Rosefield Solar Farm

Environmental Statement

Non Technical Summary
(Tracked)

EN010158/APP/6.4.2
Revision 2
Deadline 5
~~September 2025~~July 2026
Rosefield ~~Solar Farm~~Energyfarm Limited

APFP Regulation 5(2)(a)
Planning Act 2008
Infrastructure Planning
(Applications: Prescribed Forms and Procedure) Regulations 2009

Table of Contents

1. Introduction

1.1. Background

1.1.1. Rosefield Solar Farm (referred to in the Environmental Statement as the 'Proposed Development') is a proposed solar photovoltaic electricity generating and battery storage facility with associated infrastructure which would allow for the generation and export of electricity exceeding 50 megawatts. Rosefield Solar Farm encompasses approximately 675 hectares of land located in Buckinghamshire.

1.2. The Applicant

1.2.1. Rosefield Energyfarm Limited (also known as the 'Applicant)' is a joint venture between EDF Renewables UK and Ireland and PS Renewables.

1.3. Environmental Impact Assessment

1.3.1. Environmental impact assessment is the process that identifies the key environmental effects resulting from the construction, operation (including maintenance) and, where relevant, decommissioning of a proposed development. It suggests ways that these effects can be avoided, reduced or managed. Environmental impact assessment is a requirement of United Kingdom law for certain developments that have the potential to cause significant environmental effects.

1.3.2. An Environmental Impact Assessment has been undertaken for Rosefield Solar Farm, the findings of which are presented in the Environmental Statement.

1.4. Purpose of this Non Technical Summary

1.4.1. This document is a Non Technical Summary of the findings of the Environmental Impact Assessment, which are reported in the Environmental Statement. It has been prepared to introduce Rosefield Solar Farm, explain the likely significant environmental effects of the construction, operation (including maintenance) and decommissioning of Rosefield Solar Farm, and the measures proposed to protect the environment.

1.4.2. The Environmental Statement has been prepared to accompany the Development Consent Order Application, as required by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. It has been prepared to ensure that the Examining Authority (who considers the Development Consent Order Application), and the Secretary of State (who makes the ultimate decision as to whether consent should be granted) are

aware of the likely significant effects on the environment as a result of Rosefield Solar Farm when making their decision.

1.4.3. The Environmental Statement is split into four volumes (as set out in **Plate 1**).

Volume 1: Environmental Statement Main Report	Introduces the environmental assessment and the Rosefield Solar Farm
Volume 2: Environmental Statement Main Report	Discusses the findings of the Environmental Impact Assessment
Volume 3: Figures	Presents the figures referenced throughout the Environmental Statement Main Report.
Volume 4: Technical Appendices and Non-Technical Summary	Provides the accompanying reports and appendices to the Environmental Statement Main Report and summarises the Environmental Impact Assessment and the Environmental Statement in non-technical language.

Plate 1 Content of the Environmental Statement

1.4.4. As this document provides a non technical summary of the environmental assessments presented in the Environmental Statement, further details can be found in the Environmental Statement. **Table 1.1** below outlines where further detail on each environmental assessment can be found in **Volume 2**.

Table 1.1: Location of each environmental assessment in Volume 2 and Volume 4 of the Environmental Statement

Chapter of Volume 2 of the Environmental Statement	Environmental assessment
Vol. 2, Chapter 6	Air Quality
Vol. 2, Chapter 7	Biodiversity
Vol. 2, Chapter 8	Climate
Vol. 2, Chapter 9	Cultural heritage
Vol. 2, Chapter 10	Landscape and visual
Vol. 2, Chapter 11	Land and groundwater
Vol. 2, Chapter 12	Soil
Vol. 2, Chapter 13	Noise and vibration
Vol. 2, Chapter 14	Population
Vol. 2, Chapter 15	Transport and access
Vol. 2, Chapter 16	Water
Vol. 2, Chapter 17	Cumulative effects
Vol. 4, Chapter 5, Appendix 5.5	Health and Wellbeing

1.4.5. This document has been updated at Deadline 5 to include a non-technical summary of effects of the Proposed Development on Health and Wellbeing, which is set out in detail within the **ES Volume 4, Appendix 5.5: Health and Wellbeing Summary Statement [EN010158/APP/6.4.7]**, in response to **Action Point 33** in **Applicant's Response to Action Points from ISH3 [EN010158/APP/8.33]**. References to other application documents have not been updated from the original submission. Please refer to the **Guide to the Application [EN010158/APP/1.2.11]** for the list of current versions of documents.

1.5. Need for Rosefield Solar Farm

1.5.1. Rosefield Solar Farm would help the United Kingdom build a low-carbon energy system and make an important contribution to meeting the United Kingdom Government's target of net zero carbon emissions and a secure, low carbon United Kingdom energy supply.

1.5.2. Low carbon solar generation is essential to enabling the decarbonisation of the United Kingdom's energy system. This is in line with the

Overarching National Policy Statement for Energy (EN-1)[1], published in November 2023, which states that "*a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar*". It also states that low-carbon energy infrastructure, including solar and Battery Energy Storage Systems, is a "critical national priority."

[1] Overarching National Policy Statement for Energy (EN-1) (2023). Available online: https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1

2. Location of Rosefield Solar Farm

2.1. Location

2.1.1. The location of Rosefield Solar Farm is shown on **Figure 1: Location plan** located in **Annex A** of this Non Technical Summary. Rosefield Solar Farm is located within the administrative boundary of Buckinghamshire Council. The settlements of Calvert, Middle Claydon, Botolph Claydon, East Claydon and Hogshaw lie within 1.5 kilometres of Rosefield Solar Farm.

2.1.2. **Figure 1: Location Plan** also presents the boundary of the anticipated maximum area of land that would be required to facilitate the construction, operation (including maintenance) and decommissioning of Rosefield Solar Farm. This boundary is known as the 'Order Limits'. The land within the Order Limits is known as 'the Site'. The area of the Site comprises approximately 675 hectares of land.

2.1.3. For the purposes of the Development Consent Order Application, the Site comprises four parcels of land (Parcel 1, 1a, 2 and 3), the Interconnecting Cable Corridor, the Grid Connection Cable Corridor, the National Grid East Claydon Substation, and associated access, as outlined on **Figure 2: Order Limits** and **Figure 3: Zonal Masterplan** located in **Annex A** of this Non Technical Summary.

2.2. Existing land use

2.2.1. The land within the Order Limits predominately consists of agricultural fields and pastureland interspersed with hedgerows, ditches, woodland blocks and farm access tracks.

2.3. Environmental designations

2.3.1. The Site itself does not overlap any environmental designations, except for the where the Order Limits encroach into Romer Wood and Greatsea Wood (further detail below) and Quainton-Wing Hills Area of Attractive Landscape which lies within the southern part of Parcel 2. However, there are numerous environmental designations beyond the Order Limits, as described below and illustrated in **Figure 4: Environmental Considerations** located in **Annex A** of this Non Technical Summary.

Ecology and biodiversity

2.3.2. There are no international statutory designations within 10 kilometres of the Site.

2.3.3. There are three statutory nationally designated sites within 2 kilometres of the Site:

- Sheephouse Wood Site of Special Scientific Interest (adjacent to Parcel 1 and Parcel 1a);
- Finemere Wood Site of Special Scientific Interest (adjacent to Parcel 2); and
- Grendon and Doddershall Woods Site of Special Scientific Interest (approximately 1.36 kilometres south west of Parcel 1a).

2.3.4. Two non-statutory designated sites are located within the Order Limits; Romer Wood Local Wildlife Site and Greatsea Wood Local Wildlife Site located within the Internal Access Corridor to the north of Parcel 1a.

2.3.5. There are 29 non-statutory designated sites within 2 kilometres of the Order Limits, namely 17 Local Wildlife Sites, seven Biological Notification Sites, two Wildlife Trust Reserves and three Biodiversity Opportunity Areas.

2.3.6. Those that are adjacent to the Order Limits comprise:

- Bernwood Biodiversity Opportunity Area (overlaps with Parcel 1, 1a and 2);
- Shrub Woods Local Wildlife Site (adjacent to Parcel 1);
- Decoypond Wood Local Wildlife Site (adjacent to Parcel 1);
- Runts Wood Local Wildlife Site (adjacent to Parcel 2);
- Finemere Wildlife Trust Reserve (adjacent to Parcel 2);
- Home Wood, Middle Claydon Local Wildlife Site (adjacent to Interconnecting Cable Corridor); and
- Balmore Wood Local Wildlife Site (located approximately 95 metres west of Parcel 2).

2.3.7. Two areas of ancient woodland are located within the Order Limits, Romer Wood and Greatsea Wood. Multiple areas of ancient woodland are located directly adjacent to the Order Limits in several locations and within 2 kilometres of the Order Limits. These comprise ancient and semi-natural woodland and ancient replanted woodland parcels.

Landscape

2.3.8. The southern area of Parcel 2 is situated in a local designation of Quainton-Wing Hills Area of Attractive Landscape, with Quainton Hill located approximately 2 kilometres south east of Parcel 2.

2.3.9. Rosefield Solar Farm is located within National Character Area 108 Upper Clay Vales.

2.3.10. The nearest National Park or National Landscape (formerly known as an Area of Outstanding Natural Beauty) to the Site is the Chilterns National Landscape, located more than 18 kilometres to the south east.

Cultural heritage

2.3.11. There are no designated cultural heritage assets located within the Site.

2.3.12. The Site is situated adjacent to two Conservation Areas, Botolph Claydon and Middle Claydon. Botolph Claydon Conservation Area lies north of Parcel 2 and Middle Claydon Conservation Area lies to the north of Parcel 1.

2.3.13. There are six Scheduled Monuments within 5 kilometres of the Site. Five of these are medieval in date and comprise a preceptory of the Knights Hospitallers, associated fishponds and the medieval settlement of Hogshaw, two deserted medieval villages, a medieval standing Cross, and a medieval moated site. One is an Norbury Iron Age univallate hillfort.

2.3.14. The following cultural heritage assets are also present within 5 kilometres of the Order Limits:

- Four Registered Parks and Gardens (two Grade I and two Grade II);
- 14 Conservation Areas (including Botolph Claydon and Middle Claydon Conservation Areas);
- Nine Grade I Listed Buildings;
- 30 Grade II* Listed Buildings; and
- 469 Grade II Listed Buildings.

Geology

2.3.15. Bedrock geology across the Site comprises the following mudstone layers:

- West Walton Formation;
- Weymouth Mudstone Member;
- Stewartby Member; and
- Peterborough Member.

Water resources

2.3.16. There are no Main Rivers located within the Site. The closest Main River, River Ray, is located approximately 200 metres south of Parcel 2.

2.3.17. There are several minor unnamed ordinary watercourses and drainage ditches located across the Site. There are two named ordinary

watercourses, one directly north of Parcel 1a (Muxwell Brook) and another directly east of Parcel 3 (Claydon Brook).

2.3.18. As shown on **Figure 4: Environmental Considerations** located in **Annex A** of this Non Technical Summary, the Site is predominately located within Flood Zone 1. There is a small area of Flood Zone 2 and Flood Zone 3 located at the northern extent of the Order Limits and an area surrounding the Muxwell Brook in the south western area of the Site.

2.3.19. The Site is not located within a Source Protection Zone; however, it is located within a Drinking Water Safeguarding Zone for surface water and two Drinking Water Protected Areas.

3. Description of Rosefield Solar Farm

3.1.1. Rosefield Solar Farm will comprise the following elements:

- Solar photovoltaic development consisting of:
  - Ground mounted solar photovoltaic generating station. The generating station would include solar photovoltaic modules and mounting structures; and
  - Balance of Solar System, which comprises: Inverters; Transformers; Switchgear; Combiner Boxes; acoustic fencing and cabling.
- A project substation (the 'Rosefield Substation') compound comprising: Transformers; Switchgear; reactive power compensation bays; disconnectors; circuit breakers; busbars; control equipment; lightning surge arrestors; building(s) including office, control, functions, material storage, material laydown areas and welfare facilities; firewalls; fencing and acoustic fencing; a security cabin; parking as well as wider monitoring, maintenance and emergency equipment;
- A Main Collector Compound and two Satellite Collector Compounds comprising: Switchgear; Transformers; ancillary equipment; operation and maintenance and welfare facilities; material storage; material laydown areas; fencing and acoustic barriers; and security cabins;
- Battery Energy Storage System compound comprising: batteries and associated Inverters; Transformers; Switchgear, ancillary equipment and their containers; office, control and welfare buildings; fencing and acoustic barriers; monitoring, maintenance and emergency systems; air conditioning; electrical cables; fire safety infrastructure; operation (including maintenance) security facilities; material storage; and material laydown areas;
- Interconnecting Cabling Corridor(s) to connect the solar photovoltaic modules and the Battery Energy Storage System to the Satellite and Main Collector Compounds to the Rosefield Substation;
- A Grid Connection Cable Corridor to connect the Rosefield Substation to the National Grid East Claydon Substation via 400 kilovolt cabling;
- Ancillary infrastructure works comprising: boundary treatment; security equipment; lighting; fencing; landscaping; internal access tracks; works to facilitate vehicular access; earthing devices; earthworks; surface water management; utility connections and diversions; and any other works identified as necessary;
- Green and blue infrastructure, recreation and amenity works comprising: landscaping; habitat management; biodiversity enhancement; the creation of three permissive footpaths; and works to permanently divert four public right of way footpaths in five instances;

- Site-wide operational monitoring and security equipment; and
- Highways infrastructure improvements and safety works comprising: minor junction improvement works; road widening; passing places; and works to facilitate vehicular access to the Site.

3.1.2. The export capacity of Rosefield Solar Farm would exceed 50 megawatts. Therefore, Rosefield Solar Farm is classified as a Nationally Significant Infrastructure Project and will require a Development Consent Order under the Planning Act 2008.

3.2. Construction of Rosefield Solar Farm

3.2.1. The construction phase is anticipated to occur over a 30-month period. Subject to being granted consent, the earliest the construction phase is anticipated to commence is mid to late 2029, with completion in 2031. As such, there is a potential likelihood of overlapping construction works on different parts of the Site. The final construction programme would depend on the detailed layout design and the potential environmental constraints on the timing of construction activities.

3.2.2. Rosefield Solar Farm currently has a grid connection date of Autumn/Winter 2031, although there is the potential that this date could change.

3.2.3. **Table 3.1** indicates the potential construction durations across the different parts of Rosefield Solar Farm, showing a series of overlapping stages. The assessments have considered a realistic worst-case of the commencement of all construction works being from the year 2029.

Table 3.1: Indicative Construction Programme*

Works/Year	2029	Winter/Spring 2030	Summer/Autumn/ Winter 2030	2031
Parcel 1				
Parcel 2				
Parcel 3				
Rosefield Substation				
Battery Energy Storage System				

***** Greyed cells reflect construction works taking place. White cells reflect no construction works taking place.

Pre-commencement activities

3.2.4. The Site preparation and permitted preliminary works would involve the following activities (not necessarily in order):

- Environmental surveys, geotechnical surveys, intrusive archaeological surveys and other investigations for the purpose of assessing ground conditions and the identification, if present, of unexploded ordnance across the Site;
- Remedial work in respect of any contamination or other adverse ground conditions;
- Above ground site preparation for temporary facilities for use by contractors;
- Temporary display of site notices or advertisements;
- Diversion of existing services and the laying of temporary services;
- The provision of temporary means of enclosure and site security for construction;
- Site access works to allow for the establishment of temporary and permanent points of access from the public highway;
- Site clearance (including vegetation removal and pruning);
- Early planting;
- Delivery of construction materials, equipment, and plant to the Site; and
- Removal of plant and machinery.

Construction activities

3.2.5. The general construction activities would be undertaken in accordance with the principles set out within the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**. The indicative construction activities that would be required comprise (not necessarily in order):

- Site preparation, including minor localised site levelling, vegetation clearance, landscape planting and establishment of perimeter fencing and security measures;
- Import of construction materials, plant, and equipment to Site;
- Establishment of Site Construction Compounds and welfare facilities;
- Appropriate storage and capping of soil;
- Management of waste;
- Establishment of drainage systems;

- Site access works and construction of new Site tracks and points of access from the public highway;
- Installation of bridges and culverts across watercourses and ditches;
- Off-site highway works;
- Installation of photovoltaic module frames, photovoltaic modules, Inverter Transformer Station, cabling, and fencing within each photovoltaic field;
- Installation of Rosefield Substation, Main and Satellite Collector Compounds, Battery Energy Storage System and associated foundations and cabling within Interconnecting Cabling Corridor(s);
- Trenching in sections;
- Installation of horizontal directional drilling launch and reception compounds and drilling of horizontal directional drilling crossings;
- Testing and commissioning; and
- Site reinstatement (i.e., returning any land used during construction for temporary purposes to its previous condition).

Construction access

3.2.6. The construction route to the Site would make use of the A41 to Claydon Road via Fidlers Field/Snake Lane. This routing avoids construction traffic passing through villages and towns in the surrounding area.

3.2.7. All large vehicle traffic would access the Site via an exclusive access into Parcel 3 off East Claydon Road during the construction phase. This access would be taken via Winslow, making use of National Highways' preferred routes for high and heavy vehicle movements. The preferred entry and exit route for large vehicle traffic has been included within the Order Limits.

3.2.8. Several access points and road crossing options between Parcels 1, 1a, 2 and 3 have been identified to access the Site. All access points for construction would become permanent into the operation (including maintenance) phase.

3.2.9. Approximately 30 staff per Primary Construction Compound would be on-site for the initial site set-up, including forming the access points and preparing the ground, which would increase once the Construction Compounds are set up and construction of the access tracks within each parcel begins.

3.2.10. The construction phase is anticipated to require a maximum of 600 construction staff on-site.

Commissioning

3.2.11. During the 30-month construction period, a 6-month commissioning period would occur and involve various stages of testing before electricity could be generated and supplied to the national grid. This work has been incorporated into the 30-month construction phase and the commissioning would likely involve inspections and electrical and equipment testing before Rosefield Solar Farm can become operational.

3.3. Operation (including maintenance) of Rosefield Solar Farm

3.3.1. Rosefield Solar Farm will have an operational life of 40 years. During this phase, routine activities will include servicing, maintenance, replacement of solar and battery energy storage system equipment, cleaning of solar panels, and vegetation management. Any replaced equipment will follow the waste hierarchy, which means that Rosefield Energyfarm Limited will focus firstly on reuse and recycling, and electrical waste will be disposed of in compliance with the relevant regulations to minimise environmental impact. If operational equipment needs replacement, some heavy goods vehicle activity is likely to occur.

3.3.2. It is expected that up to 24 permanent staff will be onsite per day.

3.3.3. The land around the solar panels and associated areas will be managed in accordance with the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**. This Plan includes planting, screening and habitat creation to enhance the ecological value of the Site and support local wildlife. All operational activities will comply with the **Outline Operational Environmental Management Plan [EN010158/APP/7.3]**, covering working hours, lighting, parking, security, monitoring and waste management. Additionally, an **Outline Battery Safety Management Plan [EN010158/APP/7.9]** will ensure the safety of the battery energy storage system throughout its lifecycle, addressing design, operation, disposal and emergency planning.

3.4. Decommissioning of Rosefield Solar Farm

3.4.1. Once Rosefield Solar Farm ceases to operate, all solar photovoltaic infrastructure, including substations and the battery energy storage system, will be removed. Temporary compounds will be set up for equipment and staff parking, then removed post-decommissioning.

3.4.2. All above-ground infrastructure will be dismantled responsibly, with materials managed for reuse or recycling. Solar panels, which are 99 percent recyclable, will be reused or recycled where possible, with the intention of minimising materials sent to landfill. Concrete and hardstanding will be removed to a depth of 1 metre, while below-ground cables will remain and would be disabled.

3.4.3. The decommissioning phase would see the land within the Order Limits returned to the landowner. The permanently diverted public rights of way would not be altered any further and would remain, post-decommissioning of Rosefield Solar Farm. The permissive footpaths would be retained or removed at the discretion of the landowner post-decommissioning.

3.4.4. The Site will be restored according to the **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**, the details of which will require approval by Buckinghamshire Council at that time.

3.4.5. Decommissioning is expected to take approximately 24 months and may occur in phases.

3.5. Environmental management

3.5.1. The following outline management plans are submitted in support of the Development Consent Order Application:

- **Outline Construction Environmental Management Plan and Outline Site Waste Management Plan [EN010158/APP/7.2]**;
- **Outline Operational Environmental Management Plan [EN010158/APP/7.3]**;
- **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**;
- **Outline Construction Traffic Management Plan [EN010158/APP/7.5]**;
- **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**;
- **Outline Soil Management Plan [EN010158/APP/7.7]**;
- **Outline Rights of Way and Access Strategy [EN010158/APP/7.8]**;
- **Outline Battery Safety Management Plan [EN010158/APP/7.9]**;
- **Draft Archaeological Management Strategy [EN010158/APP/7.10]**;
- **Outline Drainage Strategy [EN010158/APP/7.11]**; and
- **Outline Employment, Skills and Supply Chain Plan [EN010158/APP/7.14]**.

3.5.2. If consent is granted for Rosefield Solar Farm, Rosefield Energyfarm Limited will be required to comply with requirements that ensure the implementation of the mitigation measures in these plans. These plans set out how different phases and aspects of Rosefield Solar Farm will be controlled, managed and/or monitored.

4. Alternatives considered

4.1.1. The assessment of alternatives has been framed within the context of the clear and pressing need for Rosefield Solar Farm. The consideration of alternatives has followed the guidelines set out in relevant planning policies, including the Overarching National Policy Statement for Energy (EN-1), National Policy Statement for Renewable Energy Infrastructure (EN-3), and National Policy Statement for Electricity Networks Infrastructure (EN-5).

4.1.2. The alternatives studied for Rosefield Solar Farm include alternative sites, other renewable technologies, other solar technologies, and other layout options. The 'no development' option was dismissed by Rosefield Energyfarm Limited, as it would not support the renewable electricity generation required to meet the United Kingdom's net zero targets.

Approach to site selection

4.1.3. Rosefield Energyfarm Limited undertook a systematic process to determine a suitable site. A range of technical, environmental, and economic factors are considered when investigating and assessing any potential site for large-scale solar developments. A **Site Selection Report** has been prepared and forms **Appendix 1** of the **Planning Statement [EN010158/APP/5.7]** to provide an overview of the site selection process undertaken by Rosefield Energyfarm Limited to identify the location of Rosefield Solar Farm. The process of site selection is summarised below, in tandem with the project objectives.

4.1.4. Rosefield Energyfarm Limited sought to develop a single new Nationally Significant Infrastructure Project scale solar project exceeding 50 megawatts (based on a site comprising minimum 404 hectares) which:

- Would contribute to meeting the United Kingdom's urgent need for low carbon energy generation;
- Would be in close proximity to an available grid connection or part of the transmission network in which capacity exists;
- Would avoid impacts on sensitive landscapes and environmental features as far as practicable;
- Would be readily accessible from existing strategic road networks to facilitate construction access; and
- Would be delivered on land which could be acquired voluntarily thereby avoiding the need for large scale compulsory acquisition.

4.1.5. Rosefield Energyfarm Limited did not consider sites that could only deliver smaller scale projects.

4.1.6. National Policy Statement for Renewable Energy Infrastructure (EN-3) identifies three fundamental core attributes, amongst other considerations, which large scale solar developments require:

- Existence of sufficient land to deliver the project and meet the scale of proposed development's aims;
- Availability and capacity of a suitable Point of Connection to the National Electricity Transmission System; and
- Solar irradiation levels to support the development's potential to produce an efficient and economic energy yield.

Alternative sites

4.1.7. There are limited locations in the United Kingdom that satisfy all three of the above core site selection requirements (land availability and suitability, feasible irradiation levels and grid connection availability). For example, the need for proximity to existing and available grid connection capacity may limit opportunities in areas where irradiation is at its highest.

4.1.8. Buckinghamshire is crossed by a number of high voltage transmission lines. These lines are important arteries of the National Electricity Transmission System, located between the demand centres of the South and the Midlands. The number of lines in Buckinghamshire is sufficient to continue distributing electricity reliably to users while also having capacity to connect large-scale generation facilities for transmission of power nationally. It is also in an area with relatively high levels of irradiation.

4.1.9. Rosefield Energyfarm Limited engaged with National Grid to discuss potential opportunities for a connection offer within the Buckinghamshire area. In early 2020, a grid connection offer was made for capacity in East Claydon, Buckinghamshire.

4.1.10. Against this background, Rosefield Energyfarm Limited considered several important factors, as summarised below, before arriving at the preferred Site.

- **Irradiance and site topography** – Irradiance is sufficiently high in Buckinghamshire to support solar development. The general topography of the Order Limits is gently undulating, making it generally suitable for solar;
- **Network connection** – the site selection focused on a 10 kilometre radius around the National Grid East Claydon Substation (the search area) where there was an available point of connection. This radius was restricted by what was considered viable for this project, taking into account capacity, cable distance, capital costs and market conditions at the time. Within this radius, preference was given to sites in close proximity to the point of connection;

- **Proximity of site to dwellings** – the site selection sought to avoid sites in close proximity to residential dwellings or where it would not be possible to appropriately mitigate visual amenity and glint and glare. Where residential dwellings are in close proximity to the Order Limits, setbacks of infrastructure and screening have been designed to mitigate potential effects;
- **Agricultural land classification and land type** – the site selection sought to minimise the impact on best and most versatile agricultural land (land classified as Grade 3a and above). The Order Limits are located on land that is predominantly Grade 3b;
- **Accessibility** – the site selection considered the suitability of access routes within the search area. The Order Limits are accessible by the local road network and well serviced by the strategic road network by the A41 to the south, the A421 to the north and the A4146 to the east.

4.1.11. Other considerations include environmental and spatial constraints (for example avoiding areas that are prone to flooding and direct impacts on designated ecological and geological sites, historic designations and nationally designated landscapes), site size and land assembly (for example identifying sufficient adjoining areas of land for Rosefield Solar Farm to be economically viable), and land availability (for example identifying willing landowners with large scale land holdings).

Alternative renewable technologies

4.1.12. Alternative types of renewable energy generation technologies, such as wind and hydrogen, were discounted by Rosefield Energyfarm Limited.

4.1.13. Wind technology was not considered feasible as at the time of design development, planning policy in England made it exceptionally difficult to achieve planning consent for onshore wind and therefore it was not considered achievable under the grid connection timescales. The Site is also not considered to be well suited for onshore wind energy generation due to the low, flat topography of the local area, which would likely give rise to greater landscape and visual effects in comparison to solar photovoltaic development due to the height of the turbines. In addition, the proximity to residential dwellings may result in adverse effects associated with shadow flicker and wind turbine noise. Wind farms also require more land to produce the same capacity as solar development.

4.1.14. It is also important to frame the consideration of alternative technologies in the context of United Kingdom Government policy around future energy generation. While recent policy changes to the National Planning Policy Framework have opened the door to potential onshore wind development, for example, that does not place a higher policy emphasis on the delivery of a specific type of generating station. Indeed, during the development of Rosefield Solar Farm, there was no realistic possibility of a proposal for

onshore wind having sufficient support in policy terms to be considered a viable alternative technology.

4.1.15. Hydrogen, which is not a generation technology in its own right, was not considered suitable due to the commercial viability and environmental impacts for this type of energy generation in comparison to solar energy generation. For example, there would need to be a significant source of water and a nearby off-taker or a hydrogen pipeline or road network that is capable of accommodating frequent heavy-good vehicle movements for the lifetime of a hydrogen development to deliver the hydrogen to end users. It was therefore not considered to be a realistic alternative to Rosefield Solar Farm.

4.1.16. It is therefore considered that solar technology is the most suitable renewable energy generating solution for the Site.

Alternative solar technologies

4.1.17. The Development Consent Order Application will maintain flexibility to incorporate the latest solar technology at the time of construction. However, alternative solar technologies and design options have been considered and several have been discounted:

- Tracker panels, which adjust their position to follow the sun, were discounted due to their increased height, which would lead to greater landscape and visual impacts. Small areas within the Site were considered suitable, but overall, the installation would not be commercially viable or environmentally favourable.
- East-west fixed panels were discounted despite offering higher energy production in the evening and the morning. The inclusion of a Battery Energy Storage System negates this benefit, as they can store energy generated during peak times for use at other times. Additionally, east-west fixed panels would reduce the potential for biodiversity net gain and enhancements by limiting light exposure to the ground, decrease space for biodiversity planting beneath the panels, and increase water runoff due to their denser layout compared to south-facing panels.

Alternative site layouts

4.1.18. The design and layout of Rosefield Solar Farm have been part of an iterative process informed by environmental assessments, a site selection assessment, design principles and controls, and engagement with stakeholders and consultees.

4.1.19. This evolution has comprised three distinct design stages:

- **Design Stage 1** - Following the identification of the Site, initial plans were published between September and November 2023 during the

Phase One Consultation phase and in the Environmental Impact Assessment Scoping Report in November 2023.

- **Design Stage 2** – Undertaken after the initial consultation. Feedback and environmental survey results were incorporated into updated plans published from September to November 2024 as part of the Phase Two Consultation process, which informed assessment within the Preliminary Environmental Information Report.
- **Design Stage 3** - Undertaken following the Phase Two Consultation and informed by the targeted consultation undertaken in summer 2025, where feedback and further environmental assessments shaped the design plans that form the basis of the Environmental Statement and Development Consent Order Application.

4.1.20. Engagement throughout this process involved consultations with various stakeholders, including local councils, environmental agencies, and community organisations, with feedback informing the ongoing design development. Further details on the consultation process are available in the **Consultation Report [EN010149/APP/5.1]**.

Design Stage 1

Solar photovoltaic development

4.1.21. Following an initial assessment, which included desktop assessments and visits to the Site, Rosefield Energyfarm Limited identified fields which were considered unsuitable for accommodating solar photovoltaic development and were therefore discounted.

Battery Energy Storage System and Rosefield Substation

4.1.22. Rosefield Energyfarm Limited carried out an assessment to identify fields that would be suitable for the Battery Energy Storage System and Rosefield Substation based on the information available at the time. The areas that were initially considered suitable for the Battery Energy Storage System and Rosefield Substation were areas that could potentially accommodate infrastructure up to 7.6 metres and 15 metres respectively.

4.1.23. The following factors informed the development of the design for the location of the Battery Energy Storage System and Rosefield Substation during Design Stage 1:

- Proximity to the grid connection;
- Proximity and visual impact to the residential settlement of Botolph Claydon;
- Impact on the setting of Botolph Claydon Conservation Area;
- Views from Quainton Hill;

- Located outside areas of potential flood risk (Flood Zones 2 and 3);
- Proximity to and impacts on nearby dwellings; and
- Proximity to and locations of public rights of way.

4.1.24. The fields identified as being suitable for Battery Energy Storage System and/or Rosefield Substation were Fields E10, E11, E20, E21, E22, E23, D8, D9, D18 and D19 (as shown on **Figure 2: Order Limits**).

Design Stage 2

Solar photovoltaic development

4.1.25. A number of changes were made to Rosefield Solar Farm, including removal of fields and partial fields from solar photovoltaic development and the Interconnecting Cable Corridor, and the addition of new areas for Interconnecting Cable Corridor, Internal Access Corridors and Construction Compounds (as shown on **Environmental Statement Volume 3, Figure 4.2: Stage 2 Zonal Masterplan [EN010158/APP/6.3]**).

Battery Energy Storage System and Rosefield substation

4.1.26. Further assessment was carried out to review and identify suitable locations for the Battery Energy Storage System and Rosefield Substation, taking into consideration the survey work undertaken to date, including landscape and visual assessments and noise modelling.

Grid Connection Cable Corridor

4.1.27. Following further engagement with National Grid on the proposed extension to the National Grid East Claydon Substation, the Order Limits were extended to the west of the existing National Grid East Claydon Substation to include six fields (Field SA51, SA52, SA53, SA57, SA58, SA59) to facilitate the Grid Connection Cable Corridor.

Design Stage 3

Solar photovoltaic development

4.1.28. The extent and layout of the solar photovoltaic development was refined during Design Stage 3. This refinement included changes that sought to avoid/minimise environmental effects and respond to stakeholder engagement and feedback from Phase Two Consultation.

Battery Energy Storage System

4.1.29. The Battery Energy Storage System was proposed to be in Field E23 in Parcel 3 and/or Fields D8/D9 in Parcel 2 as part of Design Stage 2. In response to feedback received during the Phase Two Consultation, Field

E23 was removed as an option for the location of the Battery Energy Storage System. The Battery Energy Storage System is now solely proposed to be located in Fields D8 and D9 in Parcel 2. This change was consulted on during a targeted consultation period between 21 May and 16 July 2025.

4.1.30. The siting zone of the Battery Energy Storage System within Field D8 and Field D9 was refined to account for the revised surface water flooding extents issued by the Environment Agency in January 2025. This involved discounting the area of medium and high risk surface water flooding adjacent to the south east of the fields from the proposed location of the Battery Energy Storage System.

Rosefield Substation

4.1.31. At Design Stage 3, the siting of the Rosefield Substation was proposed for either Field E11 or Field E23 in Parcel 3. Following feedback from the Phase Two Consultation, the Rosefield Substation is now proposed to be sited in Fields E11 and/or E20 in Parcel 3. This change in design (amongst others) was consulted on during the targeted consultation undertaken between 21 May and 16 July 2025.

4.1.32. The removal of Field E23 as a potential siting zone for the Rosefield Substation reduces the maximum possible length of the Grid Connection Cable Corridor between the Rosefield Substation and National Grid East Claydon Substation. Shorter distances have commercial and energy efficiency advantages and also minimise environmental effects and temporary disruption associated with construction.

5. Approach to the Environmental Impact Assessment

5.1. Environmental Impact Assessment process

5.1.1. Environmental Impact Assessment is a systematic process that examines the likely significant effects (beneficial or adverse) on the environment resulting from the construction, operation (including maintenance) and decommissioning of a proposed development. The process is shown in **Plate 5.1** below.

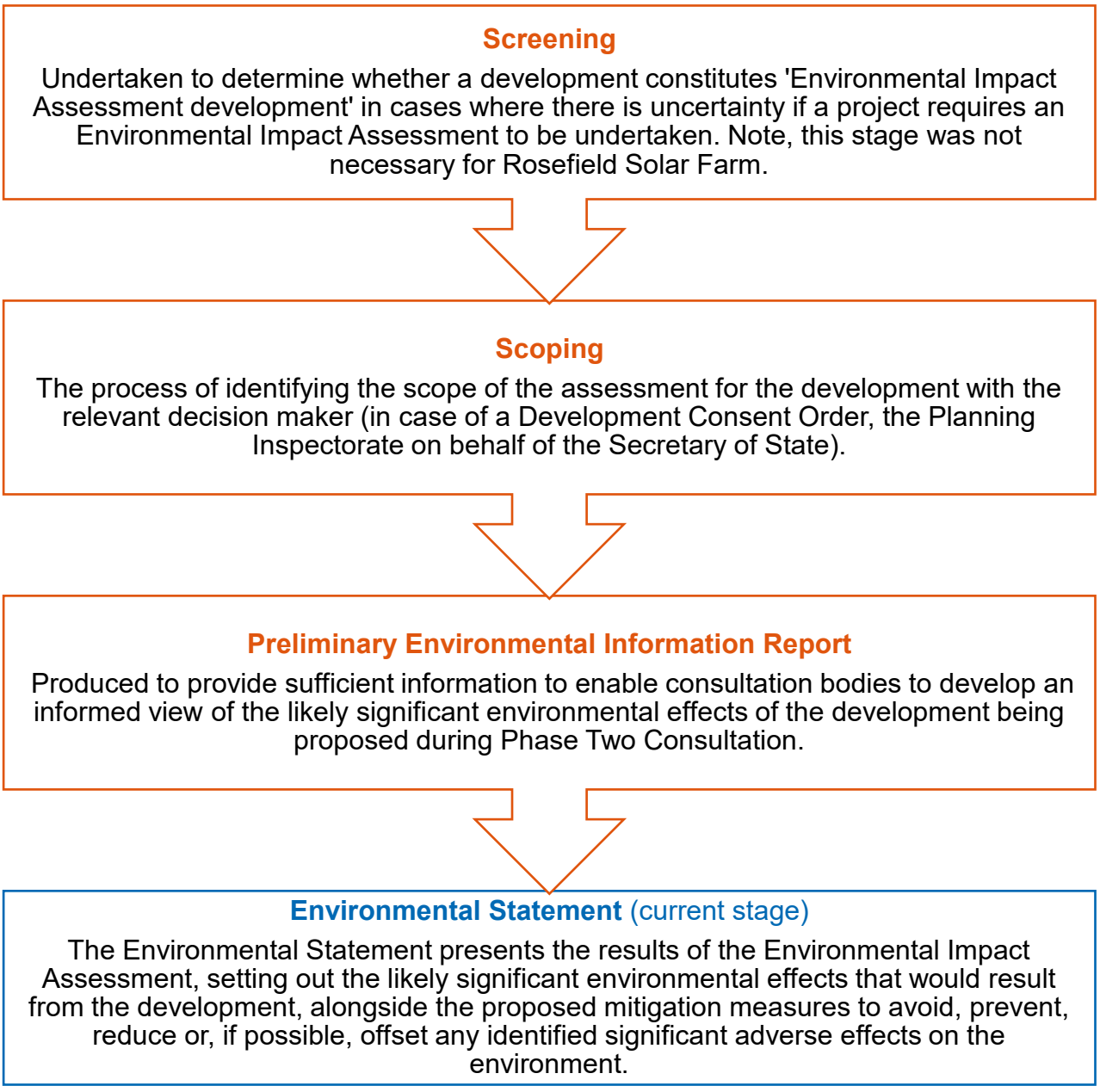


Plate 5.1 – Main stages of the Environmental Impact Assessment process

5.2. Objectives of the Environmental Impact Assessment

5.2.1. The Environmental Impact Assessment process aims to identify, assess, and mitigate the potential environmental effects of a proposed project before its approval and implementation. Its primary goals include:

- Set the relevant legal and planning policy framework;
- Document the consultation and engagement process that has informed the Environmental Impact Assessment;
- Outline any reasonable alternatives considered;
- Establish baseline environmental conditions at the Site and within the surrounding area;
- Identify, predict and assess the environmental effects associated with the proposed project;
- Identify, predict and qualitatively assess the cumulative effects of the proposed project, including those associated with other development(s);
- Identify suitable mitigation measures to avoid, prevent, reduce or, if possible, offset likely significant adverse effects on the environment and identify the likely significant effects that remain following the implementation of these measures; and
- Identify monitoring measures where likely remaining significant adverse effects are identified.

5.3. Scoping

5.3.1. An Environmental Impact Assessment Scoping Report was prepared by Rosefield Energyfarm Limited in respect of Rosefield Solar Farm and submitted to the Planning Inspectorate on 13 November 2023. A Scoping Opinion was adopted by the Secretary of State on 21 December 2023.

5.3.2. The aim of the scoping process is to agree on the approach, methodology and how to carry out the Environmental Impact Assessment while identifying the environmental factors to be considered within the Environmental Statement. It establishes the matters that will comprise the scope of the assessment. Furthermore, the scoping process helps to identify the main effects that a development is likely to have on the environment, taking into account responses from prescribed consultees.

5.3.3. The following list presents the environmental factors that have been assessed in the Environmental Statement, having full regard to and reflecting the Scoping Opinion:

- Air quality;
- Biodiversity;

- Climate;
- Cultural heritage;
- Landscape and visual;
- Land and groundwater;
- Soil;
- Noise and vibration;
- Population;
- Transport and access;
- Water; and
- Cumulative effects.

5.3.4. The Planning Inspectorate has agreed to scope out the following environmental factors from the Environmental Impact Assessment:

- **Glint and Glare** - Solar photovoltaic modules are designed to absorb light, minimising reflection due to their dark colour and anti-reflective coatings. Whilst the Planning Inspectorate has agreed that glint and glare can be scoped out of the Environmental Impact Assessment, a glint and glare assessment has been undertaken, as presented in **Environmental Statement Volume 4, Appendix 5.4: Glint and Glare Assessment [EN010158/APP/6.4]**.
- **Heat and Radiation** - Significant sources of heat or radiation during construction, operation (including maintenance), or decommissioning are not anticipated. Heat and radiation sources have been identified and this has influenced the design of Rosefield Solar Farm, for example, by including spacing of battery containers and locating high voltage cables underground.
- **Major Accidents and Disasters** - Safety regulations have been considered to prevent significant effects during all project phases. The potential impacts are still considered in the **Battery Energy Storage System Plume Assessment [EN010158/APP/7.13]** submitted in support of the Development Consent Order, with any relevant mitigation measures detailed in and secured by the **Outline Construction Environment Management Plan [EN010158/APP/7.2], Outline Operational Environment Management Plan [EN010158/APP/7.3]** and **Outline Battery Safety Management Plan [EN010158/APP/7.9]**.
- **Utilities** - A desk-based study of existing utilities has been conducted to inform the design of Rosefield Solar Farm. Measures to protect against interference with below ground utilities during construction have been detailed in and secured by the **Outline Construction Environment Management Plan [EN010158/APP/7.2]**, as well as

provisions included in the **Draft Development Consent Order [EN010158/APP/3.1]** aimed at providing protection for utilities (called "protective provisions").

- **Human Health** – Potential impacts related to human health (physical health, mental health and well-being) from Rosefield Solar Farm during construction, operation (including maintenance) and decommissioning have been considered in the following assessments, with relevant mitigation measures detailed in and secured by the **Outline Construction Environment Management Plan [EN010158/APP/7.2]**:
  - Air quality: Temporary effects on residents' respiratory health during construction and decommissioning are assessed in **Environmental Statement Volume 2, Chapter 6: Air Quality [EN010158/APP/6.2]**.
  - Landscape and visual: Potential impacts on health and well-being of residents and public right of way users, as well as on residential amenity, during construction and decommissioning, are covered in **Environmental Statement Volume 2, Chapter 10: Landscape and Visual [EN010158/APP/6.2]**.
  - Noise and vibration: Effects on residents' well-being during construction and decommissioning are covered in **Environmental Statement Volume 2, Chapter 13: Noise and Vibration [EN010158/APP/6.2]**.
  - Population: Positive mental and physical health effects for users of new paths and community areas during operation are discussed in **Environmental Statement Volume 2, Chapter 14: Population [EN010158/APP/6.2]**.
  - Traffic and transport: Health impacts from disruption, safety concerns, and changes in community access during construction and decommissioning are reviewed in **Environmental Statement Volume 2, Chapter 15: Transport and Access [EN010158/APP/6.2]**.
  - Glint and glare: Potential nuisance to nearby residents during operation is assessed in **Environmental Statement Volume 4, Appendix 5.4: Glint and Glare Assessment [EN010158/APP/6.4]**.

  ES Volume 4, Appendix 5.5: Health and Wellbeing Summary Statement [EN010158/APP/6.4] has been produced to bring together these human health related aspects in one document to aid the reader.
- **Material Assets and Waste** - Rosefield Solar Farm does not intend to remove substantial excavated materials, although some may be removed if contaminated. Relevant mitigation measures are detailed in

and secured by the **Outline Construction Environment Management Plan [EN010158/APP/7.2], Outline Operational Environment Management Plan [EN010158/APP/7.3], Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]** and **Outline Site Waste Management Plan** (which forms Appendix 1 to the **Outline Construction Environment Management Plan [EN010158/APP/7.2]**).

- **Electric, Magnetic, and Electromagnetic Fields** - Underground cabling for Rosefield Solar Farm is designed to minimise exposure to electric, magnetic and electromagnetic fields, as the cables will be buried and distanced from sensitive locations. Further detail is presented in **Environmental Statement Volume 4, Appendix 5.6: EMF Assessment (Electromagnetic Field Assessment) [EN010158/APP/6.4]**.

5.4. Preliminary Environmental Information Report

5.4.1. A Preliminary Environmental Information Report was prepared by Rosefield Energyfarm Limited and published as part of the Phase Two Consultation which took place from September to November 2024.

5.4.2. The Preliminary Environmental Information Report provided the preliminary findings of the environmental assessment undertaken during the design development of Rosefield Solar Farm. The Preliminary Environmental Information Report has been further developed following completion of the design work and environmental assessment and now constitutes the Environmental Statement, which this Non Technical Summary summarises.

5.5. Environmental Statement

5.5.1. The Environmental Statement presents the results of the Environmental Impact Assessment undertaken for Rosefield Solar Farm and sets out the likely significant environmental effects that would result from construction, operation (including maintenance) and/or the decommissioning, alongside the proposed mitigation measures to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects.

5.5.2. As part of ongoing assessments since the Preliminary Environmental Information Report was published, a new significant landscape and visual cumulative effect has been identified. This relates to how multiple projects together may impact the landscape and views in the area. Specifically this effect concerns the Local Character Area (9.2), North Buckinghamshire Way, and the Midshires Way. Further detail is presented in **ES Volume 2, Chapter 17: Cumulative Effects [EN010158/APP/6.2].**

5.6. Consultation and engagement

5.6.1. The consultation and engagement process during the Environmental Impact Assessment is essential for developing a comprehensive and proportionate Environmental Statement. It ensures that views from statutory and non-statutory consultees are considered, helping to prioritise issues with potential significant environmental effects and identify areas requiring further investigation. Continuous engagement allows the evolution of the project design, integrating mitigation measures to minimise adverse environmental effects and maximise environmental benefits.

5.6.2. The main stages of consultation were:

- **Phase one:** Early plans and proposals (28 September 2023 and 10 November 2023) – a non-statutory consultation on early plans and proposals for Rosefield Solar Farm;
- **Phase two:** Updated plans and proposals (18 September 2024 to 14 November 2024) – a statutory consultation on updated proposals for Rosefield Solar Farm, carried out in accordance with a Statement of Community Consultation and relevant legislative requirements; and
- **Targeted consultation:** a targeted consultation during summer 2025 on two proposed changes to the Site following Phase Two Consultation.

5.6.3. Early and targeted engagement with stakeholders such as local councils, government agencies, and environmental organisations has influenced the design of Rosefield Solar Farm and the Environmental Impact Assessment. The consultation process has included entities such as Buckinghamshire Council, Historic England and Natural England, among others. A **Consultation Report [EN010158/APP/5.1]**, which provides details of the consultation undertaken by Rosefield Energyfarm Limited, is submitted in support of the Development Consent Order Application.

5.7. Environmental Impact Assessment methodology

5.7.1. The Environmental Impact Assessment process begins by assessing the existing conditions (“baseline”) of an area affected by a proposed development and predicts the potential changes (“impacts”) during construction, operation (including maintenance) and decommissioning. In assessing these impacts, the Environmental Impact Assessment considers both the scale of each impact and who or what might experience the impact, such as people, animals, landscapes, heritage sites, groundwater, or soil. The value/importance/sensitivity of who or what might experience the impact is combined with the scale of the impact (“magnitude”) to reach a conclusion about the overall environmental "effect" (the result of a change or impact caused by the proposed

development on who or what might experience the impact) and its "significance" (the importance or scale of the effect on who or what might experience the impact), focusing on identifying significant beneficial or adverse effects.

5.7.2. Mitigation measures are considered following a mitigation hierarchy aiming first to avoid, then to reduce, and/or lastly to offset adverse effects. Some mitigation measures are an integral part of the design of Rosefield Solar Farm and have been built in from an early stage with a view to avoid or minimise environmental effects. Other mitigation measures are measures that are required to further reduce environmental effects, such as measures set out in environmental management plans. The remaining effects after the implementation of mitigation measures, are then assessed for significance.

5.7.3. The Environmental Impact Assessment also evaluates intra-project cumulative effects (multiple effects from Rosefield Solar Farm on the same feature) and inter-project cumulative effects (effects from Rosefield Solar Farm in combination with other developments).

5.7.4. The Environmental Impact Assessment adopts a flexible approach, establishing maximum parameters for Rosefield Solar Farm to allow flexibility for technological advancements at the time of construction. By defining these maximum parameters (for example heights, massing, or noise levels), the assessment evaluates the worst-case scenario to ensure a robust analysis of likely significant effects.

6. Findings of the Environmental Statement

6.1. Air Quality

What measures have been incorporated into the design of Rosefield Solar Farm to reduce dust and emissions?

6.1.1. Mitigation measures have been established based on the Institute of Air Quality Management 'Guidance of the Assessment of Dust from Demolition and Construction v2.2' and incorporated into the design of Rosefield Solar Farm to minimise the risk of dust and particulate matter impacts.

6.1.2. Mitigation measures relevant to air quality comprise:

- Rosefield Substation, BESS, Collector Compounds, Standalone Inverter, Transformer and Switchgear and Inverter, Transformer Stations will be offset a minimum of 50 metres from all residential properties.
- A minimum 30 metre offset from all perimeter fencing surrounding the solar photovoltaic development to statutorily and locally designated wildlife sites;
- A minimum 30 metre offset from all perimeter fencing surrounding the solar photovoltaic development to ancient woodland;
- A minimum 20 metre offset from all perimeter fencing surrounding the solar photovoltaic development to all other woodlands and High Speed 2 planting;
- A minimum 10 metre offset from all perimeter fencing surrounding the solar photovoltaic development to existing hedgerows, except where a hedgerow crossing is required for access tracks and/or cable routes;
- A minimum 10 metre offset from all perimeter fencing surrounding the solar photovoltaic development to existing public rights of way;
- Offsets from tree Root Protection Areas to the principal components of Rosefield Solar Farm will be applied as far as reasonably practicable; and
- Construction traffic routes are planned to avoid passing sensitive villages and residential properties, where possible.

Would dust and emissions generated during construction and decommissioning be a problem?

6.1.3. The dust risk assessment and the assessment of construction and decommissioning equipment have identified Rosefield Solar Farm to have the potential to affect humans and ecological sites during the construction

and decommissioning phases. Therefore, site-specific mitigation measures have been proposed, such as erecting solid screens or barriers around dusty activities or the Order Limits and ensuring that all vehicle engines are switched off when stationary.

6.1.4. The implementation of dust control measures and equipment emission controls can greatly reduce any adverse effects. Mitigation measures are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]** and the **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.2]**. Dust effects during the construction and decommissioning phases are therefore expected to be **not significant**.

Would road traffic during construction, operation (including maintenance) and decommissioning phases be a problem?

6.1.5. The impacts of road traffic emissions associated with the construction of Rosefield Solar Farm have the potential to affect humans and ecological sites. Impacts on local air quality as a result of road traffic emissions are expected to be confined to this timeframe and therefore be temporary. The quality of the air at the Site is generally good based on the review of Buckinghamshire Council air quality monitoring data and there is not a designated Air Quality Management Area declared close to Rosefield Solar Farm. Any effects will be controlled through the implementation of mitigation measures, which are detailed in and secured by the **Outline Construction Traffic Management Plan [EN010158/APP/7.5]**. Therefore, air quality effects as a result of road traffic emissions during construction are expected to be **not significant**.

6.1.6. For the operation (including maintenance) phase, best practice mitigation measures are detailed in and secured by the **Outline Operational Environmental Management Plan [EN010158/APP/7.3]**, which will reduce any effects on air quality. Effects on humans and ecological sites as a result of road traffic emissions during operation (including maintenance) are therefore considered to be **not significant**.

6.1.7. Decommissioning is expected to generate lower effects to those anticipated during construction and therefore the mitigation measures proposed during the construction phase will be appropriate for the decommissioning phase, which are detailed in and secured by the **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**. Air quality effects as a result of road traffic emissions during decommissioning are expected to be **not significant**.

What mitigation measures will be implemented?

6.1.8. Dust emissions during construction and decommissioning phases can be effectively controlled by appropriate dust control measures and any adverse effects can be greatly reduced or eliminated.

6.1.9. Mitigation measures have been established based on the Institute of Air Quality Management 'Guidance of the Assessment of Dust from Demolition and Construction v2.2' and will be used to control potential dust and particulate matter emissions during the construction and decommissioning phases. Such mitigation measures are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, the **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]** and the **Outline Construction Traffic Management Plan [EN010158/APP/7.5]**.

6.2. Biodiversity

Will Rosefield Solar Farm affect designated sites and habitats and what mitigation measures will be implemented?

Designated sites and ancient woodland

6.2.1. During all phases, there will be no direct land take from any statutory designated sites for nature conservation or ancient woodland sites; therefore, these sites are not anticipated to be affected.

6.2.2. The mitigation detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** includes a minimum 30 metre offset from solar photovoltaic modules and associated infrastructure from designated sites and ancient woodland. In order to access areas proposed for landscaping and environmental habitat creation in Parcel 1a, an existing track, located within Romer Wood and Greatsea Wood (ancient woodland within the Order Limits), currently used by maintenance traffic associated with High Speed 2 landscape planting, would be used to allow light vehicles, such as tractors, to access this area for habitat creation and maintenance works. No loss of ancient woodland would be required, as existing access tracks would be utilised and no built development is proposed along the access track.

6.2.3. In order to further protect designated sites and ancient woodland, several measures will be in place, such as demarcation fencing and signage and measures to prevent pollution events occurring. These measures and others are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline**

Decommissioning Environmental Management Plan [EN010158/APP/7.4]. During all phases, there is not anticipated to be an adverse effect on the integrity of designated sites or ancient woodland, and therefore effects are considered to be **not significant**.

Hedgerows and trees

6.2.4. Hedgerows and hedgerow trees would be protected by a minimum 10 metre offset either side[2] from solar photovoltaic modules and associated infrastructure, except for sections which would need to be removed for the installation of underground cables and access. After construction, these hedgerows would be re-instated or planted elsewhere within the Site. New hedgerow and tree planting is also proposed, along with improvement to existing hedgerows which includes hedgerows that will be planted ahead of construction works commencing. New tree and hedgerow planting proposals are detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**.

6.2.5. In order to further protect hedgerows and hedgerow trees, several measures will be in place, such as fencing and signage and measures to prevent pollution events occurring. These measures and others are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.6. The remaining effect during construction and decommissioning is predicted to be **adverse**, **short-term** and **temporary** whilst reinstated sections of hedgerows become re-established, which is considered to be **not significant**.

6.2.7. During operation (including maintenance), there is not anticipated to be an adverse effect to ancient or veteran trees, and therefore effects are considered to be **not significant**.

Individual ancient and veteran trees

6.2.8. Ancient and veteran trees would be protected by an offset from solar photovoltaic modules and associated infrastructure and any works will avoid tree Root Protection Areas for all ancient and veteran trees, as far

[2] Unless located on an Order Limit boundary, in which case the buffer will only be present on the side within the Order Limits.

as reasonably practicable. There will be no direct loss of any ancient or veteran trees.

6.2.9. In order to further protect ancient and veteran trees, several measures will be in place, such as fencing and signage and measures to prevent pollution events occurring. These measures and others are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.10. During all phases, there is not anticipated to be an adverse effect to ancient or veteran trees, and therefore effects are considered to be **not significant**.

Individual trees and lines of trees

6.2.11. Individual trees and lines of trees would be protected by a minimum offset from solar photovoltaic modules and associated infrastructure to tree Root Protection Areas for all individual trees and lines of trees, where possible. However, up to 23 trees/tree lines will require removal to facilitate cable routes and access routes. 435 new trees would be planted in hedgerows across the Site.

6.2.12. In order to further protect individual trees and lines of trees, several measures will be in place, such as fencing and signage and measures to prevent pollution events occurring. These measures and others are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.13. The remaining effect to individual trees and lines of trees during construction and decommissioning is predicted to be **adverse**, **long-term** and **permanent** which is considered to be **not significant**.

6.2.14. During operation (including maintenance), there is not anticipated to be an adverse effect to individual trees and lines of trees, and therefore effects are considered to be **not significant**.

Cereal and non-cereal crops

6.2.15. Mitigation for habitat modification resulting in the loss of cereal and non-cereal crops habitat is detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, which outlines

measures such as conversion of arable habitat to habitat of higher biodiversity value including species-rich grassland, scrub, ponds, hedgerows and woodland, resulting in an increased diversity and abundance of invertebrate species to improve the foraging value of the areas for bats and farmland bird species.

6.2.16. During all phases, there is not anticipated to be an adverse effect on cereal and non-cereal crops habitat, and therefore effects are considered to be **not significant**.

Lowland mixed deciduous woodland and other woodland

6.2.17. During all phases, no woodland habitat is anticipated to be affected.

6.2.18. The mitigation secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** includes a minimum 20 metre offset from solar photovoltaic modules and associated infrastructure from all lowland mixed deciduous woodland and other woodland habitat. As a result, there will be no direct land take from woodland located within or adjacent to the Order Limits.

6.2.19. In order to further protect lowland mixed deciduous woodland and other woodland habitat, several measures will be in place, such as fencing and signage and measures to prevent pollution events occurring. These measures and others are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**. Approximately 9ha of new woodland planting is also proposed, which includes woodland that will be planted ahead of construction works commencing. New woodland planting proposals are detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** and shown on **Appendix 2: Landscape and Ecological Mitigation and Enhancements** of the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**.

6.2.20. During all phases, there is not anticipated to be an adverse effect on lowland mixed deciduous woodland and other woodland, and therefore effects are considered to be **not significant**.

Arable field margins

6.2.21. The mitigation secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** has aimed to retain arable field margins where possible. Mitigation measures to protect arable field

margins from pollution are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**. Creation of new arable field margins and management of new and retained arable field margins is detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**.

6.2.22. During all phases, there is not anticipated to be an adverse effect on arable field margins, and therefore effects are considered to be **not significant**.

Ponds, watercourses and ditches

6.2.23. All ponds, watercourses and ditches would be retained and protected by a minimum 10 metre offset from solar photovoltaic modules and associated infrastructure. Up to 12 ponds will either be re-instated and/or created, providing new habitat to support a range of species, such as providing additional breeding habitat for great crested newt and other amphibians and additional foraging habitat for bats. This is detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** and shown on **Appendix 2: Landscape and Ecological Mitigation and Enhancements** of the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**. Mitigation measures to protect ponds, watercourses and ditches from pollution are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.24. During all phases, there is not anticipated to be an adverse effect on ponds, watercourses and ditches, and therefore effects are considered to be **not significant**.

Mixed scrub, bramble scrub, other neutral grassland and modified grassland

6.2.25. The majority of grassland within the Order Limits is classified as modified grassland, with a few field margins and a few areas of other neutral grassland. Although none were identified as species-rich or of particular ecological importance, small areas of scrub habitat were also recorded across the Site. Modified grassland habitat will be converted to species-rich grassland, scrub, ponds, hedgerows, arable field margins and

woodland, resulting in an increased diversity and abundance of invertebrate species to improve the foraging value of the areas for bats and farmland bird species. This modification is detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6].** Mitigation measures to protect retained grassland and scrub habitat from pollution are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.26. Small amounts of grassland and scrub habitat will be permanently lost to facilitate solar photovoltaic modules and associated infrastructure and temporarily lost for the installation of cable routes and temporary Construction Compounds.

6.2.27. During all phases, there is not anticipated to be an adverse effect on mixed scrub, bramble scrub, other neutral grassland and modified grassland, and therefore effects are considered to be **not significant**.

Would Rosefield Solar Farm affect protected and/or notable species and what mitigation measures will be implemented?

Black hairstreak and brown hairstreak butterfly

6.2.28. The food source for black and brown hairstreak caterpillars, Blackthorn was recorded abundantly across the Site within hedgerows and woodland areas. The woodlands and hedgerows in the area make a significant contribution towards the maintenance of the local population of black hairstreak and brown hairstreak butterfly, which are considered important in a national context.

6.2.29. The mitigation detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** includes a minimum 20 metre offset from solar photovoltaic modules and associated infrastructure from all woodland. There will be no direct land take from woodland habitats within or located adjacent to the Order Limits; therefore, there will be no loss of Blackthorn shrubs from these areas of woodland. Hedgerows would be protected by a minimum 10 metre offset either side[3] from solar photovoltaic modules and associated infrastructure; however, sections of hedgerow would need to be removed for the installation of

[3] Unless located on an Order Limit boundary, in which case the buffer will only be present on the side within the Order Limits.

cables and access which has the potential to result in a minor loss of Blackthorn shrubs for hairstreak butterflies.

6.2.30. Pre-construction surveys of hedgerow sections that will require removal will be undertaken during the winter months to assess for the presence of black hairstreak and brown hairstreak eggs. Blackthorn that is found to contain black hairstreak or brown hairstreak eggs would be translocated to an appropriate location within the Order Limits to enable the eggs to survive the winter and hatch the following spring. After construction, these hedgerows would be re-instated or planted elsewhere within the Site. New hedgerow, scrub and woodland planting are also proposed, along with improvement to existing hedgerows which includes hedgerow, scrub and woodland that will be planted ahead of construction works commencing. New woodland, scrub and hedgerow planting proposals are detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**.

6.2.31. Mitigation measures to protect hedgerows and woodland habitat used by black and brown hairstreak butterflies are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.32. The remaining effect during construction and decommissioning is predicted to be **adverse**, **short-term** and **temporary**, which is considered to be **not significant**.

6.2.33. During operation (including maintenance), there is not anticipated to be an adverse effect to black hairstreak and brown hairstreak butterfly, which is considered to be **not significant**.

Terrestrial invertebrates (excluding black hairstreak and brown hairstreak butterfly)

6.2.34. The majority of the habitats present within the Order Limits were considered likely to support common invertebrate species, typical of arable field margins, hedgerows, woodland and scrub and grassland habitats. However, habitats located within and adjacent to the Order Limits (notably woodland and hedgerow habitat) have potential to support protected or otherwise notable invertebrates.

6.2.35. The majority of habitat within the Order Limits that may support notable invertebrates (e.g. woodland and deadwood) will be retained in their entirety. However, sections of hedgerow, grassland, scrub and arable field margin habitat would need to be removed for the installation of cables,

internal roads and highways access including passing bays and visibility splays, which has the potential to result in loss habitat suitable to support terrestrial invertebrates.

6.2.36. Mitigation for habitat modification is detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** which outlines measures such as conversion of modified grassland habitat to species-rich grassland, scrub, ponds, hedgerows, arable field margins and woodland, resulting in an increased diversity and abundance of habitats to support invertebrate species. Mitigation measures to protect retained and newly created habitat suitable to support terrestrial invertebrates are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.37. The remaining effect during construction and decommissioning is predicted to be **adverse**, **short-term** and **temporary**, which is considered to be **not significant**.

6.2.38. During operation (including maintenance), habitat creation proposals would improve the suitability of the Site for terrestrial invertebrates at the operation (including maintenance) phase once established, the effect of which is considered to be **not significant**.

Great crested newts

6.2.39. Ponds within and adjacent to the Order Limits are confirmed to support great crested newts, with the areas of woodland, grassland margins and hedgerows within the Order Limits considered suitable to provide foraging, refuge and hibernation opportunities.

6.2.40. All ponds and ditches would be retained and protected by a minimum 10 metre offset from solar photovoltaic modules and associated infrastructure, resulting in no direct loss of great crested newts breeding habitat. In addition, the re-instatement and creation of new ponds across the Site is proposed which would increase the suitable breeding habitat, as detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**.

6.2.41. Terrestrial habitat suitable for great crested newts would be temporarily impacted during the cable works, Site access location works and Construction Compound works. The impacts would be short term and limited to the duration of the construction phase. As the construction is phased, impacts would only occur within discrete areas within the Order

Limits at any one time. Permanent terrestrial habitat loss would occur as a result of access and permanent infrastructure works. However, the mitigation detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** includes for the creation and improvement of species-rich grassland, scrub, hedgerows, arable field margins and woodland, resulting in an increase of habitat suitable to support great crested newts across the Site.

6.2.42. Mitigation measures to protect habitats suitable to support great crested newts are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.43. Works with the potential to affect great crested newts would be carried out either under the Buckinghamshire District Level Licensing Scheme through NatureSpace Partnership or under a European Protected Species licence from Natural England.

6.2.44. During all phases, there is not anticipated to be an adverse effect on great crested newts, and therefore effects are considered to be **not significant**.

Reptiles

6.2.45. The majority of habitat within the Order Limits is considered to be of low suitability for reptile species. Limited areas of habitat suitable for reptiles would be temporarily impacted during the cable works, Site access location works and Construction Compound works. The impacts would be short term and limited to the duration of the construction phase. As the construction is phased, impacts would only occur within discrete areas within the Order Limits at any one time. Permanent habitat loss would occur as a result of access and permanent infrastructure works. Vegetation clearance or ground clearance proposed within areas of habitat suitable for reptiles would be subject to careful working methods to avoid harming reptiles and would allow reptiles to disperse into adjacent habitat.

6.2.46. The mitigation detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** includes for the creation and improvement of species-rich grassland, scrub, hedgerows, arable field margins and woodland, resulting in an increase of habitat suitable to support reptiles across the Site.

6.2.47. Mitigation measures to protect habitats suitable to support reptiles are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan**

[EN010158/APP/7.7], **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.48. During all phases, there is not anticipated to be an adverse effect on reptiles, and therefore effects are considered to be **not significant**.

Ground nesting birds

6.2.49. The Site is important for ground nesting birds, including skylark, yellow wagtail and grey partridge. Ground nesting birds could be adversely affected by habitat loss and disturbance during construction and decommissioning. However, large open areas are to be retained and enhanced for ground nesting birds. The habitat creation and enhancement proposals are anticipated to improve ground nesting bird habitat and increase the amount of foraging habitat and a source of winter food (seeds). It is anticipated that birds would rapidly be able to use the newly created and enhanced habitat. Appropriate pre-construction and pre-decommissioning nesting bird surveys will be undertaken. Vegetation clearance proposed within areas of habitat suitable for ground nesting birds would be subject to a precautionary method of working to avoid harm.

6.2.50. Mitigation measures to protect habitats suitable to support ground nesting birds are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.51. The remaining effect during construction and decommissioning is predicted to be **adverse**, **short-term** and **temporary**, which is considered to be **not significant**.

6.2.52. Once habitats are fully established during the operation (including maintenance) phase, there is anticipated to be a **long-term**, **beneficial effect** for ground nesting birds, which is considered to be **significant**.

Non-ground nesting birds

6.2.53. The Site is important for a range of non-ground nesting birds including tree sparrow, yellowhammer and grasshopper warbler. The mitigation includes a minimum offset from solar photovoltaic modules and associated infrastructure from hedgerows, woodland and trees. However, non-ground nesting birds could be adversely affected by habitat loss and disturbance

during construction and decommissioning. The mitigation includes for the creation and/or improvement of species-rich grassland, scrub, hedgerows, arable field margins and woodland, resulting in an increase of habitat suitable to support non-ground nesting bird species across the Site. This is detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**. Appropriate pre-construction and pre-decommissioning non-ground nesting bird surveys will be undertaken. Vegetation clearance proposed within areas of habitat suitable for non-ground nesting birds would be subject to a precautionary method of working to avoid harm.

6.2.54. Mitigation measures to protect habitats suitable to support non-ground nesting birds are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.55. The remaining effect during construction and decommissioning is predicted to be **adverse**, **short-term** and **temporary**, which is considered to be **not significant**.

6.2.56. During operation (including maintenance), habitat creation proposals would improve the suitability of the Site for non-ground nesting birds once established, the effect of which is considered to be **not significant**.

Barn owl, red kite, hobby and peregrine falcon (listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended))

6.2.57. Barn owl, red kite, hobby and peregrine falcon were recorded during the breeding bird surveys holding breeding territories within and adjacent to the Order Limits. These species could be disturbed by construction and decommissioning works; however, surveys would be carried out of potential nest sites prior to works and mitigation would be undertaken as appropriate to avoid disturbance. The mitigation includes for the creation and/or improvement of species-rich grassland, scrub, hedgerows, arable field margins and woodland, resulting in an increase of suitable foraging habitat for barn owl, red kite, hobby and peregrine falcon across the Site. This is detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**.

6.2.58. Mitigation measures to protect habitats suitable to support barn owl, red kite, hobby and peregrine falcon are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management**

Plan [EN010158/APP/7.6], **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.59. During all phases, there is not anticipated to be an adverse effect on barn owl, red kite, hobby and peregrine falcon, and therefore effects are considered to be **not significant**.

Wintering birds

6.2.60. The Site is important for wintering birds, which could be adversely affected by habitat loss and disturbance during construction and decommissioning. However, the mitigation which includes the creation and/or improvement of species-rich grassland, scrub, hedgerows, arable field margins and woodland, will result in an increase of suitable foraging habitat for wintering birds across the Site. These measures are detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**. .

6.2.61. Mitigation measures to protect habitats suitable to support wintering birds are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.62. The remaining effect during construction and decommissioning is predicted to be **adverse**, **short-term** and **temporary**, which is considered to be **not significant**.

6.2.63. During operation (including maintenance), there is not anticipated to be an adverse effect on wintering birds, and therefore effects are considered to be **not significant**.

Bats (foraging, commuting and roosting)

6.2.64. The Site supports several bat species. Parcel 1, 1a and 2 and the Interconnecting Cable Corridors between these parcels are known to be important areas for commuting and foraging Bechstein's and other bat species.

6.2.65. There is limited research and no common consensus on the long-term impacts of solar farms on bats. However, some studies suggest that there are potential impacts following the installation of the solar photovoltaic modules that had an adverse effect on the abundance of some bat species with bats being displaced.

6.2.66. Construction activities have the potential to result in the disturbance, fragmentation, loss and/or degradation of features of importance for roosting, foraging and/or commuting bats, as a result of noise, lighting, removal and/or the degradation in quality of retained habitat features. To minimise the risk to roosting bats, trees with potential bat roost features have been avoided where possible. The buffer zones from hedgerows, field margins, watercourses and woodland edges to any built development would protect bat foraging and commuting corridors.

6.2.67. Noise and vibration from construction activity is not considered likely to disturb bats due to a minimum buffer zone from any woodlands, hedgerows or trees; and because higher frequency noise quickly decreases over distance.

6.2.68. Lighting would conform to best practice guidelines with respect to minimising light spill into adjacent habitats to prevent disturbance to bats and other nocturnal animals. Throughout construction, operation (including maintenance) and decommissioning, the use of motion detection or manually operated lighting would be used to avoid constant lighting.

6.2.69. The majority of hedgerows within the Order Limits will be retained and protected by buffer zones of either 10 metres or 15 metres on both sides of the hedgerow[4]. For 'key' hedgerows where sections of 10 metres or more in length are proposed to be removed, mitigation would be required to maintain linear connectivity for foraging/commuting bats. This would involve the temporary installation of structures in hedgerow gaps mimicking the hedgerow which bats could use for echolocation when commuting.

6.2.70. All woodland blocks will be retained and protected by a minimum 20 metre offset from any works. This will ensure the retention and protection of almost all of the current bat woodland roost resource. In addition, the majority of trees that have been identified with bat roost potential will be protected by a buffer and demarcation fencing, as detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**.

6.2.71. Up to 23 trees/tree lines located within hedgerows may need to be removed to facilitate cable routes and access. These trees would be surveyed prior to impact to determine presence/or likely absence of a roost. If a roost is identified, in the first instance the design of Rosefield Solar Farm would be amended to ensure retention and protection of the tree and roost with an appropriate buffer. If this is not possible, depending on the roost type and species using the roost, loss of a confirmed bat roost

[4] Unless located on an Order Limit boundary, in which case the buffer will only be present on the side within the Order Limits.

would be mitigated under a European Protected Species licence from Natural England.

6.2.72. Construction activities will also result in some wider habitat loss, both permanent, in relation to the Rosefield Substation, Collector Compounds and Internal access tracks; and temporary, such as that occurring as a result of Construction Compounds or the undergrounding of cables. In addition, within arable and modified grassland fields, habitats will be modified by the installation of solar panels and/or degraded through damage from plant movement. Rosefield Solar Farm has been designed to ensure the retention, protection and improvement of almost all hedgerows and field margins within the Order Limits, ensuring that the most valuable aspects of these areas are protected and remain available to foraging and commuting bats. Mitigation measures for Rosefield Solar Farm will see the creation of a range of new habitats, as well as the improvement of existing, retained habitats. This includes 88ha of species-rich grassland and scrub creation in targeted bat and bird mitigation areas, creation of new hedgerows and the improvement and/or reinforcement of existing hedgerow, increasing the amount of hedgerows across the Site. In addition, pond, woodland and scrub creation is proposed. Together, these measures will increase invertebrate diversity and abundance, increasing foraging resources for bats and reinforcing the existing network of commuting routes for bats within the Order Limits.

6.2.73. Measures to avoid harm to bats during the construction and decommissioning phases are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.74. The mitigation measures are considered to be effective in minimising the construction and decommissioning activities impacts on Bechstein's bat, barbastelle and other bat species. The remaining effect of construction activities for bats is therefore assessed as being **adverse**, **short-term** and **temporary** and is considered to be **not significant**.

6.2.75. The installation of solar photovoltaic modules will result in the modification of habitats within the Order Limits during the operation (including maintenance) phase which may adversely impact bat foraging and/or commuting behaviour through reductions in habitat quality or habitat fragmentation. The layout of solar photovoltaic modules has been designed in three distinct blocks with good connectivity retained and protected between and around these areas. In addition, the solar photovoltaic module layout does not completely surround areas of woodland ensuring that, should the presence of solar photovoltaic modules on one side of a woodland adversely impact the use of this area

by bat species, alternative routes into and out of key areas of woodland are retained, enabling continued use. In addition, the mitigation measures will see the creation of a range of new habitats, as well as the improvement of existing, retained habitats that will increase the value of the Site for foraging and commuting bats and reduce habitat fragmentation. Noise from the Battery Energy Storage System and inverters during operation is not considered likely to disturb bats due to a minimum buffer zone from any woodlands, hedgerows or trees; and because higher frequency noise quickly decreases over distance. In addition to the natural attenuation of high-frequency sounds, the Battery Energy Storage System and Collector Compounds will be surrounded by 4-metre-high acoustic fencing, acting as a barrier to at least a proportion of high-frequency noise which can be more easily blocked than low-frequency sounds as it does not diffract or bend over barriers.

6.2.76. Measures to avoid harm to bats during the operation (including maintenance) phase are detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** and **Outline Operation Environmental Management Plan [EN010158/APP/7.3]**.

6.2.77. Given the isolated nature of the Bernwood population of Bechstein's bat, it is considered that the habitat modification resulting from solar photovoltaic module placement may have the potential to result in an adverse impact on Bechstein's bat. Therefore, with due consideration to the status of the Bernwood Bechstein's bat population, the remaining effects of the operation (including maintenance) of Rosefield Solar Farm are assessed as potentially being **adverse**, **long-term** and **permanent** for the duration of the operation (including maintenance) phase and therefore potentially **significant** at the **District** level.

6.2.78. It is considered that barbastelle bats and other bat species may be subject to fewer impacts from Rosefield Solar Farm than Bechstein's bats. Therefore, while effects from the operation (including maintenance) of Rosefield Solar Farm on barbastelle bat and other bat species are assessed as being potentially **adverse**, **long-term** and **permanent**, these are considered to be **not significant**.

Otter

6.2.79. Otter resting sites, including a single holt and couch, have been recorded as present along the Boundary of the Order Limits along Claydon Brook; however, these would be avoided by works, with a minimum buffer imposed of 10 metres from ditches, ponds and ordinary watercourses and a minimum 20 metre offset from Claydon Brook in Fields E20, E11, E10 and north section of Field E21. Otters could be disturbed by construction and decommissioning works; however, surveys would be carried prior to

works commencing and mitigation would be undertaken as appropriate to avoid disturbance.

6.2.80. Measures to avoid harm to otters and their resting sites are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.81. The mitigation includes for the creation and/or improvement of ponds and woodland, resulting in an increase of suitable habitat for otter across the Site. This is detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**.

6.2.82. During all phases, there is not anticipated to be an adverse effect on otters, and therefore effects are considered to be **not significant**.

Badger

6.2.83. Badger setts were recorded abundantly across the Order Limits within the Site; however, these would be avoided by works, with a 30 metre minimum buffer imposed from any main badger setts. Badgers could be disturbed by construction and decommissioning works; however, surveys would be carried out prior to works commencing and mitigation would be undertaken as appropriate to avoid disturbance.

6.2.84. Measures to avoid harm to badgers and their setts are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.2.85. The mitigation also includes for the creation and/or improvement of species-rich grassland, scrub, hedgerows, arable field margins and woodland, resulting in an increase of habitat suitable to support badger across the Site. Field margins will remain as open corridors for animals to disperse and mammal gates and clearance gaps under fences will allow animals, such as badgers, to fully access areas under solar photovoltaic modules for foraging, as secured in the **Design Commitments [EN010158/APP/5.9]**.

6.2.86. During all phases, there is not anticipated to be an adverse effect on badgers, and therefore effects are considered to be **not significant**.

6.3. Climate

Would greenhouse gas emissions be affected by Rosefield Solar Farm during construction, operation (including maintenance) and decommissioning?

6.3.1. The global climate is highly sensitive to greenhouse gas emissions, and Rosefield Solar Farm is expected to provide greenhouse gas savings through the generation and provision of low carbon electricity to the national grid, which may otherwise have been generated by processes with higher carbon intensities, such as generation from fossil fuels.

6.3.2. While Rosefield Solar Farm will produce some greenhouse gas emissions throughout its lifecycle (from construction, operational maintenance and repair, and decommissioning), a whole lifecycle greenhouse gas assessment has been carried out in order to assess the net greenhouse gas impact. This assessment considers the potential emissions caused by Rosefield Solar Farm against the potential emissions savings by the renewable energy generated. The net saving of the Proposed Development is over 3 million tonnes of carbon dioxide equivalent across its lifetime.

What mitigation measures will be implemented?

6.3.3. The design of Rosefield Solar Farm includes mitigation measures to minimise the use of concrete, steel, aggregates, and other construction materials, as detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**. Furthermore, any and all vegetation cleared for Rosefield Solar Farm will be compensated by a planting scheme that equals or exceeds the current levels of vegetation, as detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**.

6.3.4. Other mitigation measures include the responsible sourcing of materials, segregating waste to be re-used and recycled where possible, and measures to decrease fuel use by maximising efficiency. Such measures are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Operational Environmental Management Plan [EN010158/APP/7.3]**, **Outline Construction Traffic Management Plan [EN010158/APP/7.5]** and **Outline Employment, Skills and Supply Chain Plan [EN010158/APP/7.14]**.

6.3.5. Since the nature of Rosefield Solar Farm is to have a beneficial positive impact in terms of greenhouse gas emissions, the mitigation measures implemented are intended to maximise this beneficial impact.

What are the likely significant effects for climate?

6.3.6. Over its lifetime, Rosefield Solar Farm is expected to save over 3 million tonnes of carbon dioxide equivalent. It is expected that it will take 11 years to offset the greenhouse gases produced during construction, operation (including maintenance) and decommissioning, with all greenhouse gas savings beyond that point providing a net benefit. Rosefield Solar Farm is therefore considered to have a **significant beneficial effect** with regards to greenhouse gas emissions.

6.4. Cultural heritage

Would designated and non-designated heritage assets be affected by Rosefield Solar Farm during the construction, operation (including maintenance) and decommissioning phases?

6.4.1. Impacts to designated heritage assets (such as scheduled monuments, listed buildings, registered parks and gardens and conservation areas) are expected during the construction and operation (including maintenance) phases due to changes in their settings, including temporary loss of tranquillity during construction and partial loss of surrounding agricultural context during operation.

6.4.2. Physical impacts could occur to non-designated heritage assets, including potential archaeological remains dating from the Iron Age onwards during the construction, operation (including maintenance) and decommissioning phases. There will also be an impact to Catherine Farm, which is a locally listed building, as a result of change within its setting.

What mitigation measures will be implemented?

6.4.3. The layout has been designed to minimise solar photovoltaic modules around Botolph Claydon and Knowl Hill to reduce the setting impact on the listed buildings within Middle Claydon and Botolph Claydon Conservation Areas and upon Claydon Registered Park and Garden. The historic landscape pattern will be largely preserved by Rosefield Solar Farm.

6.4.4. Mitigation will include archaeological excavation and monitoring and recording, where archaeological remains would not require preservation in situ. It will also include use of concrete foundations for solar photovoltaic modules in areas of sensitive archaeological remains.

6.4.5. Mitigation measures to protect the physical remains of in-situ archaeological remains are also detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Operation Environmental Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]** and include the installation of

and maintenance of fencing round assets during construction works. Toolbox talks to inform site contractors of the procedure to follow in case of archaeological remains being exposed would also be undertaken.

What are the likely significant effects for cultural heritage?

6.4.6. With mitigation in place, no likely significant effects are anticipated regarding the physical impact on heritage assets. A significant effect would occur to Pond Farmhouse (Grade II listed building) during operation (including maintenance) as a result of changes within its setting. This effect would be fully reversed following decommissioning, but are considered to be **significant**.

6.4.7. Some adverse setting effects would remain due to increased noise, dust and/or lighting associated with construction and decommissioning activities. However, as these setting effects would be temporary and fully reversible, they are considered to be **not significant**.

6.5. Landscape and visual

What would be the change to landscape character as a result of Rosefield Solar Farm?

6.5.1. No part of Rosefield Solar Farm falls within a nationally designated landscape, albeit the southern half of Parcel 2 lies within the locally designated Quainton-Wing Hills Area of Attractive Landscape. In addition, Claydon House Registered Park and Garden lies to the north of Parcel 1.

6.5.2. For the most part, all four parcels of the Site fall across areas of rolling lowland and shallow valleys with relatively gentle variations in elevation. The exceptions to this are the southern and western areas of Parcel 2, which lie on somewhat more elevated low ridges above the gently undulating landscapes below. Field boundary hedgerows are generally intact and although woodland cover is generally low across Aylesbury, the environs of the Site benefits from good local cover. In particular, the land between, and to the south, of Parcels 1, 1a and 2 contains mature and ancient woodland that was once part of Bernwood medieval hunting forest.

6.5.3. Settlement is concentrated in Winslow and a number of smaller villages, notably Botolph Claydon, East Claydon, Granborough, Steeple Claydon and Calvert, all of which sit on higher land. Elsewhere, farmsteads and a few isolated properties are scattered throughout the landscape. Although land within all three parcels is almost exclusively farmed, a number of detracting features are present in the surrounding landscapes. This includes the ongoing construction of High Speed 2 and East West Rail and existing energy infrastructure in the form of the Calvert energy from waste plant, the National Grid East Claydon Substation and numerous tall pylons.

6.5.4. Changes to landscape character during operation (including maintenance) would typically arise from:

- introduction of new energy infrastructure into existing agricultural fields;
- earthworks in the vicinity of the Rosefield Substation, Main Collector Compound and Battery Energy Storage System;
- incremental growth of newly established mitigation planting (hedgerows and structural woodland);
- establishment of new wildflower rich grassland in open fields and field margins;
- introduction of a network of permissive footpaths around the Site; and
- regular maintenance visits and operations including habitat management.

6.5.5. Additional effects during the construction phase on landscape character would arise from:

- temporary Construction Compounds (with associated temporary night time lighting) and access tracks;
- highways work and management;
- temporary closure of public rights of way;
- the movement of vehicles and delivery of components to Site;
- the movement of plant and personnel within the Site installing Rosefield Solar Farm; and
- the incremental increase in the infrastructure comprising Rosefield Solar Farm.

Would Rosefield Solar Farm have a visual impact?

6.5.6. People in the landscape who are likely to experience views of Rosefield Solar Farm are:

- Residents (within settlements and at isolated farmsteads/dwellings);
- Users of public rights of way;
- Users of the local road network;
- Railway users; and
- Visitors to tourist attractions/heritage assets.

6.5.7. The villages of Botolph Claydon, Granborough and Steeple Claydon lie within 1 kilometre of the Site. It has been assessed that there would be some open views of the Rosefield Solar Farm during construction,

operation (including maintenance) or decommissioning from locations within these villages. Other villages would either have no view of Rosefield Solar Farm or would be at such considerable distance as to not experience significant visual effects.

6.5.8. Changes in views and visual amenity during construction and operation (including maintenance) would typically arise from those activities already described above for landscape change.

What mitigation measures will be implemented?

6.5.9. The potential landscape and visual effects of Rosefield Solar Farm have been considered from the outset of the design process and have been one of the critical drivers for design decisions at all stages. Early landscape and visual feasibility appraisal fed into the site selection, and options appraisals helped to avoid adverse landscape and visual effects where possible and appropriate.

6.5.10. The placement and height of infrastructure within Rosefield Solar Farm has been considered carefully to mitigate potential significant effects as far as practicable.

6.5.11. New tree and shrub planting has been proposed to mitigate landscape and visual effects. This includes extensive new hedgerow and native woodland planting. Specific attention has been focussed on mitigating views from local villages and individual residential properties, Calvert Road/Orchard Way and Claydon Road and public rights of way where they pass close to Rosefield Solar Farm.

6.5.12. In total, it is proposed to plant over 4 kilometres of new hedgerow and over 8.8 hectares of new structural woodland planting within the Site. The new planting proposals respond directly to specific guidelines in the Aylesbury Vale Landscape Character Assessment.

6.5.13. During construction, measures detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]** would ensure that all existing hedgerows, trees and woodland would be retained and protected (except where removal of vegetation has been approved under the Development Consent Order).

6.5.14. During the operation (including maintenance) phase, existing and newly established habitats and planting would be maintained in accordance with measures detailed in and secured by the **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**. This would ensure, amongst other things, that any defective planting is replaced and that all new planting establishes successfully by Year 10. It would also ensure that existing and new hedgerows (once established) would be maintained

for the duration of the operation (including maintenance) phase of Rosefield Solar Farm.

What are the likely significant effects for landscape and visual?

6.5.15. No significant visual effects would occur within the villages of Botolph Claydon, Granborough, Steeple Claydon or any other distant settlements. In total, it is assessed that the residents of six dwellings would experience **significant** adverse visual effects during Year 1 of operation, with only two remaining in the long-term following the establishment of mitigation planting by Year 10.

6.5.16. Aside from residents, users of the following promoted routes and public rights of way would experience **significant** adverse visual effects during construction and/or in the early years of operation and maintenance:

- North Buckinghamshire Way/Midshires Way and public rights of way between East Claydon/East Claydon Road and the eastern boundary of Parcel 3;
- Swan's Way/Outer Aylesbury Ring and public rights of way to Quainton Hill/Conduit Hill;
- Bernwood Jubilee Way and public rights of way between Botolph Claydon and Runt's Wood;
- Public rights of way between Calvert Road and the line of High Speed 2; and
- Public rights of way to Finemere Hill.

6.5.17. Over a number of years, proposed mitigation planting would mature and by Year 10 of operation, many of these views would be softened or partially screened; however, **significant** adverse visual effects would remain for all the above locations, apart from North Buckinghamshire Way/Midshires Way and public rights of way between East Claydon/East Claydon Road and the eastern boundary of Parcel 3.

6.5.18. Users of other recreational facilities would experience **significant** adverse visual effects during construction, operation (including maintenance) and decommissioning at the following locations:

- Claydon House Registered Park and Gardens; and
- Hogshaw Farm and Wildlife Park.

6.6. Land and groundwater

What measures have been incorporated into the design of Rosefield Solar Farm to reduce impacts on land and groundwater?

6.6.1. The design of Rosefield Solar Farm includes several measures to reduce impacts on land and groundwater. Such measures include:

- The extent of construction works will be reduced as far as possible by using existing tracks and crossings/gaps in hedgerows, to minimise the areas of land and groundwater directly impacted during construction;
- Infrastructure has been positioned to avoid locations close to watercourses, which will also mean that areas where groundwater is present close to the surface have generally been avoided;
- The use of concrete has been minimised;
- The requirement for digging trenches and excavations has been minimised by locating cabling routes next to access tracks (where possible);
- The release of fire-fighting water to the ground surface, or into surface water or groundwater, will be prevented by the procedures detailed in and secured by the **Outline Drainage Strategy [EN010158/APP/7.11]**.

Would Rosefield Solar Farm affect land and groundwater?

6.6.2. Without mitigation, Rosefield Solar Farm could result in adverse effects on the geological units by permanently altering the structure of bedrock during excavation work, construction of foundations or piling work.

6.6.3. Construction activities could result in localised contamination of soils or groundwater, either due to existing contamination being disturbed, or accidental spills of fuels or chemicals being used during works.

6.6.4. Groundwater quality or movement of groundwater could be changed by construction activities like horizontal directional drilling, piling or excavations (for example by causing damage to existing drainage systems, affecting flow patterns, or by spillage of fuels or chemicals). Water running over the surface of the land during rainfall events could also move contamination into the soil or groundwater.

6.6.5. During operation (including maintenance) and decommissioning, contamination of geological units or groundwater could occur due to accidental spills, but this is less likely than during the construction phase as there are not as many activities involved. There is the potential for accidental release of water used in cooling infrastructure during a fire

event, which could pollute groundwater if any cross-contamination with fire-fighting chemicals has occurred. However, mitigation measures (as detailed below) will be put in place to ensure that any water used in controlled fire incidents associated with the Battery Energy Storage System are not released to the ground or groundwater.

6.6.6. The assessment has concluded that effects on land and groundwater during construction, operation (including maintenance) and decommissioning are **not significant**.

What mitigation measures will be implemented?

6.6.7. A site investigation to determine ground conditions will be undertaken before construction starts. This will provide information on existing geological units and depths, and whether there are any existing sources of pollution that need to be cleaned up before construction commences.

6.6.8. In addition, the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]** details and secures measures to make sure any contamination present in the ground or groundwater does not have a damaging effect, as well as to make sure no new contamination is introduced. Such measures include:

- good housekeeping and management of materials and waste;
- maintaining records of routine inspections, investigations and corrective actions;
- adhering to procedures to prevent disturbance of contamination;
- having emergency procedures to manage accidental spillages and leaks;
- adhering to management plans for undertaking horizontal directional drilling works; and
- undertaking a piling risk assessment.

6.6.9. During the operation (including maintenance) phase, the **Outline Operational Environmental Management Plan [EN010158/APP/7.3]** details and secures the same protection measures. The **Outline Battery Safety Management Plan [EN010158/APP/7.9]** and **Outline Drainage Strategy [EN010158/APP/7.11]** detail and secure measures to ensure that any water used in controlled fire incidents associated with the Battery Energy Storage System is not released to the ground or groundwater. Furthermore, the provision of an impermeable membrane will ensure that any fire water that is generated can be contained on-site. It will then be possible to test the fire water to see if it contains any contamination. The results of the analysis will be used to agree how the water can be disposed of, ensuring that no contaminated water is released into the environment.

6.6.10. During the decommissioning phase, the **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]** and **Outline Battery Safety Management Plan [EN010158/APP/7.9]** detail and secure equivalent measures to the construction and operation (including maintenance) phases to prevent adverse effects on land and groundwater from occurring.

6.7. Soil

Would Rosefield Solar Farm affect soil?

6.7.1. The soil across the Site is currently mainly used for agricultural purposes. The soil types are similar across the Site, described as wet clays.

6.7.2. Mitigation measures that would ensure effects on soils are controlled are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**, **Outline Soil Management Plan [EN010158/APP/7.7]**, **Outline Operation Management Plan [EN010158/APP/7.3]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**.

6.7.3. Taking account of the mitigation measures proposed in the above documents, effects on soil ecosystems during construction, operation (including maintenance) and decommissioning are considered to be **not significant**.

Would Rosefield Solar Farm affect agricultural land?

6.7.4. The agricultural land within the Site has been categorised according to a system for soils in agricultural use known as the agricultural land classification system. Soils are separated into the following groups depending on their quality in terms of use for agriculture:

- Agricultural land classification grade 1 (excellent quality);
- Agricultural land classification grade 2 (very good quality);
- Agricultural land classification grade 3a (good quality);
- Agricultural land classification grade 3b (moderate quality);
- Agricultural land classification grade 4 (poor quality);
- Agricultural land classification grade 5 (very poor quality); and
- Non-agricultural land.

6.7.5. Soils of grade 1, grade 2 or grade 3a are classified as being ‘best and most versatile’ agricultural land. Soils of grade 3b, grade 4 or grade 5 are considered to be ‘non-best and most versatile’ agricultural land.

6.7.6. A survey of land within the Site has been completed to determine the grades of agricultural land that are present, the results of which are presented in **Table 6.1**, with the area given for each classification in hectares, and as a percentage of the total surveyed area. The results show that only 10.2 hectares (1.51 percent) of the Site has been identified as 'best and most versatile' agricultural land, none of which will be permanently lost.

Table 6.1: Agricultural land classification results of the area surveyed within the Site

Agricultural land classification grade	Area (hectares)	Percentage
Grade 2	3.01	0.44
Grade 3a	7.19	1.07
Grade 3b (surveyed)	594.91	88.13
Unsurveyed area (Grade 3b)	42.45	6.29
Non agricultural	27.48	4.07
Total best and most versatile	10.20	1.51
Total non-best and most versatile	637.37	94.42
Total	675.05	100

What mitigation measures will be implemented?

6.7.7. The impact on agricultural land and soil ecosystems has been minimised throughout the design of Rosefield Solar Farm. Furthermore, the **Outline Soil Management Plan [EN010158/APP/7.7]** details and secures strategies to protect soil and farmland during construction, operation (including maintenance) and decommissioning, which will be regularly audited by the principal contractor to ensure compliance. It aims to maintain soil ecosystems and restore the land to its original condition. It also includes measures for vehicle movements to prevent soil damage and carefully planned access routes to minimise impacts.

6.7.8. During operation (including maintenance), there will be less ground disturbance compared to the construction phase, as maintenance will primarily involve periodic visits to repair equipment and clean solar panels while using existing paths to minimise impact. It is intended that the grassland around the solar panels will be managed by sheep grazing, allowing some agricultural use of the land to continue. Additionally, soil will continue to be stored and managed properly to maintain its quality.

6.7.9. During decommissioning, vehicle movements will primarily occur on established paths to limit soil disturbance. Concrete and infrastructure foundations will be removed to a depth of up to 1 metre, while underground cables will remain in place to minimise impact on soil ecosystems. Areas with topsoil removed will be restored using retained or new topsoil, ensuring that all land is returned to its original agricultural quality.

6.7.10. Existing farming practices will not be able to continue during construction. This effect is considered to be **not significant**, because the work is temporary and any damage will be mitigated through following the **Outline Soil Management Plan [EN010158/APP/7.7]**. As the soils are medium textured and able to be worked for majority of the year, the soil has medium resilience to soil damage. Due to the mitigation measures detailed in and secured by the **Outline Soil Management Plan [EN010158/APP/7.7]**, remaining effects on soil ecosystems during construction are expected to be **not significant**.

6.7.11. During the operation (including maintenance) phase, there will agricultural land that will not be usable for agriculture over the 40 year lifetime per phase of Rosefield Solar Farm (although there is a potential for sheep grazing). Although this period is long-term, Rosefield Solar Farm is considered temporary and reversible, meaning most of the land will eventually return to agricultural use. Therefore, the remaining effects on agricultural land quality are considered to be **not significant**.

6.7.12. Without farming pressures and nutrient inputs from grazing, the soil quality is expected to improve during operation through increased soil organic matter, nutrient density and improved soil structure. Therefore, remaining effects on soil ecosystems are considered to be **not significant**.

6.7.13. During decommissioning, effects on agricultural land and soil ecosystems are expected to be minimal and similar to those experienced during construction through following best practice measures detailed in and secured by the **Outline Soil Management Plan [EN010158/APP/7.7]**. Remaining effects on agricultural land quality and soil ecosystems are therefore considered to be **not significant**, as majority of the land will be returned to the landowner for agricultural use.

6.8. Noise and vibration

6.8.1. Baseline noise monitoring has been undertaken to establish the existing acoustics conditions at surrounding residential properties to inform the potential noise effects of Rosefield Solar Farm.

6.8.2. Operation (including maintenance) phase noise levels have been predicted using a computer noise model of the Rosefield Solar Farm

layouts, using proprietary modelling software to assess the impact of Rosefield Solar Farm at nearby residential properties.

6.8.3. A construction and decommissioning phase assessment has been undertaken and has been used to determine whether the construction and decommissioning phase activities are likely to result in significant adverse noise effects on surrounding residential properties.

What measures have been incorporated into the design of Rosefield Solar Farm to reduce impacts to noise and vibration?

6.8.4. Operation (including maintenance) noise is generated by the Battery Energy Storage System, Rosefield Substation, Satellite Collector Compounds transformers and Central Inverter Transformer Stations.

6.8.5. The main factors which determine noise at residential properties are:

- The level of noise emitted by the source, and
- The distance to residential properties from the source.

6.8.6. On this basis, Rosefield Solar Farm has been designed to reduce noise and vibration impacts at nearby residential properties, as detailed in and secured by the **Outline Operational Environmental Management Plan [EN010158/APP/7.3]**, including the following:

- Increasing the distance between noise emitting equipment/construction activities and residential properties as much as possible,
- Use of low noise equipment where feasible; and,
- Orientating the equipment to face away from residential properties.

6.8.7. Construction works would be undertaken during the hours of 07:00 to 19:00 Monday to Friday, and 07:00 to 12:00 on Saturday. Between 07:00 to 08:00 and 18:00 to 19:00 Monday to Friday and 07:00 to 08:00 on Saturdays, noisier activities (such as piling) would be restricted depending on the construction activity proposed to take place and its proximity to residential properties. No construction works would be carried out on Sundays or Bank or Public Holidays without prior agreement with Buckinghamshire Council. This is detailed in secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**.

What mitigation measures will be implemented?

6.8.8. Following the initial assessment of the operation (including maintenance) phase noise levels, the following mitigation measures have been included:

- Selection of lower noise transformers for the main transformers in Rosefield Substation and the Satellite Collector Compounds; and

- Barriers around the Battery Energy Storage System container areas, Rosefield Substation, Satellite Collector Compounds, and Central Inverter Stations that have the potential to increase noise levels at residential properties.

6.8.9. The following mitigation measures that will be adopted to minimise the potential noise impacts resulting from the construction phase are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**:

- The use of industry best practice measures to reduce noise and vibration,
- Temporary noise barriers/site hoarding when working in the vicinity of residential properties,
- Piling mitigation (shrouds and/or resilient pads) when working in the vicinity of residential properties; and
- Community liaison with residents of nearby properties.

6.8.10. No mitigation, enhancement or monitoring measures to reduce vibration resulting from Rosefield Solar Farm are considered necessary, given that effects from vibration are predicted to be **not significant**.

What are the likely significant effects for noise and vibration?

6.8.11. Noise and vibration effects are predicted to be **not significant** during the construction, operation or decommissioning phases following the introduction of appropriate mitigation measures. Noise generated by construction traffic on the local road network is also predicted to be **not significant**.

6.8.12. It is noted that the operational assessment has been based on representative design to achieve suitable noise levels at surrounding residential properties. It is anticipated that the noise emitting equipment will be refined as part of the detailed design which may include consideration of alternative equipment specifications, locations and numbers of equipment within the site. Potential designs will not be progressed if the noise levels post-mitigation result in any significant adverse effects.

6.9. Population

Would Rosefield Solar Farm affect walkers, cyclists and horse riders?

6.9.1. During the 30-month construction phase, existing public rights of way and permissive paths that interact with the Site would be kept open as far as is

safe to do so, but some may need to be temporarily closed or diverted (for a maximum of 6 weeks).

6.9.2. Measures will be put in place to minimise disruption to people using public rights of way during the construction phase - these are detailed in and secured by the **Outline Rights of Way and Access Strategy [EN010158/APP/7.8]**, **Outline Construction Traffic Management Plan [EN010158/APP/7.5]** and **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**. As a result of these safety and access measures, the effect on walkers, cyclists and horse riders during the construction phase is considered to be **not significant**.

6.9.3. Six public rights of way (or parts of public rights of way) would be closed and diverted permanently during the construction phase and into the operation (including maintenance) phase – these are ECL/4/2, ECL/7/2, SCL/13/2, SCL/13/1, SCL/12/2 and SCL/13/2. Any diversion would be put in place before the existing route is closed.

6.9.4. At the operation (and maintenance) phase, Rosefield Solar Farm would provide three new permissive paths with a combined approximate length of 3.1 kilometres. In particular, the creation of new permissive paths including a permissive path to Knowl Hill, with interpretation measures for Claydon House and Claydon Registered Park and Garden. Within Parcel 2, new paths will provide access to the top of Knowl Hill and in Parcel 3 new paths will link Splash Lane and Bernwood Jubilee Way to create a circular walking route.

6.9.5. With the creation of new permissive paths expected to increase community accessibility and connectivity between existing public highway and community areas such as East Claydon, Middle Claydon, Botolph Claydon and Calvert, the overall effect on community access/walkers, cyclists and horse riders during the operation (including maintenance) is considered to be **not significant**.

Would Rosefield Solar Farm affect agricultural land holdings and non-agricultural businesses?

6.9.6. During the construction phase, some landowners and tenants would lose the use of land used for agriculture.

6.9.7. The landowner owns a wider area of land outside of the Order Limits and has confirmed that it will continue to farm the remainder of its land (where currently farmed and not included in potential land swaps with tenants). The change in land is not anticipated to affect the viability of its commercial activities.

6.9.8. Furthermore, the landowner has negotiated with all agricultural and non-agricultural businesses who are tenants on its land to agree compensation

or ‘land swaps’, such that effects on the viability of these businesses are considered to be **not significant**.

Would Rosefield Solar Farm affect employment?

6.9.9. The construction of Rosefield Solar Farm would support 600 ‘full time equivalent’ jobs on the construction site for the duration of the construction phase. Furthermore, Rosefield Solar Farm is set to support up to 24 new jobs during the operation (including maintenance) phase.

6.9.10. The **Outline Employment, Skills and Supply Chain Plan [EN010158/APP/7.14]** aims to enhance the local benefits of the jobs and contracts, by:

- Promoting opportunities for people to access employment and skills development opportunities; and
- Creating opportunities for businesses to join the supply chain of the Proposed Development.

Would Rosefield Solar Farm affect tourist accommodation occupancy rates as a result of increased visitor numbers to the area?

6.9.11. During construction, a proportion (around 6 percent) of the workforce may move to the area temporarily and use short-term visitor accommodation including hotels, bed and breakfasts, and caravan/camping sites.

6.9.12. This ‘non-local’ construction workforce would be equivalent to around 4 percent of the available (i.e. usually unoccupied) tourist accommodation during the summer peak season.

6.9.13. This has the potential for a short, term positive effect on the local economy.

6.10. Transport and access

What existing road links have been assessed?

6.10.1. The trunk roads relevant to Rosefield Solar Farm include the M40 and A34. Construction traffic will reduce to non-significant levels by the time it reaches these strategic routes.

6.10.2. A detailed review of abnormal load access to the Site has been undertaken, using the existing National Highways ‘Heavy and High Routes’ to East Claydon Substation, via Winslow.

6.10.3. Local road assessments have been carefully assessed. Detailed reviews along the A41 and along the rural road network to access the Site have

been undertaken and have avoided sensitive residential areas and villages wherever possible.

6.10.4. Construction vehicles will access the Site via the A41, Station Road/Dewes Lane, Snake Lane/Fidlers Field and Claydon Road. Access to the eastern parcels of land will be from Granborough Road. Where existing road infrastructure requires improvement, Rosefield Energyfarm Limited will undertake such works to the satisfaction of Buckinghamshire Council.

What mitigation measures will be implemented to avoid, prevent or reduce and, if possible offset significant adverse effects?

6.10.5. To mitigate the effects of construction traffic, specific measures and infrastructure have been incorporated into the design of Rosefield Solar Farm, including:

- Improvements to existing junctions on Snake Lane/Fidlers Field and Claydon Road;
- Passing places and corner widening on Granborough Road; and
- The provision of construction management measures.

6.10.6. Other mitigation measures are detailed in and secured by the **Outline Construction Traffic Management Plan [EN010158/APP/7.5]** and **Outline Rights of Way and Access Strategy [EN010158/APP/7.8]**, which include:

- Maintaining access to public rights of way during construction, including the provision of crossing points, a banksmen and the operation of construction works to ensure public safety;
- Restricting construction Heavy Goods Vehicle movements to specific routes, to avoid access through rural settlements;
- Developing a communications strategy, including regular meetings with contractors to review and address any issues associated with travel to/from the Site, as well as to relay information including any restrictions and requirements which should be followed;
- Implementation of temporary traffic management measures;
- The development of a robust construction staff Travel Plan to reduce single occupancy car trips to and from Site;
- A Wear & Tear Agreement to protect the public road infrastructure from damage caused by construction traffic; and
- A guaranteed response time for queries and complaints arising from construction traffic movements.

What are the likely significant effects for transport and access?

6.10.7. The peak of construction traffic movement has been estimated, with up to 218 Light Goods Vehicles and 141 Heavy Goods Vehicles estimated per day during the peak month of construction movements, expected to occur in the fourth month of construction activities. Prior to and following this peak, construction traffic falls.

6.10.8. During construction, the 'all vehicle' daily two-way trips are not predicted to increase by more than 30 percent on the A41. Increases in traffic over 30 percent on Station Road/Dewes Lane, Snake Lane/Fidlers Field are predicted, although any potential effect would be temporary.

6.10.9. The measures detailed in and secured by the **Outline Construction Traffic Management Plan [EN010158/APP/7.5]** will mitigate against the effects noted on the rural road network and therefore effects are predicted to be **not significant**.

6.10.10. Limited traffic is anticipated to be generated during the operation (including maintenance) phase and therefore effects are predicted to be **not significant**. Furthermore, it is considered reasonable to assume that the impacts during the decommissioning phase, while adopting similar mitigation measures, will be the same as, or not greater than, the construction phase and therefore **not significant**.

6.11. Water

Would Rosefield Solar Farm affect water quality?

6.11.1. If not mitigated, construction and decommissioning activities can result in an increased risk of silt-laden runoff which in turn has the potential to degrade water quality within the receiving watercourses. During construction, there would be temporary increased demand on water resources for the supply of drinking and non-drinking water for construction activities.

Would Rosefield Solar Farm affect flood risk?

6.11.2. Only solar photovoltaic development would be located within Flood Zone 2 and Flood Zone 3 (associated with the Claydon Brook and Claydon Brook Tributary) and solar panels would be raised above appropriate flood levels. All infrastructure with foundations, such as the Rosefield Substation and Battery Energy Storage System, would be located outside of these areas.

6.11.3. Additional runoff generated from Rosefield Solar Farm would be captured and managed by suitable sustainable drainage system features, as detailed in and secured by the **Outline Drainage Strategy**

[EN010158/APP/7.11], which will ensure that runoff mimics the natural scenario and does not increase, even taking climate change into account. Runoff would be released to appropriate locations at rates designed to mimic the natural 'greenfield' rates, with the option to shut off the outlet for the Battery Energy Storage System in the event of a fire or other pollution incident. Linear sustainable drainage system features have also been proposed for the areas of solar photovoltaic development and for the Internal Access Corridors. Many areas are considered to remain permeable and would continue to drain in a similar way to the pre-development scenario, therefore having no adverse impact on flood risk.

What mitigation measures will be implemented?

6.11.4. To avoid, prevent, or reduce significant adverse effects on water quality during the construction and decommissioning phases, mitigation measures will be implemented which are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010158/APP/7.2]** and **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**. The protection of water quality will be focused on reducing the mobilisation of silt and pollutant chemicals and preventing them from entering watercourses, usually via rainfall runoff. Such mitigation measures will also ensure that there are no effects of water degradation within the Claydon Brook Tributary catchment, therefore having no impact on the Water Framework Directive waterbody.

6.11.5. Rosefield Solar Farm includes mitigation measures to reduce these risks; for example, Construction Compounds would be located at least 10 metres from existing watercourses. However, there remains the potential for release of hazardous materials and fine sediment from stockpiling materials (for example, soil), plus from fuel, hydraulic fluids and other potentially polluting substances which will be stored and/or used on site. Leaks and spillages of these substances could pollute the nearby surface watercourses if their use or removal is not carefully controlled, with spillages entering existing flow pathways or water features directly.

6.11.6. Mitigation measures specific to the reduction of mobilisation of silt and pollutant chemicals from entering watercourses include the following:

- No vehicle, equipment or material storage is permitted within the Flood Zone 2 or Flood Zone 3 or within 20 metres of watercourses where practicable;
- The placement of stockpiled materials as far away as practically possible from surface water features;
- Vegetation removal is undertaken on a phase-by-phase basis to avoid excessive exposure of bare soil;
- Silt fencing or straw bales to be placed downslope of construction works to prevent silt entering watercourses;

- Additional silt fencing kept on site for deployment at short notice;
- A wheel wash at the Site access to reduce silt migration across the Site;
- Vehicles to be inspected at the start of each day, and vehicles showing signs of fuel/oil drips, missing fuel caps, or damaged hydraulics will be rejected and not used on Site before repair;
- Fuels will be stored in a double skinned locked and bunded fuel bowser as far away from watercourses as reasonably practicable. Refuelling will be carried out over a drip tray. These will be regularly maintained and inspected for rainwater. Rainwater will be removed by specialist removal. A spill kit will be located next to any bowser;
- Spill kits will contain as a minimum: spill booms, granules, mats and gully covers;
- If groundwater pumping is necessary for excavations, the wastewater must be disposed of in accordance with Environment Agency guidance; and
- All surface waters and drains must be protected from silt runoff using gully guards, straw bales, gravel traps or silt fencing. These measures must be inspected daily.

What are the likely significant effects on the water environment?

6.11.7. Remaining effects on the water environment during the construction, operation (including maintenance) and/or decommissioning phases are considered to be **not significant**.

6.12. Health and wellbeing effects

How have health and wellbeing effects been considered in this application?

6.12.1. Effects on health and wellbeing have been considered throughout the Environmental Statement, drawing on individual assessments of the effects of noise, air quality, traffic and access, landscape and visual environment and other environmental changes considered in the sections above.

6.12.2. The effects have also been reported through a health 'lens' in a detailed assessment of the likely effects of the Proposed Development on 'determinants of health' (see below) which are defined by the World Health Organisation (WHO), and often used in guidance for assessing health effects of development.

6.12.3. That assessment considers the 'pathways' that may lead to a change in the health and wellbeing of people who live or work near the Proposed Development, or use resources like community spaces and Public Rights of Way in the countryside in and around the Proposed Development.

6.12.4. It also considers where there may be the potential for people with certain characteristics – if there are more of these characteristics than usual in the local community – to experience different or more severe effects on their health from the same changes – these are called 'sub-populations' and may be defined, for example, by age, health, deprivation or other characteristics.

6.12.5. In the area around the Proposed Development, there is little deprivation, but a large proportion of older people, who may be more susceptible to change (for example if they have age-related health or mobility problems).

What are the determinants of health and wellbeing for the Proposed Development?

6.12.6. Solar projects tend to cause different types of environmental change during their construction and operational phases, and so not all of the WHO's 'wider determinants of health' are likely to occur (for example, there is no demolition of property).

6.12.7. These relevant determinants of health have been assessed in the context of the Proposed Development's environmental effects, and in the context of the existing population of the local community:

a) Effects relating to Air Quality;

b) Effects relating to Noise;

c) Effects relating to Landscape and Visual Amenity (including Glint and Glare);

d) Effects relating to Traffic, Transport and Access (including recreational access and enjoyment of the natural environment via PRoW);

e) Effects relating to Socio-economics (including effects on existing employment and business viability, new employment and skills, and social cohesion); and

f) Effects relating to Public Safety (including electromagnetic fields and radiation, major accidents and disasters, and land and water contamination).

6.12.8. There may also be the potential for effects across the Proposed Development to combine, or be experienced at the same time in the same location – these are called in-combination effects, and have been assessed in terms of their likelihood to result in health and wellbeing effects (particularly where there are resources like PRoW or settlements that may experience more than one 'significant' effect).

6.12.9. The health assessment also considers the potential for cumulative effects – where the environmental effects of multiple projects in the area could combine to result in more significant changes to the determinants of health and wellbeing.

How have effects on mental health and wellbeing been considered?

6.12.10. Mental health and wellbeing is often difficult to define, affects individuals differently and can be influenced by a lot of different factors. In addressing the potential for these types of health effects, the assessment has looked at industry-standard guidance, scientific literature and – importantly – feedback from the community on what they consider important to their wellbeing, in order to understand the potential pathways for changes in mental health, and to help to address these through mitigation measures, engagement and design.

6.12.11. In terms of effects on mental health and wellbeing, the assessment considers that:

- Engagement has been undertaken via pre-application statutory, non-statutory consultation and bilateral and community engagement that have provided adequate provision of information and consideration of community and stakeholder feedback in the approach to design and assessment development;
    - A key factor relating to mental health and wellbeing is securing the ability to continue, post-consent and post-commencement of the works, the ability for the community to monitor, scrutinise, understand and influence the Proposed Development during short-term construction activities (e.g. via management plans), holding it to account and providing important local knowledge to support the delivery of long-term enhancement plans.
- Key environmental assessments relating to the potential for effects on mental health have been undertaken (for example relating to noise and air quality), and effects mitigated to their fullest extent such that residual effects are not significant where practically possible;
- Mitigation goes beyond best practice to include community liaison commitments, the provision of monitoring and remedial measures

relating to specific areas of concern raised by local residents (such as operational noise);

- Enhancements have been provided to the long-term accessibility of the area in order to promote and enhance physical and mental wellbeing.

6.12.12. While cognisant that mental health and wellbeing is individual, subjective and experienced through a range of external factors beyond the Proposed Development control, the assessment considers that the approach taken to provide information and engage and consult, clearly and transparently report and mitigate significant environmental effects (where practicable) and secure enhancement measures demonstrates that appropriate measures have been taken to address potential effects on mental health and wellbeing at a sub-population scale.

What mitigation measures will be implemented to address potential effects on health and wellbeing?

6.12.13. There are a number of mitigation measures that contribute to the ability for the Proposed Development to design for, monitor, manage and engage on, and mitigate potential adverse effects on health and wellbeing across many different determinants and pathways of health.

6.12.14. These include design measures that have been set out and secured within documents such as the **Design Commitments [EN010158/APP/5.9.7],** and the **Draft Development Consent Order (DCO) [EN010158/APP/3.1.8],** with their iterative development based on consultation and engagement set out in the **Consultation Report [EN010158/APP/5.1] [APP-020]** and the **Design Approach Document [EN010158/APP/5.8] [CR1-014]** – this includes measures like replacement and new PRoW and permissive paths, setback distances between homes and solar panels, and measures integrated into the location and design of the BESS, Solar PV modules and accesses.

6.12.15. Other mitigation measures include those set out in outline within the management plans, that will be developed into detailed and bespoke measures that are specific to the types of effects (e.g. noise and air quality) and include commitments to transparent review and implementation processes (including through the activities of a Community Liaison Group) – the management plans include:

- **Outline Construction Environmental Management Plan [EN010158/APP/7.2.6];**
- **Outline Operation Environmental Management Plan [EN010158/APP/7.3.6];**

- **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4.5];**
- **Outline Construction Traffic Management Plan [EN010158/APP/7.5.5];**
- **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6.6];**
- **Outline Soil Management Plan [EN010158/APP/7.7.4]; and**
- **Outline Rights of Way and Access Strategy [EN010158/APP/7.8.5] [CR1-026].**

What are the likely significant effects on health and wellbeing?

6.12.16. In most cases, on application of standard health assessment criteria, the Proposed Development is unlikely to result in a significant residual effects on health and wellbeing – however it is acknowledged that this is dependant on the full and comprehensive application of additional mitigation secured by the Certified Documents within the application and referenced throughout this NTS and the ES.

6.12.17. The assessment concludes that while individuals and more sensitive subpopulations may experience the effects of the Proposed Development more acutely, that the Applicant has undertaken to fully assess and mitigate the potential for adverse effects on health as far as is practicable.

6.12.18. In terms of individual determinants, residual effects are anticipated as follows:

- Health and wellbeing effects relating to air quality (including dust and particulate emissions and traffic-related emissions) are likely to be **negligible** to **minor adverse** and **not significant** in both the construction and decommissioning phases and the operational phase, as a result of embedded and additional mitigation.
- Health and wellbeing effects relating to noise (including construction activity, traffic, and operational noise (at night)) are likely to be **negligible** to **minor adverse** and **not significant** in both the construction and decommissioning phases and the operational phase as a result of embedded and additional mitigation.
- Health and wellbeing effects relating to landscape and visual environment (including the visual appearance of the countryside experienced by some people at home and using some PRoW) have the potential to be **moderate adverse** and **significant** for some locations and sub-populations in both the construction and decommissioning phases and the operational phase.

- For these effects, the determinant of health effects is generally built on the pathways that include assigning an effect on personal perception of the landscape and its mental health and wellbeing value being dependent on subjective interpretation of the landscape as a whole, and of individual views by an individual and collective set of receptors – change to the landscape may cause some people to experience stress or anxiety, if they are unable to access other areas of landscape quality, or if a change to their experience of the landscape means they are less inclined to undertake physical activity within it. As such, a significant effect on health is unlikely to occur at a population scale, but has been considered *potentially* significant in some cases given the application of standard criteria and in the context of community feedback.

- Health and wellbeing effects relating to traffic, transport and access (including severance, driver delay, pedestrian delay, non-motorised amenity, and fear and intimidation, and community access) are likely to be **minor adverse** and **not significant** in both the construction and decommissioning phases and potentially **minor adverse** and **minor beneficial** and **not significant** in the operational phase as a result of embedded and additional mitigation and enhancement.
- Health and wellbeing effects relating to effects on existing jobs, business and commercial activity (including changes to employment supported by agricultural and non-agricultural businesses) are likely to be **minor** to **moderate adverse** and **not significant** in both the construction and decommissioning phases and during the operational phase as a result of embedded and additional mitigation.
  - These effects, while potentially of between **minor** and **moderate** scale, are not considered to be significant. In the context of compensation and mitigation, professional judgement has determined that this effect is not likely to be significant as there is unlikely to be a substantial (if any) loss of employment supported, and business viability is likely to be maintained through the application of environmental measures.
- Health and wellbeing effects relating to new employment and skills (including new temporary construction jobs, supply chain opportunities and permanent operational roles) are likely to be **negligible** to **minor** to **beneficial** and **not significant** in both the construction and decommissioning phases and during the operational phase.
- Health and wellbeing effects relating to social cohesion during construction (related to the effect of incoming, non-local construction workforce) are likely to be **negligible** to **minor** to **adverse** and **not significant** in both the construction and decommissioning phases.

- Health and wellbeing effects relating to EMF and radiation are likely to be **negligible** to **minor adverse** and **not significant** in the operational phase as a result of embedded and additional mitigation.
- Health and wellbeing effects relating to major accidents and disasters (related to thermal runaway events, fire and battery safety) are likely to be **minor adverse** and **not significant** in the operational phase as a result of embedded and additional mitigation.
- Health and wellbeing effects relating to land and water contamination are likely to be **minor adverse** and **not significant** in the operational phase as a result of embedded and additional mitigation.

~~6.12.~~6.13. Cumulative effects

Intra-project combined effects

What are intra-project combined effects?

~~6.12.1.~~6.13.1. The intra-project cumulative effects assessment considers the combined effects of Rosefield Solar Farm on a common feature. For example, during construction and decommissioning, users of public rights of way that cross the Site may be impacted visually, by dust emissions and by increased noise levels.

Would there be any significant effects from multiple impacts related to Rosefield Solar Farm?

~~6.12.2.~~6.13.2. The following are considered to experience a **significant** adverse effect due to a single impact from Rosefield Solar Farm and are therefore considered to experience a significant effect due to multiple impacts from Rosefield Solar Farm that are predicted to occur upon them. However, this is not classified as a 'new' significant effect:

- Residential properties (Pond Farmhouse, Catherine Farm, Calvert Cottages, Granary Cottage, The Old Dairy, Knowlhill Farm, Blackmorehill Farm Cottages, Catherine Cottages, Bernwood Farm, Sion Hill Farm, Station House, properties on Claydon Road, Claydon House and its surroundings and Hogshaw Farm and Wildlife Park);
- Bats (in particular Bechstein's bat and barbastelle bat);
- Landscape fabric (woodland, trees and hedgerows);
- North Buckinghamshire Way/Midshires Way;
- Bernwood Jubilee Way;

- Public rights of way between Calvert Road and High Speed 2;
- Public rights of way between Botolph Claydon and Runt's Wood;
- Public rights of way to Finemere Hill;
- Public rights of way, lanes and roads between East Claydon/East Claydon Road and Parcel 3; and
- Swan's Way/Outer Aylesbury Ring.

What mitigation measures will be implemented?

~~6.12.3.~~6.13.3. No additional mitigation measures are proposed to mitigate significant intra-project combined effects, over and above the measures detailed in and secured by the following:

- **Outline Construction Environmental Management Plan [EN010158/APP/7.2]**;
- **Outline Operation Environmental Management Plan [EN010158/APP/7.3]**;
- **Outline Decommissioning Environmental Management Plan [EN010158/APP/7.4]**;
- **Outline Construction Traffic Management Plan [EN010158/APP/7.5]**;
- **Outline Landscape and Ecological Management Plan [EN010158/APP/7.6]**;
- **Outline Soil Management Plan [EN010158/APP/7.7]**;
- **Outline Rights of Way and Access Strategy [EN010158/APP/7.8]**; and
- **Outline Drainage Strategy [EN010158/APP/7.11]**.

Inter-project cumulative effects

What are inter-project cumulative effects?

~~6.12.4.~~6.13.4. Inter-project cumulative effects are the combined remaining (post-mitigation) effects of Rosefield Solar Farm and other development(s) on a single feature. For example, residents may be impacted by noise generated by the construction of Rosefield Solar Farm and by noise generated from another development with an overlapping construction programme. Inter-project cumulative effects also relate to the operation (including maintenance) phase; for example, where the visual amenity of a residential property is impacted by both Rosefield Solar Farm and the final

structure of other development(s), and the cumulative effect becomes significant.

What developments in the area have been considered in the assessment?

~~6.12.5.~~6.13.5. 21 other developments within the 10 kilometre study area of Rosefield Solar Farm have been identified for inclusion in the assessment. This list has been consulted upon and agreed with Buckinghamshire Council.

~~6.12.6.~~6.13.6. In addition, a cumulative assessment has been undertaken to assess the potential effects of both Rosefield Solar Farm and the National Grid East Claydon Substation development.

Are there any likely significant inter-project cumulative effects?

~~6.12.7.~~6.13.7. When reflecting on the implements of standard and good practice mitigation measures, the following potential significant inter-project cumulative effects have been identified in **Table 6.2** below:

Table 6.2: Inter-project cumulative effects

Factor	Name of other development	Description of inter-project cumulative effect
Biodiversity	▪ East Claydon Battery Energy Storage System ▪ East Claydon Greener Grid Park ▪ Tuckey Solar Farm ▪ Longbreach Solar Farm ▪ Calvert Solar Farm ▪ High Speed 2 ▪ East West Rail ▪ Grendon Prison	There is considered potential for a cumulative loss of arable habitat from these developments when combined with Rosefield Solar Farm, as they would change the availability of farmland habitat locally. Foraging and commuting bats and ground nesting birds are most likely to be affected by the following inter-project cumulative effects: ▪ habitat loss and modification (direct land take and modification of land by the placement of solar panels); ▪ habitat fragmentation (through loss of connectivity); ▪ disturbance effects (comprising light, noise and visual effects); and

Factor	Name of other development	Description of inter-project cumulative effect
		▪ incidental mortality. Inter-project cumulative effects on Bechstein's bats are considered to be **significant** adverse due to the modification of habitat (installation of solar photovoltaic modules) for the duration of the operation (including maintenance) phase. However, this is not considered to be a 'new' significant effect, as Bechstein's bats are considered to experience a significant adverse effect due to Rosefield Solar Farm on its own. Inter-project cumulative effects on ground nesting birds are considered **not significant**, as if East Claydon Battery Energy Storage System is approved, dedicated mitigation is proposed which includes for ground nesting skylark to sufficiently mitigate for loss of ground nesting bird habitat. Otherwise, loss of habitat is not likely to be significant for ground nesting birds.
Landscape	National Grid East Claydon Substation	There is potential for moderate adverse cumulative effect on Landscape Character Area 5.7: Hogshaw Claylands during construction, operation (including maintenance) (Year 1 and Year 10), and decommissioning, which is considered **significant**.
Landscape	National Grid East Claydon Substation	There is potential for major/moderate adverse cumulative visual effects on users of Winslow Road/East Claydon Road, and users of the public right of way network between East Claydon/East Claydon Road

Factor	Name of other development	Description of inter-project cumulative effect
		and within Parcel 3 (incorporating public rights of way ECL/3/1, ECL/3/2, ECL/3A/1, ECL/4/1 ECL/4/2, ECL/5/1, ECL/6/1) during construction, operation (including maintenance) (Year 1 and Year 10), and decommissioning, which is considered **significant**.
Landscape	▪ National Grid East Claydon Substation ▪ East Claydon Battery Energy Storage System ▪ East Claydon Greener Grid Park ▪ Tuckey Solar Farm ▪ East West Rail ▪ Longbreach Solar Farm ▪ Littleton Manor Farm	There is potential for major/moderate adverse cumulative visual effect on Sion Hill Farm and Station House during operation (including maintenance) (Year 1 and Year 10), which is considered **significant**.
Landscape	▪ Littleton Manor Farm	There is potential for moderate adverse cumulative effect on Landscape Character Area 9.2: Quainton Hill during operation (including maintenance) (Year 1 and Year 10), which is considered **significant**.
Landscape	▪ East Claydon Battery Energy Storage System ▪ East Claydon Greener Grid Park ▪ Tuckey Solar Farm ▪ East West Rail ▪ Longbreach Solar Farm ▪ Littleton Manor Farm	There is potential for moderate adverse cumulative effect on Landscape Character Area 5.7: Hogshaw Claylands during construction, operation (including maintenance) (Year 1 and Year 10), and decommissioning, which is considered **significant**.
Landscape	▪ East Claydon Battery Energy Storage System	There is potential for moderate adverse cumulative effect on

Factor	Name of other development	Description of inter-project cumulative effect
	▪ East Claydon Greener Grid Park ▪ Tuckey Solar Farm ▪ East West Rail ▪ Longbreach Solar Farm ▪ Littleton Manor Farm	Landscape Character Area 7.3: Claydon Bowl during construction, operation (including maintenance) (Year 1 and Year 10), and decommissioning, which is considered **significant**.
Landscape	▪ East Claydon Battery Energy Storage System ▪ East Claydon Greener Grid Park ▪ Tuckey Solar Farm ▪ East West Rail ▪ Longbreach Solar Farm ▪ Littleton Manor Farm	There is potential for moderate adverse cumulative visual effects from Granborough during construction, operation (including maintenance) (Year 1 and Year 10), and decommissioning, which is considered **significant**.
Landscape	▪ East Claydon Battery Energy Storage System ▪ East Claydon Greener Grid Park ▪ Tuckey Solar Farm ▪ East West Rail ▪ Longbreach Solar Farm ▪ Littleton Manor Farm	There is potential for cumulative visual effects from North Buckinghamshire Way, The Midshires Way, Bernwood Jubilee Way, the public rights of way between Botolph Claydon and Runt's Wood during construction, operation (including maintenance) (Year 1 only), and decommissioning, which is considered **significant**.
Landscape	▪ East Claydon Battery Energy Storage System ▪ East Claydon Greener Grid Park ▪ Tuckey Solar Farm ▪ East West Rail ▪ Longbreach Solar Farm ▪ Littleton Manor Farm	There is potential for moderate adverse cumulative visual effects from Swan's Way/Outer Aylesbury Ring during construction and operation (including maintenance) (Year 1 and Year 10), which is considered **significant**.

Factor	Name of other development	Description of inter-project cumulative effect
Landscape	▪ East Claydon Battery Energy Storage System ▪ East Claydon Greener Grid Park ▪ Tuckey Solar Farm ▪ East West Rail ▪ Longbreach Solar Farm ▪ Littleton Manor Farm	There is potential for cumulative visual effects from the public rights of way between East Claydon Road/Parcel 3 and Granborough/Hogshaw Road, public rights of way between East Claydon/East Claydon Road and to within Parcel 3 during construction, operation (including maintenance) (Year 1 only), and decommissioning, which is considered **significant**.

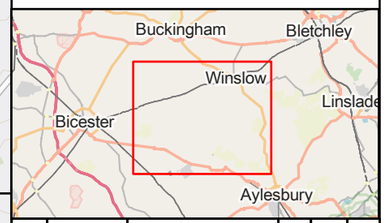
Annex A - Figures

Figure 1 - Location Plan

LEGEND:

- Order Limits
- Areas outside the Order Limits

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



Rev	Date	Description	Drn	Chk	App
01	SEPT 2025	DCO SUBMISSION	LDA	LDA	EDF

Rosefield Solar Farm

Rosefield Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT VOLUME 4:
TECHNICAL APPENDICES AND
NON-TECHNICAL SUMMARY REG 5(2)(A)

TITLE:
FIGURE 1: LOCATION PLAN

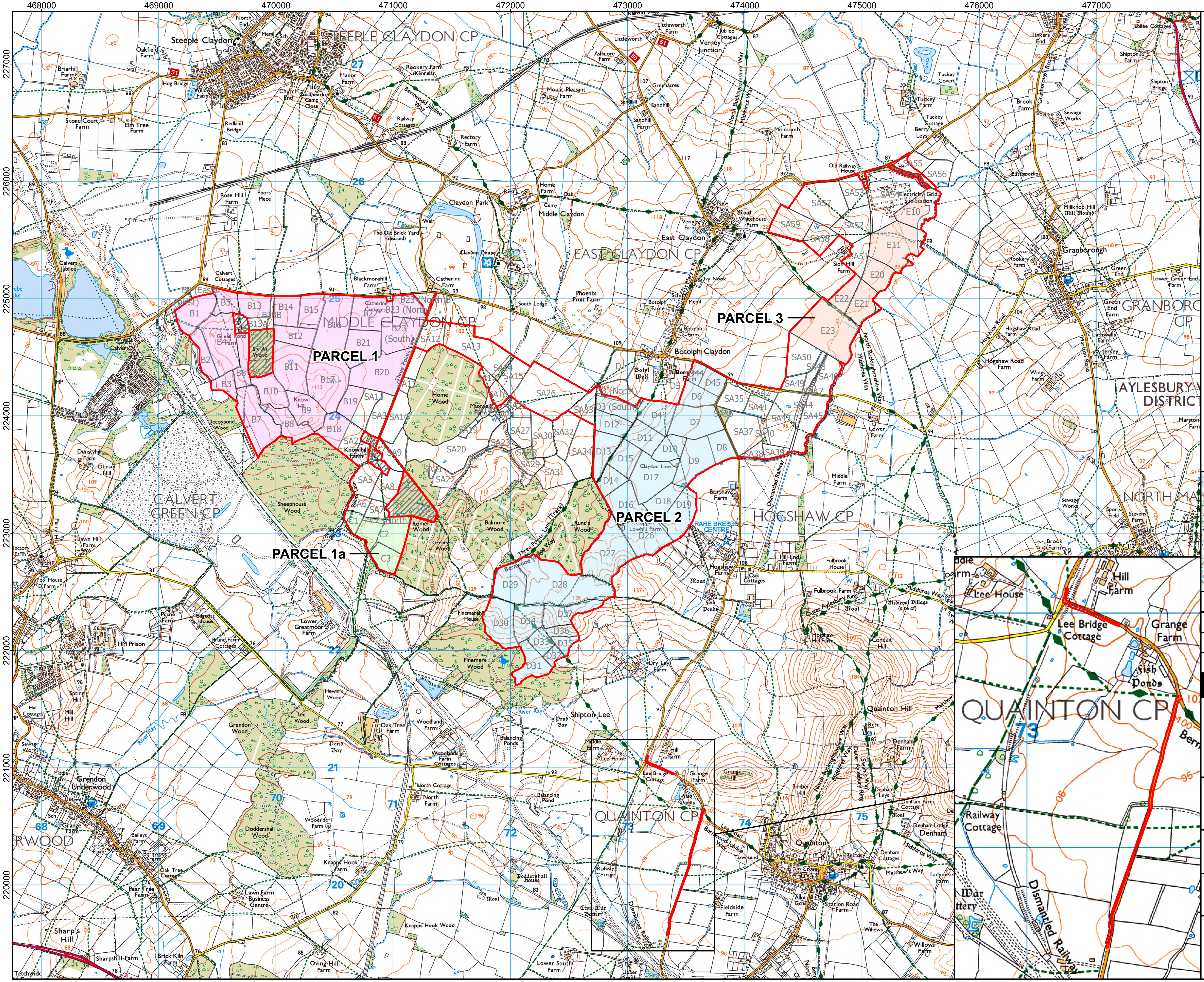
PINS REFERENCE NUMBER:
EN010158/APP/6.4

0 0.5 1
Kilometers
Scale: 1:50,000 @ A3

REV
01

Path: Z:\8478_EDF_Renewables_Project_Custodian\8gis\Projects\NTS_Figures\8478_NTS_Fig1_Location_Plan.aprx\Map

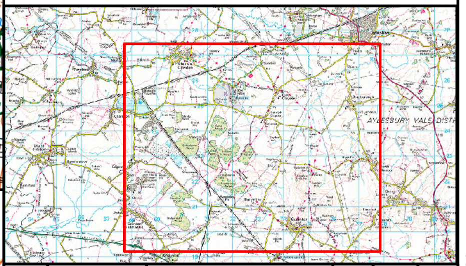
Figure 2 - Order Limits



LEGEND:

- Order Limits
- Areas outside the Order Limits
- Parcel 1
- Parcel 1a
- Parcel 2
- Parcel 3

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



Rev	Date	Description	Drn	Chk	App
01	SEPT 2025	DCO SUBMISSION	LDA	LDA	EDF

Rosefield Solar Farm

Rosefield Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT VOLUME 4: TECHNICAL APPENDICES AND NON-TECHNICAL SUMMARY REG 5(2)(A)

TITLE:
FIGURE 2: ORDER LIMITS

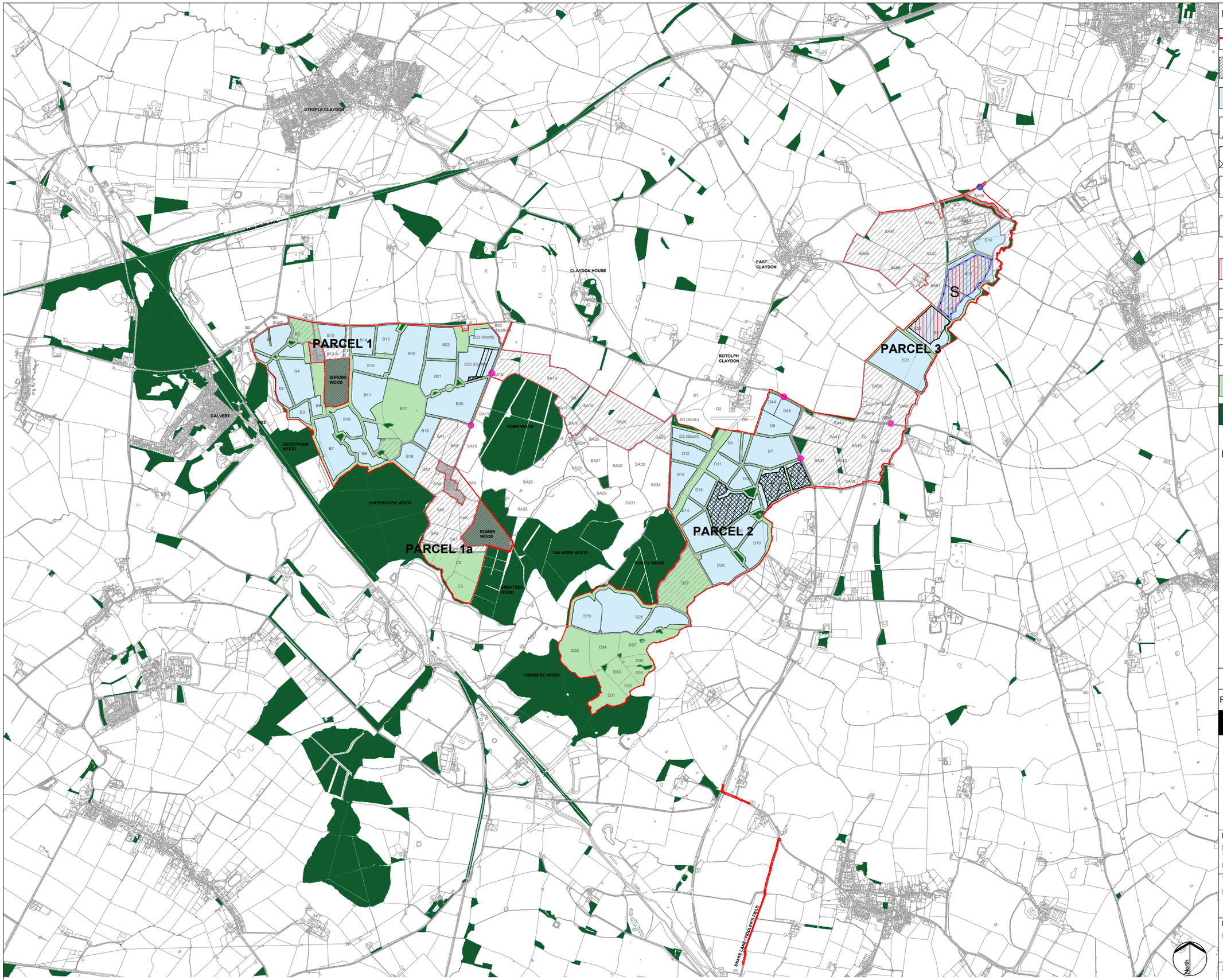
PINS REFERENCE NUMBER:
EN010158/APP/6.4

0 0.5 1
Kilometers
Scale: 1:30,000 @ A3

REV
01

Path: Z:\8478_EDF_Renewables_Project_Custodian\8gis\Projects\NTS_Figures\8478_NTS_Fig2_Order_Limits.aprx\Map

Figure 3 - Zonal Masterplan



KEY:

- Order Limits
- Areas outside the Order Limits
- Proposed area for Solar PV development
- Proposed siting zone for Satellite Collector Compounds
- Proposed siting zone for Satellite Collector Compounds Transformers
- Proposed siting zone for BESS
- Area for underground cable routes and/or access tracks (locations to be determined) Grid connection corridor may include above-ground infrastructure within the National Grid East Claydon Substation
- Proposed siting zone for Main Collector Compound
- Proposed siting zone for Rosefield Substation
- Indicative site access location from public highway
- Indicative access location for abnormal indivisible loads (AIL) from public highway
- Proposed area for mitigation and/or enhancement
- Existing Woodland

NOTES:

1. The location of features shown are indicative only. Exact locations to be confirmed on site.
2. Additional features may be present on site that have not been identified on the topographical plan.
3. Parameter plan drawings are based on OS MasterMap information.
4. The following components are not shown on the parameter plan drawings within fields where solar PV development or other associated infrastructure is proposed: internal cable route corridors, boundary fencing and CCTV, inverter and transformers and switchgear compounds, internal access tracks, drainage, construction access and compounds.
5. Offsets from the outermost overhead transmission line and from the base of the transmission towers will be applied when the revised alignment of overhead lines is finalised by National Grid.

REV	Date	Description	Drn	Chk	App
01	SEPT 2025	DCO SUBMISSION	LDA	LDA	EDF

Rosefield Solar Farm

Rosefield Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 4: TECHNICAL APPENDICES AND NON-TECHNICAL SUMMARY REGULATION 5(2)(a)

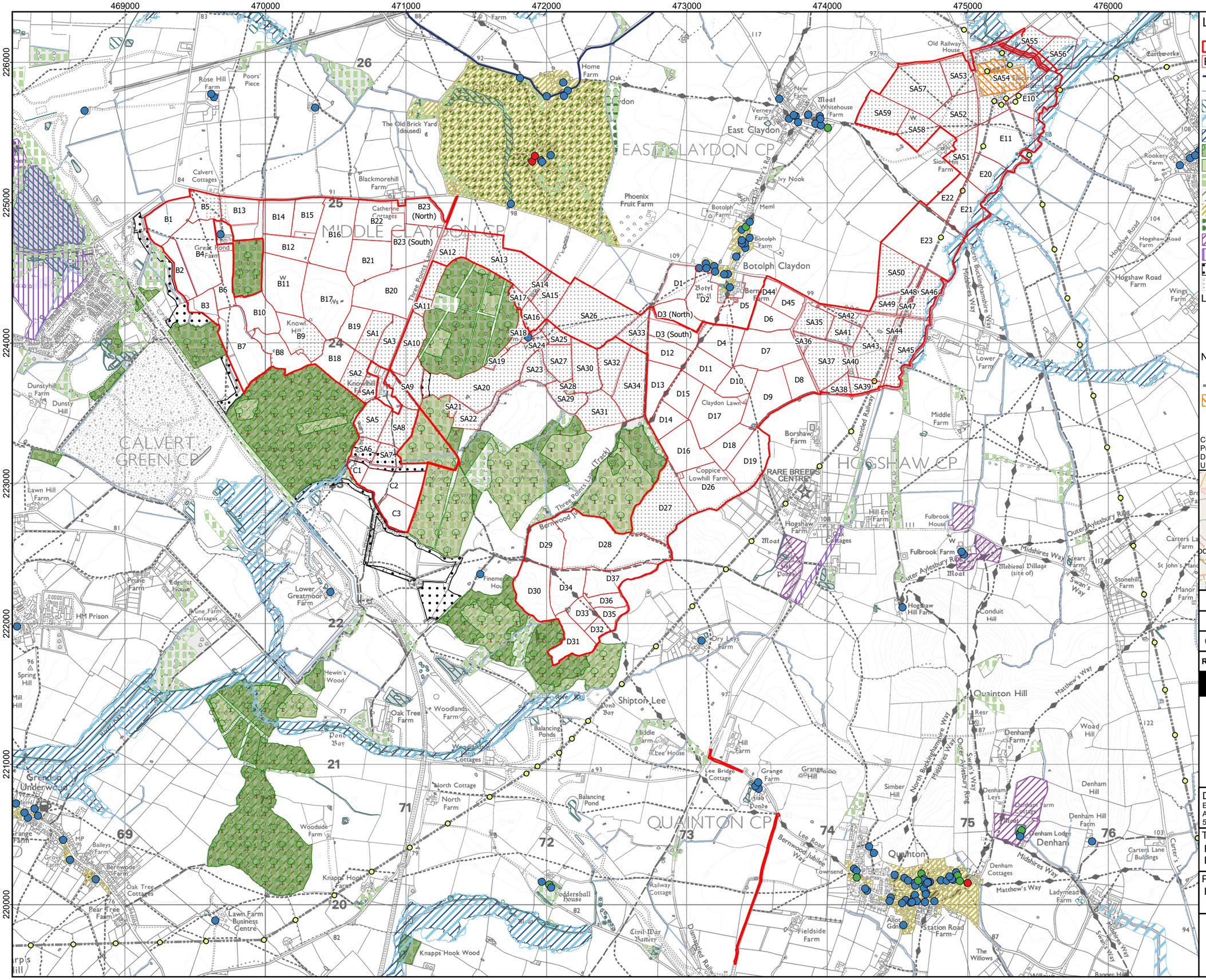
TITLE:
FIGURE 3: ZONAL MASTERPLAN

PINS REFERENCE NUMBER:
EN010158/APP/6.4

SCALE : 1:30,000 @ A3
0 1km

REV: 01

Figure 4 - Environmental Considerations



LEGEND:

- Order Limits
- B12 Field Referencing System
- National Cycle Network - On Road
- Surface Water Line
- Surface Water Area
- Flood Zone 2
- Flood Zone 3
- Ancient & Semi-Natural Woodland
- Ancient Replanted Woodland
- National Forest Inventory
- Sites of Special Scientific Interest
- Conservation Areas
- Registered Parks and Gardens
- Scheduled Monuments
- Historic Landfill Sites
- HS2 Planting
- Cable Search Corridor

Listed Building Grade

- I
- II
- II*

National Grid

- Towers
- Overhead Lines
- Substations

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	Sep 2025	DCO SUBMISSION	RSK	RSK	EDF

Rosefield Solar Farm

Rosefield Solar Farm

DOCUMENT:
ENVIRONMENTAL STATEMENT, VOLUME 4: TECHNICAL APPENDICES AND NON-TECHNICAL SUMMARY REG 5(2)(A)

TITLE:
FIGURE 4
ENVIRONMENTAL CONSIDERATIONS

PINS REFERENCE NUMBER:
EN010158/APP/6.4

0 0.5 1
Kilometers

Scale: 1:25,000 @ A3

REV 01

Path: rskgroup.sharepoint.com\RSK Group\RSK Environment GIS Projects - 663899 - Rosefield Solar Farm\01 - GIS\P663899

Rosefield
Solar Farm

rosefieldsolarfarm.co.uk