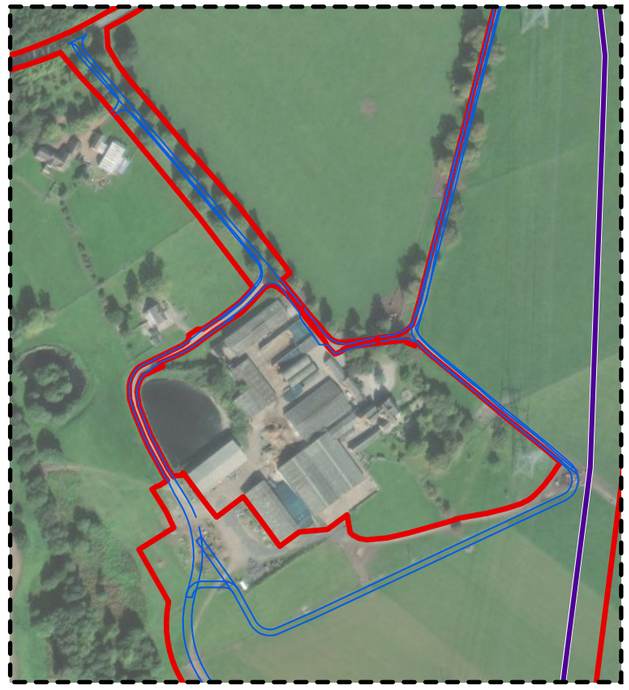
Plate 3: Typical transformer on a solar farm site

Plate 4: Typical Deer Fencing

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 2a: Illustrative concept design

- Order Limits / Site Boundary
- Illustrative permanent access track
- Illustrative temporary construction access track
- Illustrative underground grid connection cable



Note:
This figure shows the illustrative infrastructure design, for detailed proposed landscaping design see Appendix 5.6

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Oaklands Farm Solar Park
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Figure 2b: Illustrative concept design

- Order Limits / Site Boundary
- Battery Energy Storage System
- PV panel
- Substation area
- Illustrative permanent access track
- Illustrative temporary construction access track
- Illustrative underground grid connection cable

Note:
This figure shows the illustrative infrastructure design, for detailed proposed landscaping design see Appendix 5.6

PINS reference: EN010122

0 0.5 1 Km

Map scale 1:8,000 @ A3

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Access

2.3 During the **construction** phase the site will be accessed as follows (see **Figure 3: Site Access Points** for location of each numbered access point):

- During construction the following access points will be used (in the northern part of the site) to enable vehicles access direct from Walton Road:
  - **Access 1B** - an existing (but currently unused) farm access point off Walton Road into Park Farm will be used as the **entrance** for HGVs and light vehicles and will not be used during operation of the Proposed Development.
  - **Access 1A** - An existing farm access point off Walton Road into Park Farm. This will be an **exit** only for mostly HGV construction vehicles, with a right turn only on exit. This access will not be used during operation of the Proposed Development.
- A new 2km Temporary Construction Haul Road will be installed from the above access/exit points, across Park Farm, Fairfield Farm, and Oaklands Farm, to allow HGVs to travel to the construction compounds within the Oaklands Farm area. To leave the Site, HGVs will re-trace the route and exit onto Walton Road.
- **Access 2** - a new permanent access will be created north off Walton Road into land adjacent to Drakelow substation. This will be used for installation and (occasional) ongoing maintenance of the 132kV cabling to be laid in National Grid's non-operational land adjacent to the Drakelow substation.
- **Access 3** - An existing access into National Grid's Drakelow Substation will be used during construction and operations works associated with connection assets within National Grid's operational compound.
- **Access 4** - A new access across Rosliston Road to serve the Temporary Construction Haul Road providing access north and south only . During construction, vehicles will not be able to enter the Site from Rosliston Road. Once construction is complete, the access on the northern side of Rosliston Road will be removed (and will only be reinstated in emergency situations or at decommissioning of the Proposed Development). The access on the southern side of Rosliston Road will remain following completion of construction, but only as a secure gated access for response to emergency health and safety incidents.

- **Access 10** - Improvements to an existing crossroads at Coton Road. HGVs will cross Coton Road heading north and south at this crossroads but will not be able to exit onto Coton Road. All HGVs will be required to leave the Site (to the north) via the Temporary Construction Haul Road and exiting onto Walton Road at the Park Farm Exit Junction (1A on **Figure 3**). Smaller construction vehicles will be able to enter and exit the Site off Coton Road if required.
  - Access from Coton Road (**Access 10**) will be restricted to the two Abnormal Indivisible Loads (AILs) delivering the large Substation transformer units. These will access the Site at the Coton Road Crossroads from the east, turning right off Coton Road. The unloaded AILs will exit at the same point, turning left and following the same route back along Coton Road.

2.4 The following permanent access points are required during the **operational** phase:

- **Access 3** - National Grid's existing access off Walton Road into Drakelow Substation. This will be used infrequently and only to maintain connection assets within National Grid's operational land within Drakelow Substation.
- **Access 2** - New access off Walton Road into Drakelow Substation. This permanent access will be used infrequently for operations, maintenance and decommissioning access to the 132kV cabling.
- **Access 4** - The new access on the south side of Rosliston Road will be retained throughout operations as a secure gated access, for response to emergency health and safety incidents only.
- **Access 10** - The access off Coton Road will be the primary operations and maintenance access and exit during the operational phase.
- **Access 5** - An existing farm access point off Coton Road (just north west of Oaklands Farm) will be an entrance only junction.
- **Access 6, 8 and 9** - Existing farm access points off Coton Road (just west and north west of Lads Grave) will be an entrance only junctions.
- **Access 7** - An existing farm access point off Catton Lane will be an entrance only junction.

Lifespan of the Proposed Development

2.5 Subject to the granting of Consent, it is anticipated that the construction of the Proposed Development will take up to 2 years. Consent is being requested to operate the Proposed Development for up to 40 years. At the end of the 40 year operational period the Proposed Development will be fully decommissioned.

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 3: Site Access Points

- Order Limits / Site Boundary
- Illustrative permanent access track
- Illustrative temporary construction access track
- Illustrative underground grid connection cable
- Battery storage area
- Substation area
- PV panel
- Delivery/construction compound
- Onsite construction compound
- Access point

Point 1A, 1B: Main construction and decommissioning access. All HGVs and large vehicles/machinery, managed by temporary traffic lights or banksmen. Point 1A: exit and right turn only. Point 1B: entry only.

2: Access for the construction, maintenance and decommissioning of the underground electrical cable connection into the Drakelow substation. No right turn to exit.

3: Existing Drakelow substation operational access. To be used for the intermittent maintenance of the cable connection into the substation as necessary during the lifetime of the project.

4: Main construction and decommissioning route across Rosliston Road. All HGVs and large vehicles/ machinery. No entry on to or exit off Rosliston Road. Crossing managed by banksmen/temporary traffic lights. Access south off Rosliston Road retained during operation solely for access for emergency vehicles

Point 5, 6, 7, 8 & 9: Small construction vehicles and operational/maintenance access. Small vehicles and machinery only and entrance only – exit to be at Point 10.

10: Main entry and exit for operational and maintenance vehicles. Access for abnormal loads (2 deliveries via Coton-in-the-Elms). Entry and exit, managed by visibility splays.

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0 0.5 1 Km

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Image 3: Photo of the Site with existing overhead lines

Site Selection and Design Strategy

Site Selection

3.1 The Site was selected by the Applicant for a number of reasons, including the following:

- The Site is close to Drakelow Substation.
- There are no overriding environmental constraints (e.g. habitats, species, land designations and protected areas, agricultural land classification, flood risk), and minimal interaction or impact on local communities.
- The size and topography of the Site are suitable for solar development with safe access points off the local highway, and acceptable physical constraints (e.g. utilities).

3.2 Site selection was informed by a series of studies into the feasibility of the Site for solar development. In addition, a review of similar sized land parcels within 10km of the National Grid Drakelow Substation was undertaken to determine whether there were available alternatives to the chosen Site. The review concluded that none of the areas identified would be less sensitive or otherwise more suitable than the Oaklands Farm area.

Design Process

3.3 During the design process the following factors were considered and influenced the illustrative layout, which can be seen in **Figures 2a and 2b**:

- **Landscape and Visual**: The design sought to integrate the Proposed Development into the landscape, preserving key qualities of landscape character (retaining existing field patterns, hedgerows, woodland and trees), and minimising views from settlements and residential properties. Consideration was given to the siting of the BESS and Proposed Development's Substation in relation to residential properties and existing natural screening, and whether

the grid connection cabling to Drakelow should be underground or overhead. The LVIA also identified areas for new planting to mitigate (reduce) visual impacts.

- **Noise**: The location of the BESS and the Proposed Development's Substation were considered in relation to nearby residential properties. The BESS was moved from the edge of the Site to a more suitable location in the centre of the southern part of the Site (the substation was subsequently relocated to this location) to increase the distance from residential properties. Noise modelling was used to influence the location of the string inverters and internal access tracks to ensure they are screened as much as possible from residential properties by intervening solar panels.
- **Ecology**: The Proposed Development has been designed to retain all trees with high/moderate bat roost potential, with design modifications being made at the entrance to the National Gird Drakelow Substation to avoid the loss of high and moderate bat roost suitability trees. The design avoids removal of high/medium value trees and maintains existing hedgerows (unless species poor / defunct) implementing a 5m buffer from the Proposed Development infrastructure. No construction works will be undertaken within 30m of badger setts during the breeding season (November to June inclusive) and will be subject to licence if required outside this time.
- **Utilities**: Buffers between the solar infrastructure and existing overhead lines and underground utilities were agreed with transmission and distribution network operators. Other utilities such as gas, telecoms, sewage and water pipes were identified through utility and title searches, and discussions with asset owners, and appropriate buffers agreed and applied.
- **Hydrology**: The Environment Agency (EA) requested a buffer of 8m (easement) between the top of any watercourse bank and any infrastructure. Mapping flood zones for fluvial and surface water flooding identified areas where site infrastructure was to be excluded, and led to the relocation of the Proposed Development's Substation and BESS out of an area where surface water ponds on site.
- **Traffic**: Suitable routes to Site were identified for construction vehicles and abnormal loads. The design process considered limitations such as the narrow bailey bridge in Walton-on-Trent, residential populations and existing vegetation or other sensitive ecology to arrive at

suitable access points for the Site. As the design has progressed the following changes to the road network and Site have influenced the proposed routes to Site:

- Weight limit on Chetwynd Bridge (18 Tonnes, later reduced to 7.5 Tonnes).
- Walton bypass delivery delay.
- The provision of 'in-only' and 'exit only' access points for construction vehicle to avoid stacking of vehicles entering/exiting the Site and to ensure road visibility is safe while limiting the loss of trees and hedgerow.
- Using existing farm access for operation and maintenance access points to provide flexibility in access and to provide quick ingress/egress to all parts of the Site south of Rosliston Road. In the event of an emergency a new gated emergency access point will be available throughout operations on the south side of Rosliston Road to respond quickly to safety incidents in the Oaklands Farm area.

3.4 This iterative design process has continued throughout the EIA process, with the design also responding to consultee comments received during statutory consultation, and a summary has been included in the ES in **Chapter 3: Site Selection and Design**.

Image 4: Photomontage of the Proposed Development from Viewpoint 1 – Coton Road

Landscape and Visual Amenity

Introduction

4.1 The Landscape and Visual Impact Assessment (LVIA) assesses the effects on landscape character and people (visual receptors), as well as the cumulative effect of the Proposed Development in conjunction with other proposed and approved developments within the area. The visual effects upon individual residential properties are also considered.

4.2 The assessment has involved a desk study, field survey and computer modelling to analyse the landscape of the area and to understand where the Proposed Development will be visible from. More details are provided in **Chapter 5: Landscape and Visual** of the ES.

Baseline Conditions

4.3 The Site is located within four different landholdings and displays many of the key characteristics of the Village Estate Farmlands Landscape Character Type it is located within. This is a lowland landscape of gently rolling topography comprising medium to large fields of arable crops and pasture bound by hedgerows. There are no landscape designations covering the Site or within the study area extending up to 5km from the Site boundary.

4.4 The pattern of settlement within the wider study area is typically defined by compact villages together with larger towns in the north. There are numerous individual farmsteads and some isolated residential properties that are connected by a network of minor roads and rural lanes. The Cross Britain Way / National Forest Way long distance footpath crosses the study area and runs partly through the Site. Other local Public Rights of Way are located throughout the study area, often providing links between settlements and farmsteads.

Effects

4.5 The assessment concludes there will be unavoidable **major** (**significant**) effects on the landscape character of the Site and its immediate surroundings (up to approximately 0.5km from the Proposed Development) within the Village Estate Farmlands Landscape Character Type, during both the construction and operational stages. Proposed planting set out within the Landscape and Ecological Management Plan (LEMP) will result in some positive effects on the landscape character of the Site in terms of landcover and as a result effects would reduce to **moderate** (**significant**) once that planting has matured.

4.6 Locally there would be some **major (significant)** visual effects during both the construction and operational stages for road users travelling along a stretch of Coton Road/ Church Street (between Walton-on-Trent and Coton in the Elms) and for users of the Cross Britain Way / National Forest Way long distance footpath, that crosses through the Site. The proposed planting set out within the LEMP will assist in filtering views of the Proposed Development and as a result effects would reduce to **moderate** (**significant**) once that planting has matured.

4.7 There will be **moderate** (**significant**) visual effects during both the construction and operational stages for residents / visitors at the most elevated north western edge of Rosliston (at Coppice View and The Chase), for other road users travelling along parts of the local road network surrounding the Site (namely along Rosliston Road, Catton Lane, and an unnamed road between Walton-on-Trent and Church Street), as well as on users of the Public Rights of Ways located close to the southern part of the study area. Again, the proposed planting set out within the LEMP will assist in screening the Proposed Development and as a result effects on users of the unnamed road (between Walton-on-Trent and Church Street) and the Public Rights of Ways within the southern half of the study area, would reduce to **minor** (not **significant**) once that planting has matured.

4.8 The Residential Visual Amenity Assessment (RVAA) (**Appendix 5.5**) describes the change in view likely to be experienced by residents at the properties closest to the Site and assesses the potential for these residents' 'living conditions' to be affected. It does not consider other components of residential amenity (such as noise), which are dealt with in the appropriate chapters of the ES. The assessment looks at whether the Residential Visual Amenity

Threshold[4] will be breached by considering whether the Proposed Development is overwhelming in the property's views in all available directions (e.g. it blocks the only available view from a property), is unpleasantly encroaching or is inescapably dominant from the property. The RVAA concludes that none of the assessed residential properties will experience a breach of the Residential Visual Amenity Threshold.

Mitigation Measures and Enhancement

4.9 Landscape and visual issues were factored into the design of the Proposed Development and where necessary infrastructure was sited away from residential properties and high points on the Site to reduce visual effects. Additional mitigation and landscape enhancement measures have been designed to improve integration of the Proposed Development into the landscape and to minimise visual effects on residents and visitors. They include new hedgerow, scrub, tree and woodland planting, strengthening / reinforcement of existing hedgerows and reseeding of areas with species rich grassland. These are presented in the LEMP.

Cumulative Effects

4.10 Although the development of all the cumulative projects would inevitably increase the amount of development in the landscape around the Site, the detailed cumulative assessments presented in the ES indicate that the other projects would not interact with the Proposed Development to the extent that there would be any additional cumulative effects on landscape character and on visual amenity.

[4] "the threshold at which the visual amenity of a residential property is changed and adversely affected to the extent that it may become a matter of Residential Amenity and which, if such is the case, competent, appropriately experienced planners will weigh this effect in their planning balance" (LI Technical Guidance Note 2/19 Residential Visual Amenity Assessment).

Image 5: Avenue of trees leading to Park Farm

Ecology

Introduction

5.1 The Ecology assessment considers the potential effects of the Proposed Development on the following ecological features:

- Statutory designated sites for nature conservation (including European designated sites).
- Non-statutory designated sites for nature conservation.
- Habitats.
- Invasive Non-Native Species.
- Protected species (Bats, Reptiles (Drakelow Power Station only), Badger, Otter and Breeding Birds).

5.2 The assessment has been supported by data received from the Derbyshire Biological Records Centre, the Muti-Agency Geographical Information for the Countryside website alongside aerial photography and Ordnance Survey mapping. This data was supplemented by ecological surveys undertaken by Arcus in 2020 and LUC between 2021-2023. More details are provided in **Chapter 6: Ecology** of the ES.

Baseline Conditions

5.3 The River Mease Special Area of Conservation (SCA) and Site of Special Scientific Interest (SSSI) is 4.4km to the south of the Site. No further statutory designated sites are within a 5km buffer of the study area. There are 14 Local Wildlife Sites (LWS), four potential Local Wildlife Sites and one nature reserve within 2km of the Site. One of these, Grove Wood LWS is present within the north of the Site and Coppershill Spinney potential LWS is adjacent to the west of the Site.

5.4 The baseline recorded during the field survey comprised the following main habitat types: arable fields and improved grasslands with smaller areas of semi-improved neutral grasslands; ponds; standing water; running water; species-rich and species-poor hedgerows; scrub; woodland; tall ruderal vegetation; and bare ground.

5.5 There are also a number of ancient and veteran trees within the Site. Invasive species, including Himalayan balsam, rhododendron, cherry laurel and buddleia were recorded at Drakelow Power station and cherry laurel was recorded adjacent to the Site at Park Farm. Japanese knotweed was recorded 400m to the east of the Site.

5.6 Surveys were undertaken to assess the likelihood of trees on the Site to support roosting bats. A single confirmed bat roost was recorded at Drakelow Power Station, other trees with the potential to support roosting bats were identified and taken into account during the design process. Surveys recorded the presence of badger and their setts within, and close to, the Site.

5.7 Reptile habitat surveys confirmed that Drakelow Power Station was the only part of the Site which supported optimal habitat for reptiles to forage, shelter, bask and disperse.

5.8 Breeding bird surveys recorded a relatively low diversity of bird species across the Site, comprising mainly common species of low conservation value. The Site has some potential to support bird species of greater conservation concern, including ground nesting species, such as skylark, though conditions are not considered to be optimal for successful fledgling of nests.

Effects

5.9 During construction there could be **significant** adverse effects to habitats from direct habitat loss, including temporary loss of grassland and localised sections of the unnamed watercourse, and the permanent loss of arable field habitats, small, localised sections of hedgerow and scrub. Effects on species that use those habitats such as bats, badger, and breeding birds could also be of minor significance in the context of the EIA Regulations.

5.10 All adverse effects in relation to predicted operational effects have been scoped out of this assessment on the basis that there is no potential for significant effects to occur during operation for all ecological receptors.

Mitigation Measures and Enhancement

5.11 In addition to the Best Practice Measures embedded in the CEMP, additional mitigation and enhancement measures will be delivered through the LEMP. The Outline LEMP (**Appendix 5.6**) includes habitat creation and the provision of bat boxes which supports the delivery of Biodiversity Net Gain. The LEMP is expected to provide continued benefit through the operational phase. This mitigation and enhancement reduces the **significant** effects outlined above to **not significant**.

5.12 Adverse effects on skylark cannot be fully mitigated given this species' reliance on open habitats. Although it is not feasible to fully mitigate for loss of potential nesting habitat within the Proposed Development, skylark nesting within the Site boundary is expected to be focused within larger expanses of species-rich grassland located in field corners at the edges of the solar arrays, and the wider landscape supports a mosaic of agricultural and pastoral land which provide suitable habitat for this species. Through the provision of Biodiversity Net Gain and management through the LEMP, better quality foraging and sheltering resources will be provided on site for those skylark nesting in the fields surrounding the Site (offsite). Residual effects on skylark are predicted to be **not significant** in the context of the EIA Regulations.

5.13 It is expected that during construction the proposed scheme will have **significant beneficial** effects at the Site level in relation to invasive species through treatment and control as part of the CEMP.

5.14 During operation, the Proposed Development will have **significant beneficial** effects on ecological features such as non-statutory designated sites, habitats, bats, badger, reptiles, breeding birds and invertebrates, due to the delivery of Biodiversity Net Gain through the creation and management of habitat set out in the LEMP.

Cumulative Effects

5.15 Significant cumulative ecological effects are highly unlikely because the efficacy of the avoidance and mitigation measures detailed in the ecology assessment will ensure that all ecological receptors are not significant in the context of the EIA Regulations, and therefore, there is no mechanism for cumulative impacts to occur. Further to this, the Proposed Development will deliver Biodiversity Net Gain, which will provide significant beneficial impacts for a range of ecological receptors. Each of the cumulative schemes will in turn be required to

deliver appropriate avoidance and mitigation measures and to achieve Biodiversity Net Gain. Therefore, it has been concluded that no cumulative effects will occur as a result of the Proposed Development in combination with other developments in the wider area.

Habitats Regulations Assessment (HRA)

5.16 It is necessary[5] to consider whether the Proposed Development may affect the integrity of the River Mease Special Area of Conservation (SAC) (located c.4km to the south of the Site), either alone or in combination with other plans and projects. As such a Report to Inform HRA has been submitted at **Appendix 6.2** of the ES.

5.17 The assessment concluded that the mitigation measures which will be secured in relation to the construction of the Proposed Development will eliminate any potential for adverse effects on the integrity of the River Mease SAC.

[5] Under The Conservation of Habitats and Species Regulations 2017

Image 6: Church of St Mary, Rosliston

Historic Environment

Introduction

6.1 The Historic Environment assessment considers the potential effects of the Proposed Development on heritage assets and their significance and is in line with the approach promoted by Historic England. It assesses direct physical effects on heritage assets from groundworks during construction, and indirect effects relating to change in the setting of an asset during the operational phase. The assessment has been informed by site visits and walkover surveys, including geophysical surveys. More details are provided in **Chapter 7: Historic Environment** of the ES.

Baseline Conditions

6.2 There are no designated heritage assets within the Site[6]. Evidence of non-designated assets on Site can be seen in cropmarks, a projected course of a Roman road that crosses the northern tip of the Site, medieval ridge and furrow, a possible park pale and post-medieval field boundaries, and extraction/quarrying pits.

6.3 There is the potential for currently unknown assets to be present beneath the Site.

6.4 Heritage assets beyond the Site were considered in the assessment, and included the Conservation Area at Walton-on-Trent and listed churches at Rosliston and Coton in the Elms.

[6] Defined as "a World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation" within the National Planning Policy Framework (NPPF) Annex 2: Glossary [online] Available at: National Planning Policy Framework - Annex 2: Glossary - Guidance - GOV.UK (www.gov.uk)

Effects

6.5 Effects during construction are assessed as **not significant** in the context of the EIA Regulations for the majority of heritage receptors. Potential direct physical effects to unknown heritage assets could be **significant** for any (currently unknown) assets identified to be of high value, depending on the scale of the impact. However, the risk of there being high value assets on the Site is considered to be very low, following analysis of geophysical survey results.

6.6 The following buildings could experience a change in their setting during the operational phase, but effects would **not be significan**t:

- Oaklands Farm – non-designated farmhouse and cottages.
- Church of St Mary, Rosliston – Grade II* listed building.
- Church of St Mary, Coton in the Elms – Grade II listed building.

6.7 Setting change is based upon the level of visibility of the Proposed Development and review of other effects which could change how assets are experienced (e.g. changes to the traffic and/or noise baseline). All effects would be reversible with the removal of the panel array and other above-ground infrastructure associated with the Proposed Development

Mitigation Measures

6.8 A suitable programme of mitigation will be drawn up in consultation with the Derbyshire County Council Archaeologist who is archaeological advisor to South Derbyshire District Council. This is likely to comprise a staged programme of archaeological works spanning advanced works and construction period monitoring. This mitigation will not reduce the level of effects to the heritage assets but will provide a record of the features that may be lost preserving them by record. This approach follows industry best-practice to address effects to heritage assets.

Cumulative Effects

6.9 The effects predicted during the construction period are confined to direct physical effects to heritage assets, and no cumulative effects are predicted.

6.10 As no construction-period effects are predicted in relation to setting change there is no potential for this type of cumulative effects.

6.11 Operational period effects relate to change in the setting of assets. The cumulative schemes were reviewed and none was identified which caused an effect to the assets which would experience effects due to the Proposed Development.

Image 7: Sheep grazing on the Site

Water Resources and Flood Risk

Introduction

7.1 The Water Resources and Flood Risk chapter assesses the potential effects of the Proposed Development on the local water environment, including surface water, groundwater, flood risk and drainage. More details are provided in **Chapter 8: Water Resources and Flood Risk** of the ES.

Baseline Conditions

7.2 The Site comprises a series of agricultural fields from three different farms: Park Farm, Fairfield Farm and Oaklands Farm. It includes several historic gravel and marl pits. Most of the Site lies within the catchment of the River Trent with a small unnamed tributary of the River Trent running along the eastern border of the Site (see **Figure 1**). The extreme southern portion of the Site lies within the catchment of the River Mease which is a Special Area of Conservation, however there is no watercourse or direct pathway linking the Site to the river (as also reported in the Report to Inform HRA at **Appendix 6.2** of the ES).

7.3 The majority of the Site lies within the Flood Zone 1 (low risk) however, along the unnamed tributary, parts of the Site lie within Flood Zones 2 and 3 and the Proposed Development has been designed to avoid these areas of higher flood risk.

Effects

7.4 Construction effects could be caused by fuels, oils and other chemicals that are being used and/ or stored on Site. If these enter the soils and groundwater following spills, leaks or accidental releases they can result in pollution of ground and surface water. The erosion of sediment or silt due to exposed soils being eroded by rainfall could also lead to pollution events.

7.5 Soil could become compacted due to the use of heavy machinery on Site and existing land drains could be affected by the piling of solar panel supports. This could change the current surface water run off patterns. The potential disturbance of existing contaminated land could also lead to pollution on Site.

7.6 Best practice measures set out in the CEMP includes controls on the storage of equipment and material to prevent contamination and suitable control of surface water though a drainage strategy. This would ensure that effects are **negligible** and **not significant**. Mitigation to identify contaminated land prior to construction will ensure remediation or risk mitigation can be implemented which could lead to a **minor beneficial** (**not significant**) effect.

7.7 The risk of pollution events remains during the operational phase. However, with suitable pollution prevention measures effects would be **negligible** and **not significant**. This would include the use of storage tanks beneath the BESS and substation to isolate firefighting water in the event of a fire and prevent it entering the environment.

Mitigation Measures

7.8 The Proposed Development has been designed, as far as possible, to avoid areas of flood risk. Best practice measures to manage and reduce impacts on the water environment are set out in the CEMP. A flood risk assessment and outline drainage strategy have been prepared to ensure that there is no increased rate of run-off; that critical infrastructure is positioned outside of fluvial and surface water flood risk areas; and that any minor alterations of surface water flow paths can be accommodated by alternate flow paths.

7.9 Additional mitigation includes the completion of a suitable site investigation to identify potential contamination on Site, together with the implementation of identified remediation and/ or risk management, where required. In relation to land drains, if required, the Applicant will replace or repair any land drains found to be damaged during construction.

Cumulative Effects

7.10 The assessment of cumulative effects on water resources and flood risk assumes that other schemes will be subject to the same good practice and mitigation through design and through management plans such as the CEMP as is being employed for the Proposed Development. As such, cumulative effects are not considered to be significant.

Image 8: View looking South West across Oaklands Farm

Ground Conditions

Introduction

8.1 The ground conditions chapter assesses the potential effects of the Proposed Development on ground conditions beneath the Site including potential for contamination; disturbance and erosion of the ground; and consideration of groundwater quality. More details are provided in **Chapter 9: Ground Conditions** of the ES.

Baseline Conditions

8.2 The baseline Site conditions are as presented within the Water Resources and Flood Risk section above.

8.3 In addition, a desk based Coal Mining Risk Assessment has been undertaken which concluded that there is a very low risk of surface instability in relation to historic coal mining.

Effects

8.4 As for the water resources assessment, construction effects could be caused by fuels, oils and other chemicals that are being used and/ or stored on Site. If these enter the soils following spills, leaks or accidental releases they can result in pollution of ground and surface water. Disturbance of potentially contaminated land could lead to migration of gas, leachate and direct effects on site users. Other potential effects include soil compaction from heavy machinery, alteration to soil structure, mineral sterilisation and the effects of stripping top soil to facilitate the Proposed Development. Best practice measures set out in the CEMP, including controls on the storage of equipment and material to prevent contamination, will ensure that construction effects are **not significant**.

8.5 Potential operational phase effects comprise a minor beneficial (**not significant**) effect as the change from intensive agriculture to low-intensity grazing will result in a reduction in potential contaminants entering the aquifer.

Mitigation Measures

8.6 Best practice measures set out in the CEMP includes controls on the storage of equipment and material to prevent contamination. Additional mitigation includes the completion of a suitable site investigation to identify potential contamination on Site, together with the implementation of identified remediation and/ or risk management, where required.

Cumulative Effects

8.7 The assessment of cumulative effects on ground conditions assumes that other schemes will be subject to the same good practice and mitigation through design and through management plans such as the CEMP as is being employed for the Proposed Development. As such, cumulative effects are not considered to be significant.

Image 9: Photomontage of the Proposed Development from Viewpoint 1: Coton Road showing mature hedgerow screening and visibility from junction

Transport and Access

Introduction

9.1 The Transport and Access chapter assesses the environmental impact of transport to and from the Proposed Development. It considers the construction phase when materials and equipment will have to be brought to the Site. During the operational phase there will only be a small number of trips each month as part of routine maintenance and so further operational assessment is not necessary.

9.2 As well as the temporary impact on other road users, the assessment considers the effect of construction traffic on people who may live or work adjacent to the routes that construction vehicles will use. More details are provided in **Chapter 10: Transport and Access** of the ES.

Baseline Conditions

9.3 Baseline conditions show that the local highway network surrounding the Site has a low level of average daily and weekly traffic, typical for the rural location and unclassified nature of the roads. Additionally, the number of recorded serious and fatal accidents on the local network was minimal on roads where the construction and maintenance vehicles would travel to the Site. This shows that there are no highway safety issues that could be exacerbated by the construction traffic. There are several villages and country lanes with narrow widths, which has been considered when developing the construction vehicle routing strategy.

Effects

9.4 The assessment considers the following 3 construction vehicle routing scenarios shown in **Figures 4 to 6**:

- Scenario1 (preferred construction vehicle routing) (see **Figure 4**) – assumes all construction vehicles will use the proposed Walton-on-Trent bypass which provides the shortest route from the strategic road network to the Site.
- Scenario 2a (likely construction vehicle route) (see **Figure 5**) - Given the uncertainty surrounding the delivery of the Walton-on-Trent bypass prior to the construction phase commencing, the likely routing strategy to the Site will be for heavy goods vehicles to leave the A38 at Burton upon Trent and travel via Stapenhill to arrive at the Site from the north. Smaller vehicles will either take this route or could access the Site from the southwest via Catton or the southeast via Coton in the Elms.
- Scenario 2b (back up construction vehicle route) (see **Figure 6**) – this scenario is provided in the event of major disruptions or blockages to the route to Site via Stapenhill. In this scenario, heavy good vehicles and light vehicles, would need to access the site from the southeast via Coton in the Elms. Smaller vehicles could also access the Site from the southwest via Catton. It is expected that the use of Scenario 2b would only last so long as Scenario 2a is unavailable for use, with construction vehicle routing reverting at the earliest opportunity.

9.5 Up to two abnormal load movements are expected to deliver large items of equipment (prefabricated transformers) to Site. Each movement consists of two trips: the first being laden with the transformer on the way to the site and the second unladen as the vehicle returns. These vehicles would need a police escort and would arrive via Coton in the Elms.

9.6 The construction phase will result in a temporary rise in the amount of traffic travelling to and from the Site on the local road network. This could have an effect on local communities and road users through severance, delay to journeys, impacts on amenity, safety and fear and intimidation. Across the 3 scenarios, effects are considered to be **negligible** (**not significant**) to **moderate adverse** (**significant**) depending on the location of the receptor in relation to the scenario being assessed. The following potential temporary significant effects prior to mitigation were identified:

- Amenity of users of the PRoW Footpath 9/Cross Britain Way due to construction traffic on Walton Road and Rosliston Road under Scenario 1 and on Walton Road under Scenario 2A.

- Delays in moving around residential areas (severance) under Scenario 2A – residents of Croft Residential Home and Riverside Residential Home due to construction traffic on Main Street (Stapenhill); users of the First Day Nursery on Rosliston Road.
- Delay for road users under Scenario 2A - due to construction traffic on Main Street (Stapenhill), Rosliston Road, at the National Memorial Arboretum and Catton Hall on event days due to construction vehicles on the A513 and the Unnamed Road (Between A513 and Church Street).
- Road user and pedestrian safety under Scenario 2A - due to construction traffic on Main Street (Stapenhill) and Rosliston Road, the A5121, and the A513.
- Road user delay under Scenario 2B - at the National Memorial Arboretum and Catton Hall on event days due to construction vehicles on the A513 and the Unnamed Road (Between A513 and Church Street).
- Road user and pedestrian safety under Scenario 2B - due to construction traffic on the A513.
- Delays in moving around the village (severance) under Scenario 2B –for residents along Mill Street and Church Street in Coton in the Elms due to construction traffic.

9.7 The implementation of a Construction Traffic Management Plan (described below) would reduce effects to **negligible-slight (not significant)**.

Mitigation Measures

9.8 An Outline Construction Traffic Management Plan (CTMP) has been prepared which sets out measures to manage construction traffic on the local road network. It restricts construction vehicles to defined routes, limiting the impact on villages, urban areas and tourist attractions. It includes measures such as restricting deliveries during peak periods, staggered timing of inbound and outbound construction traffic movements and appropriate signage and traffic control.

9.9 The Outline CTMP will be updated in consultation with the relevant authorities like Derbyshire County Council and National Highways to ensure that it can respond to changes to the road network that may take place before the start of construction (planned for 2026). It will also be updated to account for traffic associated with nearby developments or event traffic at Catton Hall and the National Memorial Arboretum. Consultation will be undertaken with the

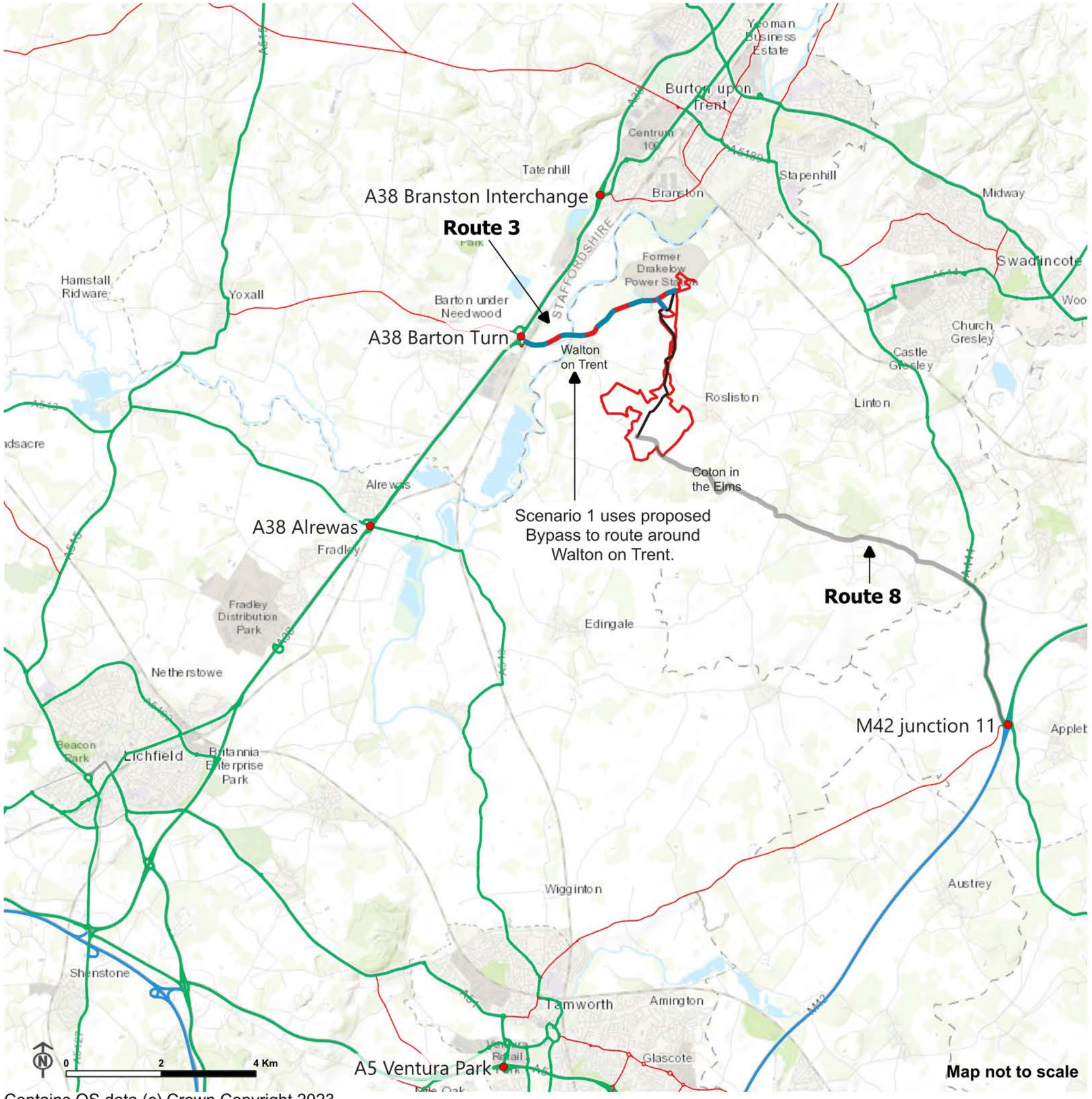
National Arboretum and Catton Hall to ensure traffic is appropriately managed on days when events are planned. Construction vehicle access can be limited on these days and/or blackout days introduced.

Cumulative Effects

9.10 The cumulative transport assessment has looked at the proposed construction vehicle routes and trip assignment/ distribution of different developments. The assessment identifies that a number of highway links used by the Proposed Development could also be used by some of the other developments (particularly the energy from waste facility under construction on the former Drakelow Power Station site) either in their construction or operational phases. The implementation of the Construction Traffic Management Plan for the Proposed Development, which requires coordination with the relevant Highway Authorities, will include a mechanism to avoid clashes of network availability and ensure alignment of CTMP measures, which will ensure cumulative effects are negligible.

Oaklands Farm Solar Park
for Oaklands Farm Solar Park Ltd

Figure 4: SCENARIO 1 PREFERRED CONSTRUCTION VEHICLE ROUTING



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Site boundary

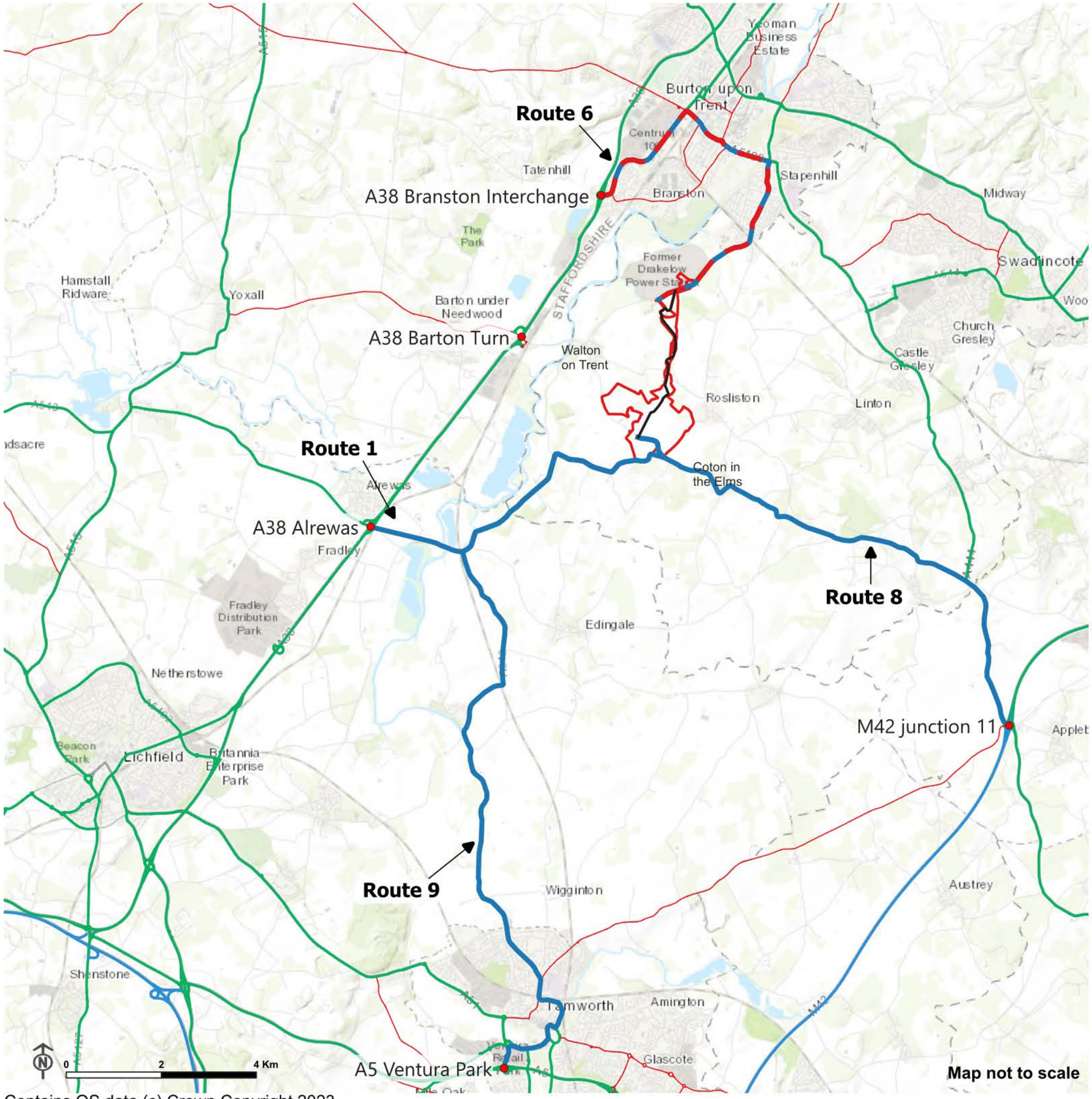
Scenario 1 Construction Routes
- Light Vehicle Route
- Heavy Vehicle Route
- Temporary Construction Haul Road
- Abnormal Indivisible Load

Road Network
- A Road
- B Road
- Motorway

PINS reference: EN010122

Oaklands Farm Solar Park
for Oaklands Farm Solar Park Ltd

Figure 5: SCENARIO 2A LIKELY CONSTRUCTION VEHICLE ROUTING



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Site boundary

Scenario 2a Construction Routes
- Light Vehicle Route
- Heavy Vehicle Route
- Temporary Construction Haul Road

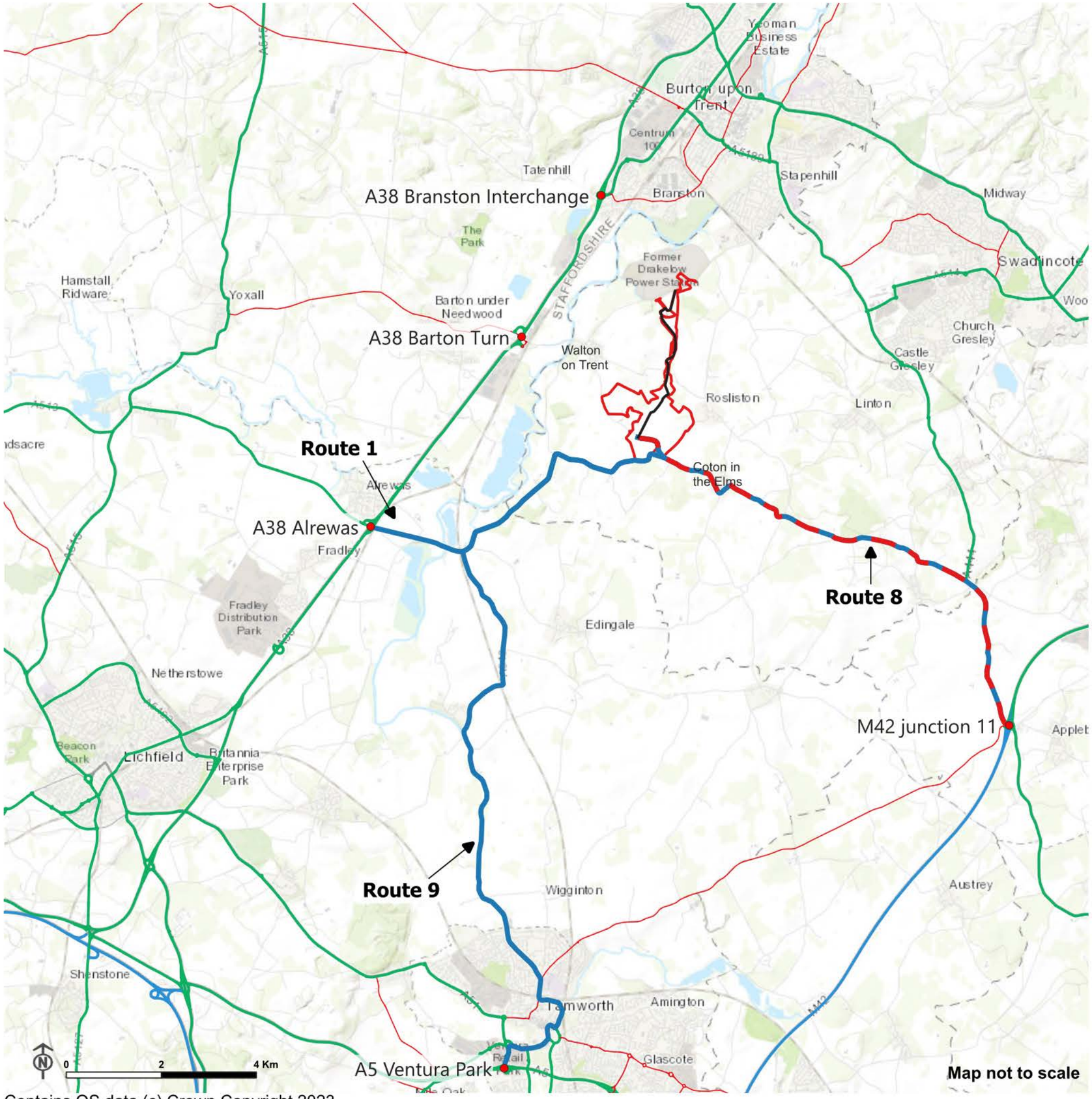
Road Network
- A Road
- B Road
- Motorway

Note: Abnormal Indivisible Load to use Route 8

PINS reference: EN010122

Oaklands Farm Solar Park
for Oaklands Farm Solar Park Ltd

Figure 6: SCENARIO 2B BACK-UP CONSTRUCTION VEHICLE ROUTING



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Site boundary

Scenario 2b Construction Routes
- Light Vehicle Route
- Heavy Vehicle Route
- Temporary Construction Haul Road

Road Network
- A Road
- B Road
- Motorway

Note: Abnormal Indivisible Load to use Route 8

PINS reference: EN010122

Image 10: View from noise monitoring location looking North across Park Farm

Noise

Introduction

10.1 The noise assessment considers the effects of the Proposed Development on sensitive residential properties near to the Site. An assessment of the potential increase in road traffic noise levels due to construction traffic, has also been undertaken for the minor roads connecting the Site to main roads. The assessment of operational noise considers the predicted sound levels at surrounding residential properties from sources on the Site.

10.2 More details are provided in **Chapter 11: Noise** of the ES.

Baseline Conditions

10.3 A survey of existing sound levels has been undertaken at positions representative of the nearest residential properties to the Site, and included noise from road traffic and agricultural activity. There is a large variation in existing background sound levels and sometimes they are very low.

Effects

10.4 **No significant effects** are predicted in relation to construction noise with the exception of a **moderate adverse** (**significant**) effect at Corner Farm in the event that night time working is required to directionally drill the cable route under Rosliston Road. If required, this would be for a very short time and would be avoided where possible. The contractor would be required to liaise with the Local Authority and nearby affected residents where planned works outside of the standard working hours are considered necessary. No significant sources of vibration are expected.

10.5 Increases in road traffic noise levels due to construction traffic are predicted to be **negligible** to **minor** (**not significant**).

10.6 Worst-case operational plant noise may be audible at the nearest receptors, but effects are predicted to be **negligible** (**not significant**).

Mitigation Measures

10.7 Noise has been taken into account in the design of the Proposed Development, with equipment identified as potentially significant noise sources, such as the Battery Energy Storage System, moved away from the closest residential receptors.

10.8 The assessment has also factored in Best Practice Measures embedded into the CEMP which will ensure the Site and construction practices are managed to minimise noise and vibration. This includes restrictions to working hours, selection of low noise plant and construction techniques, and regular maintenance of plant.

10.9 The management of construction vehicles set out in the Traffic Management Plan will also help to manage noise on and off site.

Cumulative Effects

10.10 The noise assessments prepared for the most relevant cumulative schemes have been reviewed. The predicted operational noise levels for these schemes are low enough or far enough away from residential dwellings to only have a cumulative effect of **negligible** significance.

Image 11: View of the Cross Britain Way running through the Site

Socio-Economics, Tourism and Recreation

Introduction

11.1 The Socio-Economic, Tourism and Recreation chapter assesses the potential effects of the Proposed Development on baseline socio-economic, public access, recreation and tourism interests within the local and wider areas.

11.2 As there is no topic-specific legislation relevant to the assessment of socio-economic effects, the methodology for the assessment has been developed using good practice and professional judgement. More details are provided in **Chapter 12: Socio-Economics, Tourism and Recreation** of the ES.

Baseline Conditions

11.3 The South Derbyshire local authority area has a population of approximately 107,200 residents, living in rural areas and the main settlements of Swadlincote, Melbourne and Hilton.

11.4 Tourist attractions identified close to the Site comprise the Rosliston Forestry Centre, the National Forest, Catton Hall, and the National Memorial Arboretum. There is a network of Public Rights of Ways within close proximity to the Site, with one crossing the Site (the Cross Britain Way/National Forest Way).

11.5 The current land use of the Site is agriculture, with arable crops such as wheat, barley and maize being produced, and grazing for dairy cattle.

Effects

11.6 It is anticipated that there will be an average of 114 full-time equivalent jobs during the 16 month construction period (this will vary depending on the actual length of construction, month of construction and the activities being undertaken at various stages). Construction employment

and local economic effects are considered to be **minor beneficial** (**not significant**) as not all of the construction workforce will be able to be secured locally.

11.7 Users of the Cross Britain Way may experience short temporary delays when crossing the Site when access tracks are being constructed and when construction vehicles need to cross the Right of Way. This is considered to be a **minor adverse** (**not significant**) effect during the construction phase. The CEMP will include measures to manage the interaction between the Site and the Right of Way to ensure the safety of path users.

11.8 There will be **negligible** effects (**not significant**) on the tourism industry of the local area, with the Traffic Management Plan identifying the need to consult with the National Arboretum and Catton Hall to ensure traffic is appropriately managed on days when events are planned (e.g. to limit construction vehicle access).

11.9 During the operational phase, effects on users of the Public Rights of Way will be **negligible** (**not significant**) due to the very low number of vehicles which might need to cross the Cross Britain Way.

11.10 The Proposed Development will provide enough clean renewable electricity to power in the region of 35,000 homes, making a **moderate to major significant** contribution to the provision of clean, secure energy (as reported in ES **Chapter 13: Climate Change**).

Mitigation Measures

11.11 The CEMP will include measures to manage site vehicles crossing the Right of Way. Site access tracks will cross the Cross Britain Way and these crossing points will be manned by a site operative to ensure site vehicles are kept separate from walkers. Gates will be erected to prevent members of the public accessing the construction site. These gates would be used by the operatives to allow site vehicles to cross the Cross Britain Way when it is safe to do so. Out of working hours, the PRoW would remain open and accessible. A strict speed limit will be imposed onsite during construction.

11.12 Local sourcing of equipment and contractors will be pursued where possible, however it is noted that this procurement is subject to tendering and may be constrained by the specialist nature of some of the equipment. Local contractors will be encouraged to tender for construction, operation and maintenance work, to ensure maximum benefit to local communities.

Enhancement

11.13 To enhance the recreational experience in the area, a new permissive path (footpath) is proposed to connect the Cross Britain Way with existing Public Rights of Way off Catton Lane to the south-east of Oaklands Farm. An interpretation board on solar energy will be installed to provide more information on the solar farm.

11.14 The Applicant is committed to providing an annual community benefit fund of £55,000 per year for the 40 year life of the project for use by the local community to secure long-term economic benefits. This fund will be managed and administered by a local organisation, with applicants applying for grants.

Cumulative Effects

11.15 There could be cumulative beneficial effects on local employment and direct and indirect spend in the local economy, with the creation of construction jobs, along with parts and materials which could be sourced locally. For example, many similar services and skills could be employed across the various projects enabling local contractors to either expand existing services or diversify into new areas. It is not possible to quantify the effect at this stage as there is not enough information available on the other schemes, and the proportion of jobs or spend that would be directed at the local economy. However, a conservative assumption is that this could result in a **minor beneficial** (**not significant**) effect on the local economy.

11.16 For tourism receptors, a cumulative effect could arise if, for example, the construction phases of the cumulative schemes coincided, and their construction access routes overlapped. However, the Construction Traffic Management Plan will require coordination with the relevant Highway Authorities to ensure traffic movements associated with the Proposed Development do not clash with major events in the area. This will ensure cumulative effects are **negligible** (**not significant**).

11.17 Operational effects on employment and associated spending have been scoped out and from a cumulative point of view, none of the proposed developments (of a commercial nature) are likely to have high numbers of operational staff to significantly affect employment and associated spending in the area. As such operational cumulative socio-economic effects are considered to be **negligible** (**not significant**).

Image 12: Photomontage of the Proposed Development from Viewpoint 2: Cross Britain Way

Climate Change

Introduction

12.1 The Climate Change chapter assesses the potential effects of the Proposed Development on the climate, in particular the effect on greenhouse gas (GHG) emissions, and the vulnerability of the Proposed Development itself to climate change, known as climate change adaptation.

12.2 The GHG emission assessment considers the transportation of materials and waste and workers to the Site, as well as the embodied emissions associated with the production of the equipment. During the operational phase of the Proposed Development, effects were assessed on the energy consumption of the equipment, in addition to the worker transport and maintenance requirements associated with the repair and replacement of equipment parts.

12.3 The climate change adaptation assessment considered the vulnerability of the Proposed Development in response to future climate projections as well as the extent to which the climate worsens or improves the effects of the Proposed Development on the environment.

12.4 More details are provided in **Chapter 13: Climate Change** of the ES.

Baseline Conditions

12.5 The Site consists mainly of arable land and trees, woodlands and hedgerows. The abundance of vegetation suggests a relatively high carbon sink potential. Whilst growing crops will sequester carbon in the short term for the duration of a growing cycle, this carbon would be subsequently released in a relatively short cycle during the agricultural practices of management, harvesting and consumption.

12.6 In terms of the future climate baseline, the UK Climate Projections 2018 show a general trend towards warmer, wetter winters and drier hotter summers. The projections show that

temperatures within the East Midlands are projected to increase, with projected increases in summer temperatures the greatest. Winter rainfall is also projected to increase, whilst summer rainfall with most likely decrease.

Effects

12.7 The greatest GHG impact during the construction phase is from embodied carbon in construction materials, with total GHG emissions from the construction phase estimated to be 104,218 units of tonnes of carbon dioxide equivalent (tCO2e). This is less than 1% of the relevant UK national carbon budgets, and therefore the effect on the climate is negligible to **minor adverse** (**not significant**).

12.8 Over the 40 year operational lifetime, the Proposed Development is estimated to produce a cumulative energy generation of 5,653,501 megawatt hours (MWh) and generate GHG emissions of 91,610 tCO2e. To generate the equivalent energy supply from the grid, 859,332 tCO2e would be emitted. The Proposed Development would avoid 767,723 tCO2e of GHG emissions over the operational period (simply the difference between the operational GHG emissions of the Proposed Development (91,610 tCO2e) and the estimated emissions from the equivalent energy supply from the grid (859,332 tCO2e)).

12.9 In relation to the decommissioning phase, a negligible to **minor adverse** (**not significant**) effect is predicted as the Proposed Development is anticipated to emit 382 tCO2e.

12.10 Overall, the Proposed Development will make a **significant** (**moderate to major beneficial**) contribution towards the increase of new renewable capacity required in the UK and achieving the forecasted decarbonised grid mix. The Proposed Development could produce enough electricity to power around 35,000 homes.

12.11 In terms of climate change adaptation, proposed landscape mitigation and enhancement measures set out in the LEMP for the Site (in ES **Appendix 5.6**) will include planting of new hedgerows, woodland understory belts with trees and species rich meadow grassland. Measures to cope with climate change have been considered through selecting resilient plant species, to create 'valuable new landscapes', in line with Natural England guidance[7]. Planting will help ensure that the Proposed Development is resilient to projected climate change with respect to storms and high winds as well as to wild fires and the risk of overheating. Therefore,

[7] Natural England (2021) Climate Change Risk Assessment and Adaptation Plan

the consequence of a climate effect is considered to be low and effects would be **minor adverse** (**not significant**).

12.12 Increased rainfall and flooding events, coupled with rising temperatures, may cause species to shift their ranges in the UK. As construction of the Proposed Development is due to commence in 2026 for up to 2 years it is considered unlikely that there will be an increase in the species ranges occupied by flora and fauna and invasive species during this period. Therefore, a **negligible** (**not significant**) in-combination climate effect is predicted during the construction phase.

12.13 The LEMP will help to increase resilience to the ecological effects of climate change, through the creation and enhancements of habitats. This will improve ecological connectivity within the Site therefore increasing the ability of species to move and adapt; will provide carbon storage through tree planting; and improvements in relation to water and soil erosion through the provision of attenuation measures.

12.14 A **minor** (**not significant**) in-combination climate effect is predicted for ecology.

Mitigation Measures and Enhancement

12.15 Mitigation to reduce the GHG impact of the Proposed Development are embedded in the CEMP and the Construction Traffic Management Plan. This includes:

- Segregating construction waste to be re-used and recycled where reasonably practicable.
- Minimising the creation of waste through design, construction and operation and maximise the use of alternative materials with lower embodied carbon, such as locally sourced products and materials with a higher recycled content where feasible.
- Reusing suitable infrastructure and resources already available in the Site where possible (e.g. reusing excavated soil for fill requirements).
- Implementing a Travel Plan to reduce the volume of construction staff and employee trips to the Proposed Development (e.g. using minibuses / car sharing where possible).
- Switching vehicles and plant off when not in use and ensuring construction vehicles conform to current UK emissions standards.
- Conducting regular planned maintenance of the construction plant and machinery to optimise efficiency.

12.16 Mitigation and enhancement measures identified in the LEMP contribute to the resilience of the Proposed Development and sensitive receptors around the Site to the effects of climate change.

Cumulative Effects

12.17 In terms of emissions reduction, the assessment methodology presented in **Chapter 13: Climate Change** uses relevant UK National Carbon Budgets as a proxy for the identified receptor of the global climate. Any cumulative GHG emissions from other schemes would also be considered by the UK carbon budgets. This approach is inherently cumulative, since it accounts national budgets that are managed centrally by the Government.

12.18 With respect to climate change adaptation, this is a project specific consideration, namely the resilience of the Proposed Development to climate change and the extent to which projected climate change could alter other predicted impact judgements. More widely, in relation to potential interactions with other developments, and following the same logic with respect to required compliance with regulatory standards and relevant planning policy, no significant cumulative effects are anticipated.

Image 13: Photomontage of the Proposed Development from Viewpoint 1: Coton Road showing the opaque temporary screening

Glint and Glare

Introduction

13.1 The Glint and Glare chapter assesses the potential for glint and glare effects from the operation of the Proposed Development upon surrounding road users, residents in nearby dwellings, and aviation activity. More details are provided in **Chapter 14: Glint and Glare** of the ES.

Baseline Conditions

13.2 The area surrounding the Proposed Development is semi-rural with some residential areas, regional roads and local roads. There are five airfields within 10km of the Site. The existing Drakelow Solar Farm is located approximately 2.7 km north-west of the Site.

Effects

13.3 The assessment identifies a **major adverse** (**significant**) operational effect upon two sections of an unnamed road (north-west from Coton-in-the-Elms) totalling approximately 300m, and approximately 300m of Coton Road. These effects are reduced to **negligible** (**not significant**) upon implementation of screening (described below).

13.4 The assessment also identifies a **minor** and **not significant** operational effect upon surrounding residential dwellings and aviation infrastructure.

Mitigation Measures and Enhancement

13.5 To eliminate the significant effects described above, mitigation is included within the LEMP. This includes proposed hedgerow planting to obscure the reflecting solar panels from view. Temporary screening in the form of opaque netting will be installed where new hedgerow is proposed, so that the reflecting solar panels are obscured from view prior to the hedgerow

reaching maturity. The proposed hedgerow planting provides wider enhancements across the Site such a visual screening and habitat creation as set out in the Outline LEMP.

Cumulative Effects

13.6 Cumulative effects could only occur if a receptor is likely to experience solar reflections from the Proposed Development and another solar farm development at the same time. The only solar development in the list of cumulative schemes considered in the assessment is the proposed Haunton Solar Farm. No cumulative effects are predicted because no receptors have visibility of the two Proposed Developments are the same time.

13.7 No cumulative effects are predicted upon aviation activity because the Haunton Solar Farm is outside the ranges within which significant cumulative effects are considered applicable for aviation receptors[8].

[8] The panel areas only need to have between 50m-100m separation to not be considered cumulatively from an aviation perspective.

Image 14: View across field O16 within Oaklands Farm showing the current land use

Agriculture and Soils

Introduction

14.1 This topic assesses the potential effects of the Proposed Development on agricultural land and land quality, soils as a resource, food production, farm businesses and land use.

Baseline Conditions

14.2 Grades 1, 2 and 3a of the Agricultural Land Classification are defined as 'Best and Most Versatile agricultural land. The Site mainly comprises a mixture of Grade 3a and 3b agricultural land with some areas of Grade 2. Oaklands Farm is a mixed arable and livestock farm. Most of this is in agricultural use, with a few small woodland/copse areas, and an area of farm buildings. The farm has a herd of milking cows, produces fodder for the dairy herd, and arable crops.

Effects

14.3 The installation of the solar panels which generally require mounting structures to be piled into the ground is assessed as having a **negligible** (**not significant**) effect on the agricultural land quality and soils. For the installation of tracks and the BESS and Proposed Development's substation the assessment assumed a worst case scenario that these areas would not be restored and would therefore equate to a permanent loss of land. This would affect 3.7 hectares of best and most versatile land with **moderate** or **minor adverse** effects (**not significant**) predicted.

14.4 The installation of underground cabling would have a short term, temporary effect on soils and by following best practice soil handling techniques outlined in the CEMP, effects would be **negligible** (**not significant**). Effects on soils from construction traffic and works will be **minor** to **negligible** (**not significant**) temporary effects.

14.5 There will be considerable changes to the farm business, but it will not be rendered unviable. The rental income from the Proposed Development will provide support to maintain the

farm business. The construction activities will not prevent access to the farm. Effects are assessed to be **minor adverse** (**not significant**).

14.6 During the operational phase, maintenance activities are assessed as having a **negligible** (**not significant**) effect on agricultural land and soils due to the infrequent nature of maintenance and the use of lighter vans or small tractors during this phase.

14.7 The majority of the land beneath the solar panels will be sown to grassland and managed for the duration of the operational phase. As the land is currently arable land, intensively managed, and fertilised with inorganic fertiliser as well as spread with farmyard manure and liquid slurry, this change to grassland is expected to have a **minor beneficial** effect on soil health and quality (**not significant**).

14.8 The farm business will be able to continue throughout the operational phase. The farm will need to either rent land for fodder production or buy-in more winter fodder and straw, but the dairy unit is expected to continue throughout the operational phase. The farm will continue to operate as a full-time farm and the rental income from the Proposed Development will provide support to maintain the farm business resulting in a **minor adverse** effect (**not significant**) for the farm business and the wider rural economy.

14.9 There will be **minor** or **negligible** adverse economic and food production effects at national and local level, which are **not significant**.

14.10 The decommissioning works will not result in any significant additional adverse effects with effects assessed as **negligible** (**not significant**). The permanent loss of the BESS and Proposed Development's substation area will be **minor adverse** (**not significant**).

Mitigation Measures

14.11 An Outline Soil Management Plan (OSMP) is appended to the CEMP and DEMP. The OSMP sets out principles and procedures for good practice and bespoke mitigation measures in soil handling, storage and reinstatement. It will ensure that soils are handled carefully to avoid unnecessary erosion and compaction. It sets out in what conditions soils should and should not be handled and provides best practice for managing soil stockpiles. These measures will help to ensure that effects on soils are **negligible** to **minor adverse** (**not significant**).

Cumulative Effects

14.12 The cumulative assessment considers the potential cumulative loss of agricultural land. The proposed solar farm at Haunton involves 58ha of BMV, mostly sub-grade 3a, but as the installation of solar PV arrays does not affect the land quality, except for small areas, most of the land is unlikely to be adversely affected by the development. The Proposed Development will, as a worst case assessment, permanently affect 0.5ha of Grade 2 and 3.1ha of Subgrade 3a if the tracks and substation are not restored. Significant cumulative effects are therefore not predicted.

14.13 Other proposals may contribute to the loss of BMV land if for example a housing development is built on BMV. However, as the Proposed Development is not leading to a significant permanent loss of BMV, significant cumulative effects are not predicted.

Image 15: Photograph of overhead power lines running through Park Farm

Other Issues

Introduction

15.1 The Other Issues chapter collates the assessment of other environmental topics, where consultees have requested their inclusion in the ES, but no likely significant effects were predicted at the Scoping stage. It considers the following topics and further information is within **Chapter 16: Other Issues** of the ES:

- Major accidents and disasters.
- Air quality (construction).
- Waste.
- Human health.
- Telecommunications and utilities.

Major Accidents and Disasters

15.2 The assessment considers the potential for the Proposed Development to be affected by, or cause, a major accident or disaster. It considers criminal activity/risks of sabotage which results in fire; fire risk to local residents, habitats and species; and health and safety risks to staff and the general public.

15.3 There will no significant effects relating to major accidents and disasters for the following reasons:

- On site security in the form of fencing, CCTV, remote monitoring and lighting will deter criminal activity.

- Risk of fire associated with BESS battery cells and other operational equipment will be managed through the implementation of an Outline Battery Storage Safety Management Plan (see ES **Appendix 4.6**). In addition, an Emergency Response Plan and a Fire Service Site Specific Risk Assessment will be produced for the Site. The Emergency Response Plan will include contact details for emergency services and other key responders; identify a Suitably Authorised Person to isolate the batteries before any firefighting can begin; indicate escape routes and the location of firefighting equipment on site; and include a firefighting strategy.
- The Proposed Development will comply with all relevant UK legislation relating to health and safety and construction. To further reduce possible health and safety risks, the CEMP, OEMP and DEMP all contain measures to ensure the health and safety of workers. All staff and contractors working on the Proposed Development will be required to comply with the safety procedures set out in these management plans. To ensure hazards are appropriately managed, risk assessments will be undertaken for all major construction activities, with measures put in place to manage any hazards identified.

15.4 The cumulative schemes will have had to undertake their own risk assessments and have plans in place to avoid, reduce and manage potential major accidents and disasters. As such significant cumulative effects are not considered likely.

Air Quality

15.5 The effects of dust and particulate matter during construction and emissions from transport have been considered in the air quality assessment. Dust control measures set out in the CEMP will be in place during construction and operation such that impacts will **not be significant**.

15.6 Traffic levels during the construction, operational and decommissioning phases will not be high enough to result in significant emissions. In addition, the emissions from other schemes in the locality would also not result in significant cumulative emissions. All air quality effects will be **not significant**.

Waste

15.7 A key aim of the Proposed Development is to ensure that waste arisings are managed following the waste hierarchy with materials being reused, recovered and recycled before being incinerated or sent to landfill. There are regulations in the UK over the management of electrical

and battery waste which will be adhered to. The glass and metal materials that make up solar panels are readily recyclable. The recycling of silicon is an emerging market but there are already specialist companies who offer this service and this is expected to expand with the increase in solar energy installations. There are currently no large-scale recycling facilities for recycling batteries on this scale in the UK. Such facilities do however exist in Europe and as the UK battery market expands and matures, particularly in the electric car industry, it is expected that UK opportunities for recycling will appear.

15.8 Measures including the minimisation, segregation and recycling of waste will be included within a Waste Management Plan (to be included in the final CEMP and OEMP) and a Decommissioning Resource Management Plan (within the DEMP) to ensure the safe and correct reuse, recycling or disposal of all waste generated. With these in place, **no significant** effects are anticipated.

15.9 In terms of cumulative effects, the waste management plans to be prepared for the Proposed Development, and assumed to be prepared for the cumulative schemes, would ensure adequate management of waste arisings and therefore it is considered that cumulative effects would **not be significant**.

Human Health

15.10 The following groups were considered as potential receptors for health effects resulting from the Proposed Development:

- Occupants of nearby villages (Rosliston, Walton-on-Trent and Coton in the Elms).
- Residents of farms/properties outside the main villages.
- Drivers and cyclists using local roads that run through and around the Site.
- Users of public rights of way which run through the Site (Cross Britain Way) and in close proximity to the Site.
- Construction and operational staff on Site.

15.11 The assessment considers effects on the following health and wellbeing determinants and concludes that there would either be no discernible effect or beneficial effects on health:

- Air quality and noise – no discernible effects due to embedded best practice measures minimising the effects of dust, noise, vibration, air pollution and odours during construction, operation and decommissioning results.
- Accessibility and active travel / Access to open space and nature – no discernible effects due to keeping existing PRoW open during all phases of the Proposed Development. Beneficial effects from creating a new permissive path for use during the operational phase to encourage walking and provide new open space and links between PRoWs.
- Crime reduction and community safety – no discernible effects due to security measures incorporated into the design of the Proposed Development, such as fencing, lighting and CCTV will help to design out crime and deter unauthorised entry to the Site.
- Access to work and training – all phases of the Proposed Development will create employment with the greatest number of staff needed during construction. The provision of access to local employment and training opportunities will have no discernible effect to a beneficial effect as it is not possible to be certain on the level of local job creation.

15.12 There would be **no significant** cumulative effects as all schemes: should have measures to mitigate and manage effects from air quality and noise; will make provision for active travel and no have an effect on the PROW network; will design out crime; and will provide some level of local employment.

Telecommunications and Utilities

15.13 The assessment of effects on telecommunications and utilities has taken account of desk based searches and consultation with utilities operators. The Site contains gas, water, electricity, and telecommunications services as well as an overhead microwave link.

15.14 There will be **no significant** effects on telecommunications and utilities assets as assets have either been avoided through design or can be protected through careful management of construction practices. Protective Provisions will be sought to be agreed with that provider and any works within an agreed distance of the asset will need to be undertaken in accordance with the requirements of those Protective Provisions.

15.15 All developments need to factor in the location of utilities and telecommunications infrastructure prior to construction not only to protect these assets but to also ensure the safety of construction workers. It is expected that each development will undertake suitable surveys and

identify design changes or mitigation to avoid adverse effects. There are therefore not considered to be any cumulative effects.

Image 16: Photomontage of the Proposed Development from Viewpoint 2: Cross Britain Way 10 years after planting mitigation

Summary of Effects

Introduction

16.1 The ES for the Proposed Development has been carried out in accordance with regulatory requirements and guidance on good practice. The findings of the surveys undertaken, in addition to the consultation undertaken to date, have informed the design process, and, as a result, design modifications have been made. The iterative design process continued with the design also responding to comments received following consultation at Scoping Stage and on the Preliminary Environmental Information Report.

16.2 Prior to the implementation of mitigation, significant effects **are not** predicted in relation to the following topics, and likewise, **residual effects are not significant**:

- Water Resources and Flood Risk.
- Ground Conditions.
- Noise.
- Agriculture and Soils.
- Other Issues: Major Accidents and Disasters; Air Quality (construction); Waste; Human Health; and Telecommunications and Utilities.
- Cumulative and combined effects across all topic chapters.

16.3 Prior to mitigation, significant adverse effects **are** predicted in relation to the following topics, however there is some scope to mitigate or reduce adverse effects, following the implementation of proposed mitigation. This would result in **residual effects** as follows:

- Landscape and Visual – localised **moderate adverse** (**significant**) landscape and visual effects during construction and operation by Year 10 of the Proposed Development with the planting set out in the LEMP reaching maturity and providing the necessary screening.

Significant effects cannot be avoided in their entirety given the nature of the Proposed Development.

- Ecology - effects on habitats from direct habitat loss will be reduced to **not significant** through delivery of habitat creation including species-rich grassland, hedgerow and woodland planting and the installation of bat boxes (set out in the LEMP).
- Historic Environment – unrecorded below-ground heritage assets could be subject to **significant** effects during construction if any high value assets are affected. However, the likelihood of any high value finds is low. Proposed mitigation will not reduce the level of effects but will provide a record of any assets affected. Therefore, the **potential for significant** effects remains.
- Transport and Access – mitigation measures in the Construction Traffic Management Plan will reduce localised **significant** effects during construction to **negligible** – **slight** across all sensitive receptors and therefore **not significant**.
- Glint and Glare - **negligible** (**not significant**) effects for road users through the use of opaque netting, to obscure panels from view prior to the new planting reaching maturity.

16.4 **Significant beneficial** (**positive**) **effects** are predicted in relation to:

- Ecology – there will be **significant beneficial** effects from the treatment of Japanese knotweed on Site, reducing the spread of/introduction of invasive species. Planting and habitat creation delivered through the LEMP, and resulting in Biodiversity Net Gain is expected to provide **significant beneficial** effects to ecological features.
- Climate Change and Socio-Economics – a **moderate** to **major significant beneficial** effect is predicted during the operational phase due to the contribution the Proposed Development will make towards the increase of new renewable capacity required in the UK and the provision of secure, clean energy.

16.5 The ES includes an assessment of cumulative effects. No significant cumulative effects were identified. In combination effects are also considered where applicable. No significant in combination effects were identified.

16.6 Overall, the ES shows that, given the iterative design process, and with good practice and proposed mitigation measures in place, most potential significant effects associated with the

construction, operation and decommissioning of the Proposed Development will be avoided or minimised