Rosefield Solar Farm

Preliminary Environmental Information Report

Volume 1
Chapter 7: Biodiversity

September 2024

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7. Biodiversity

7.1. Introduction

7.1.1. This chapter presents a preliminary assessment of the likely significant effects arising from the construction, operation (including maintenance) and decommissioning of Rosefield Solar Farm upon biodiversity and should be read in conjunction with the following figures and appendices in **Volume 2** and **Volume 3**, respectively:

- **Figure 1.2: Rosefield Solar Farm Zonal Masterplan;**
- **Figure 3.4: Rosefield Solar Farm Landscape and Ecological Mitigation and Enhancements;**
- **Figure 3.6: Rosefield Solar Farm Indicative Locations Suitable for Main and Satellite Construction Compounds;**
- **Appendix 7.1: Preliminary Ecological Appraisal (2022);**
- **Appendix 7.2: Bat Preliminary Roost Assessment Report (2022);**
- **Appendix 7.3: Wintering Bird Survey Report (2022);**
- **Appendix 7.4: Breeding Bird Survey Report (2022);**
- **Appendix 7.5: Great Crested Newt Habitat Suitability Index and Environmental DNA Report (2023);**
- **Appendix 7.6: Badger Survey Report (2022) - Confidential Appendix;**
- **Appendix 7.7: Preliminary Ecological Appraisal (2024);**
- **Appendix 7.8: Otter and Water Vole Survey Report (2023);**
- **Appendix 7.9: Preliminary Aquatic Survey Report (2023);**
- **Appendix 7.10: Bat Activity Survey Report (2024);**
- **Appendix 7.11: Wintering Bird Survey Report (2024);**
- **Appendix 7.12: Breeding Bird Survey Report (2024);** and
- **Appendix 7.13: Stage 1 Arboricultural Report.**

7.2. Stakeholder engagement

7.2.1. **Table 7.1** provides a summary of the engagement undertaken to date to inform this preliminary assessment.

Table 7.1 – Engagement undertaken to date

Stakeholder	Date and method	Key matters discussed
Natural England	Teams call meeting on 14 September 2023	A high-level introduction to Rosefield Solar Farm that detailed the survey work completed to date, known constraints, current project principles and offsets embedded into the preliminary design and further survey work to be completed was provided. Natural England confirmed intent to designate a new Site of Special Scientific Interest (SSSI), the Bernwood SSSI, to include Sheephouse Wood SSSI, Finemere Wood SSSI Grendon and Doddershall Woods SSSI under one SSSI designation. The citation for Bernwood SSSI will also include Bechstein's bat (*Myotis bechsteinii*), a species which is currently not listed within the citations for the current SSSI designations. The Bernwood SSSI citation will also potentially include all the ancient woodland and agricultural land between the current SSSI designations to cover core roosting, foraging and commuting bat habitat; however this is still being confirmed by Natural England. Natural England advised they would like the Solar PV modules to be set back as far as possible from the SSSI designations and HS2 mitigation planting. They had concerns about Solar PV modules abutting Runts Wood and the surrounding of woodland. Natural England confirmed that they do not have a typical standoff distance, but they would recommend siting Solar PV modules away from woodland. In response to this, the Applicant amended the design of Rosefield Solar Farm to include buffer distances of at least 30 m from all fence lines within Rosefield Solar Farm to statutorily and locally designated wildlife sites. Natural England confirmed that there is a potential displacement effect to bats that will need to be considered, alongside the foraging risk and providing suitable buffer areas. Natural England also noted that consideration would also need to be given to the HS2 mitigation planting so that the benefits of this (both for bats and invertebrates) is not compromised. In response to this, the Applicant amended the design of Rosefield Solar Farm to include buffer distances of at least 20

Stakeholder	Date and method	Key matters discussed
		m from HS2 mitigation planting. Natural England's main concerns are the impacts on ecological designations, in-combination impacts with HS2, East West Rail and the Calvert waste site and Solar PV development in proximity to woodland, particularly around Parcel 1a which is known to be a key area for bats.
Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust	Teams call meeting on 3 November 2023	A high-level introduction to Rosefield Solar Farm was provided to Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust. Berkshire, Buckinghamshire and Oxfordshire Wildlife expressed concern about the proximity of the Site to ecological receptors, noting areas proposed for biodiversity mitigation did not reflect potential for reconnecting woodlands. The Applicant noted these were initial areas and the Project design would be revised to include larger mitigation areas and bigger offsets from woodlands and hedgerow at a more detailed design stage. In response, the Applicant amended the design of Rosefield Solar Farm to include buffer distances of at least 30 m from all fence lines within Rosefield Solar Farm to statutorily and locally designated wildlife sites, and at least 20 m from HS2 mitigation planting and other woodland areas to allow for high quality habitat creation to occur within these buffer areas. In addition, Solar PV modules have been removed from key locations including Parcel 1a, Knowl Hill (Field B17), half of Field B9, and the southern part of Parcel 2 (Fields D27 and D30 to D37).
Natural England	Teams call meeting on 22 February 2024	Meeting held to discuss updates to the zonal masterplan design, discuss scoping opinion comments raised by Natural England, overview of the results of bat activity surveys undertaken and further survey requirements, SSSI extension updates and high-level mitigation proposals. Natural England noted that the revised masterplan progress is heading in a positive direction, in particular the removal of a number of fields that Natural England had flagged previously as being of concern. However they were still concerned about the

Stakeholder	Date and method	Key matters discussed
		inclusion of Solar PV modules in Parcel 1a which have since been removed from the masterplan. Natural England is still progressing with the SSSI notification updates and therefore are still not able to share maps of the new SSSI boundary. No further comment was provided on scoping of surveys.
Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust	Teams call meeting on 21 May 2024	Meeting held to discuss updates to the zonal masterplan design and Outline Landscape and Ecological Management Plan. Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust advised they would likely be objecting to the proposals. An update on ecology surveys undertaken post-scoping was provided. The Applicant provided justification as to why invertebrate surveys, in particular for black hairstreak butterfly, were not proposed to be undertaken. Preliminary assessments have shown habitat within the Site boundary is suitable to support notable and protected invertebrate species and therefore their presence within the Site boundary was assumed. Mitigation was proposed to be incorporated into the design of Rosefield Solar Farm e.g., retention of woodland and hedgerows (other than for access) to ensure no loss of habitats suitable to support species. Overview of key offsets was provided to Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust, who requested justification for buffer distances be included within the impact assessment. Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust was offered the opportunity to attend a site visit. Mitigation and enhancement currently being proposed/considered was discussed and input from Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust into mitigation enhancements was welcomed by the Applicant. Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust advised biodiversity net gain (BNG) needs to be realistic as to what is achievable on Site, with

Stakeholder	Date and method	Key matters discussed
		justification provided along with detail of the proposed management and species mixes. The Applicant advised it is keen to work with Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust on the Bernwood Biodiversity Opportunity Area (BOA). Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust advocated for habitat creation to be managed and maintained in perpetuity after decommissioning. The Applicant advised there is only control over the land for 40 years during the operational (including maintenance) phase. Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust commented solar development in Fields D29 and D28 south of Runts Wood would likely result in isolation of woodland blocks in between. They noted buffers to provide connectivity for wildlife were located between Solar PV modules and the woodland edge, but would ideally want Solar PV modules removed for that section. Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust commented that the areas dedicated to ecological mitigation were looking promising and the design is heading in the right direction including the removal of fields within Parcel 1a from Solar PV development; however, they would like to see more mitigation areas throughout the Site. In response, the Applicant is looking to identify additional areas within the Site where further mitigation can be incorporated into the design. Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust noted that there is limited mitigation proposed in the northern area of the Site boundary, which is of lesser ecological importance. They would welcome additional mitigation in this location and for wider buffers adjacent to watercourses, given the Site is a key bat commuting area which Rosefield Solar Farm can help to link into the wider local landscape. Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust advised that the connections between Shrubs Wood and Sheephouse Wood are also key for bats, and that the mitigation areas located between these

Stakeholder	Date and method	Key matters discussed
		two woodland blocks need to be as large and diverse as possible.
Buckinghamshire Council	Via email 7 August 2024	The Buckinghamshire Council Ecology department have been contacted to discuss Rosefield Solar Farm. An initial meeting is scheduled to be held with the Council Ecology department in early September 2024 to discuss the survey work completed to date, known constraints, current project principles and offsets embedded into the preliminary design and further survey work to be completed.

7.2.2. The above engagement has informed the Applicant's approach to the scope of the design of Rosefield Solar Farm and the preliminary biodiversity assessment which is detailed in the relevant sections below.

7.3. Legislative framework, planning policy and guidance

7.3.1. The preliminary assessment has been undertaken with regard to the following legislation, planning policy and guidance.

Legislation

- The Conservation of Habitats and Species Regulations 2017 (as amended)[1];
- The Wildlife and Countryside Act 1981 (as amended)[2];
- The Countryside and Rights of Way Act 2000[3];
- The Environment Act 2021[4];
- The Natural Environment and Rural Communities Act 2006[5];

[1] Conservation of Habitats and Species Regulations 2017 (as amended). Available online: https://www.legislation.gov.uk/uksi/2017/1012
[2] Wildlife and Countryside Act 1981 (as amended). Available online: https://www.legislation.gov.uk/ukpga/1981/69
[3] Countryside and Rights of Way Act 2000. Available online: https://www.legislation.gov.uk/ukpga/2000/37/contents
[4] Environment Act 2021. Available online: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted
[5] Natural Environment and Rural Communities Act 2006. Available online: https://www.legislation.gov.uk/ukpga/2006/16

- The Hedgerows Regulations 1997[6];
- The Protection of Badgers Act 1992[7];
- The Wild Mammals (Protection) Act 1996[8]; and
- The Invasive Alien Species (Enforcement and Permitting) Order 2019[9].

National Planning Policy

- Overarching National Policy Statement for Energy (NPS EN-1) (2023)[10] – reference to Section 4.6 discusses environmental and biodiversity net gain and Section 5.4 discusses impacts of energy infrastructure on biodiversity and geological conservation;
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2023)[11] – specific reference to Section 2.10. Paragraphs 2.10.65 to 2.10.69 discuss project lifetime and decommissioning, as well as paragraphs 2.10.75 to 2.10.92 that discuss potential impacts to biodiversity and ecology from Solar PV generation projects. Paragraphs 2.10.128 to 2.10.130 discuss mitigation associated with biodiversity and ecological conservation for Solar PV generation projects. Paragraphs 2.10.154 to 2.10.156 discuss impacts to biodiversity and ecological conservation associated with Solar PV generation projects;
- National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (2023)[12] – reference to Section 2.5 that discusses environmental and biodiversity net gain as well as paragraphs 2.9.3 to 2.9.5 and

[6] The Hedgerows Regulations 1997. Available online: https://www.legislation.gov.uk/uksi/1997/1160/contents/made
[7] Protection of Badgers Act 1992. Available online: https://www.legislation.gov.uk/ukpga/1992/51/contents
[8] The Wild Mammals (Protection) Act 1996. Available online: https://www.legislation.gov.uk/ukpga/1996/3
[9] The Invasive Alien Species (Enforcement and Permitting) Order 2019. Available online: https://www.legislation.gov.uk/uksi/2019/527/contents/made
[10] Department for Energy Security and Net Zero (2023). Overarching National Policy Statement for Energy (EN-1). Available online: https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1
[11] Department for Energy Security and Net Zero (2023). National Policy Statement for Renewable Energy Infrastructure (EN-3). Available online: https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3
[12] Department for Energy Security and Net Zero (2023). National Policy Statement for Electricity Networks Infrastructure (EN-5). Available online: https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5

2.10.2 to 2.10.4, which discuss biodiversity conservation, although focussed on overhead power lines;

- National Planning Policy Framework (NPPF) (2023)[13] with reference to Section 15 'Conserving and enhancing the natural environment', specifically paragraphs 180 to 194;
- A Green Future: Our 25 Year Plan to Improve the Environment[14];
- Environmental Improvement Plan 2023[15]; and
- Biodiversity 2020[16].

Local Planning Policy

- Vale of Aylesbury Local Plan (VALP) 2013 – 2033 Adopted Plan (2021)[17]
  - Policy NE1 Biodiversity and Geodiversity; and
  - Policy NE2 River and stream corridors.
- Forward to 2030: Biodiversity Action Plan (2023)[18]
  - Objective 1 - Retain, enhance, expand and create priority habitats everywhere, with a focus on BOAs and strategically-identified areas;

[13] Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities (2023). National Planning Policy Framework. Available online: https://www.gov.uk/government/publications/national-planning-policy-framework--2
[14] HM Government (2018). A Green Future: Our 25 Year Plan to Improve the Environment. Available online: https://assets.publishing.service.gov.uk/media/5ab3a67840f0b65bb584297e/25-year-environment-plan.pdf
[15] HM Government (2023). Environmental Improvement Plan 2023: First revision of the 25 Year Environment Plan. Available online: https://assets.publishing.service.gov.uk/media/64a6d9c1c531eb000c64fffa/environmental-improvement-plan-2023.pdf
[16] Department for Environment, Food and Rural Affairs (2020). Biodiversity 2020: A strategy for England's wildlife and ecosystem services. Available online: https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services
[17] Vale of Aylesbury Local Plan (VALP) 2013 – 2033 Adopted Plan (2021). Available online: https://buckinghamshire-gov-uk.s3.amazonaws.com/documents/Aylesbury_local_plan_L46JWaT.pdf
[18] The Buckinghamshire & Milton Keynes Natural Environment Partnership (2023). Forward to 2030: Biodiversity Action Plan. Available online: https://bucksmknep.co.uk/download/3338/?tmstv=1692281173

- Objective 2 - Increase the overall land area of wildlife-important habitats and of land positively managed for wildlife and high nature value habitats;
- Objective 3 - Enhance existing habitats and improve habitat condition;
- Objective 4 - Create and manage buffers around existing and new areas of priority habitat and other core and high-quality biodiversity and habitat sites following best practice guidelines;
- Objective 5 - Connect quality habitats across the landscape to enable species movement across larger areas to improve habitat and species resilience to external pressures, with a focus on connectivity within and between BOAs as well as into the wider landscape;
- Objective 6 - Improve people's connectedness with nature, so that communities across Buckinghamshire and Milton Keynes value and understand the role of nature in mental and physical wellbeing; and
- Objective 7 - Ensure biodiversity is a key factor in the design of the urban environment and of new developments.

Guidance

- The Guidelines for Ecological Impact Assessment in the UK and Ireland[19].

7.4. Study area

7.4.1. The Study areas used for this preliminary assessment are set out in **Table 7.2**. Different Study areas have been used depending on the receptor assessed.

7.4.2. The surveys prior to 2024 (**Appendices 7.1** to **7.6** in **Volume 3**) were based on an earlier, reduced version of the Site boundary, which did not include the cable route search area. Since the Site boundary has been updated , further surveys have been undertaken to encompass the additional areas (including the cable route search area). Further survey work of Fields SA55,SA56, SA57, SA58 and SA59 is currently ongoing for all relevant receptors detailed in **Table 7.2** to inform the design of Rosefield Solar Farm, and once specific cable routes are identified, further surveys will be undertaken pre-construction where appropriate. In some instances, land access permission was not forthcoming and therefore an

[19] Chartered Institute of Ecology and Environmental Management (2022). Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater, Coastal and Marine (Version 1.2). Chartered Institute of Ecology and Environmental Management, Winchester.

assumption has been made regarding the suitability of these areas to support sensitive ecological receptors.

7.4.3. The results of this survey work will be presented in the ES submitted in support of the DCO application. Notwithstanding this, the survey data collected to date forms a robust baseline in which to inform this preliminary assessment.

Table 7.2 – Biodiversity Study areas

Receptor	Study area
Statutory designated sites	A background data search for statutory designated sites has been completed within the Site boundary and up to 2 km from the Site boundary, extended to 10 km from the Site boundary for Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites.
Non-statutory designated sites	A background data search for non-statutory designated sites has been completed within the Site boundary and up to 2 km from the Site boundary.
Habitats	The survey Study area for the preliminary ecological appraisal of habitats comprises the Site boundary. The survey Study area for aquatic preliminary surveys are the watercourses and ponds located within the Site boundary and up to 25 m from the Site boundary.
Invasive species	The survey Study area for invasive species comprises the Site boundary.
Rare and notable arable (non-crop) plants	The survey Study area for rare and notable arable (non-crop) plants comprises the Site boundary.
Protected and noteworthy species	A background data search for protected and noteworthy species has been completed within the Site boundary and up to 2 km of the Site boundary.
Terrestrial invertebrates	The Study area for terrestrial invertebrates comprises the Site boundary.
Fish	The Study area for fish comprises the Site boundary.
Amphibians	The survey Study area for amphibians is the ponds and terrestrial habitat within the Site boundary and ponds within 500 m of the Site boundary.
Reptiles	The Study area for reptiles comprises the Site boundary.

Receptor	Study area
Bats	The survey Study area for bat activity surveys is the distinct land parcels: • Parcel 1; • Parcel 1a; • Parcel 2; and • Parcel 3. Preliminary ground level bat roost assessments were completed in 2022 before the current Site boundary was determined. This PEIR only reports on the findings of the surveys completed to date within the current Site boundary. Therefore the Study area for ground level bat roost assessments comprises the following areas: • Parcel 1 – excluding Fields B5, B13, B23 (north) and B23 (south); • Parcel 1a; • Parcel 2 – excluding Fields D4, D6, D7, D44, D45, D30, D31, D32, D33, D34, D35, D36 and D37; and • Parcel 3 – excluding Fields E20, E21, E22 and E23. In addition, trees within previous versions of the cable routes (all are located within the current cable route search area) and the following areas of woodlands outside of the Site boundary have also been subject to ground level roost assessment: Shrubs Wood, Decoypond Wood, woodland block north-west of Decoypond Wood, Sheephouse Wood, Romer Wood, Balmore Wood and Runt's Wood.
Water voles and otters	The survey Study area for otter and water vole are the watercourses and ponds located within Parcels 1, 1a, 2 and 3 and up to a 200 m buffer from the Parcel boundaries where access allowed.
Badgers	The survey Study area for badgers comprises the Site boundary and a 50 m buffer from the Site boundary. Badger surveys were undertaken in 2022 before the current configuration of the Site boundary was determined. This preliminary assessment only reports on the findings of the surveys completed to date within the current Site boundary. Therefore the Study area for badgers comprises the following within the Site boundary, and where access

Receptor	Study area
	allowed, the survey area was extended to 50 m beyond the Site boundary: • Parcel 1 – excluding Fields B5, B13, B23 (north) and B23 (south); • Parcel 1a; • Parcel 2 – excluding Fields D4, D6, D7, D44, D45, D30, D31, D32, D33, D34, D35, D36 and D37; and • Parcel 3 - excluding Fields E20, E21, E22 and E23. In addition, areas associated with previous versions of cable routes located within the current cable route search area were also subject to badger surveys.
Breeding bird surveys	The survey Study area for breeding bird surveys is the distinct land parcels: • Parcel 1; • Parcel 1a; • Parcel 2; and • Parcel 3.
Wintering birds	The survey Study area for wintering bird surveys is the distinct land parcels: • Parcel 1; • Parcel 1a; and • Parcel 2. Parcel 3 was surveyed in 2021-2022 (excluding Fields E20, E21, E22 and E23 which were subsequently added to the Site boundary). It was not possible to undertake wintering bird surveys within Parcel 3 in 2023-2024. Given the habitats located within Parcel 3 are of similar composition to the areas that were surveyed, they are considered likely to support a similar species assemblage.

7.5. Establishing baseline conditions

7.5.1. As outlined in **Table 7.2**, a background data search from Buckinghamshire and Milton Keynes Environmental Records Centre has been undertaken.

7.5.2. The following surveys have been undertaken to inform the biodiversity conditions:

- Preliminary Ecological Appraisal undertaken in September 2021 and February 2022 (See **Appendix 7.1**) in **Volume 3**;
- Bat preliminary roost assessment undertaken in March 2022 (See **Appendix 7.2** in **Volume 3**);
- Wintering bird surveys undertaken October 2021-March 2022 (See **Appendix 7.3** in **Volume 3**);
- Breeding bird surveys undertaken March-June 2022 (See **Appendix 7.4** in **Volume 3**);
- Great crested newt environmental DNA survey undertaken in May 2022 and April 2023 (See **Appendix 7.5** in **Volume 3**);
- Badger survey undertaken December 2021-March 2022 (**Appendix 7.6 Confidential Appendix**);
- Preliminary Ecological Appraisal undertaken in June, July, August, October 2023 and January and May 2024 (See **Appendix 7.7** in **Volume 3**);
- Hedgerows Regulations survey undertaken in June, July, August and October 2023 and January and May 2024 (See **Appendix 7.7** in **Volume 3**)
- Arable (non-crop) plant survey undertaken in June 2023 (See **Appendix 7.7** in **Volume 3**);
- River condition assessment survey undertaken in September 2023 (to inform the BNG assessment);
- Otter and water vole surveys undertaken in June and August 2023 (See **Appendix 7.8** in **Volume 3**);
- Aquatic preliminary surveys undertaken in June 2023 (See **Appendix 7.9** in **Volume 3**);
- Bat activity surveys undertaken July 2022-September 2023 (See **Appendix 7.10** in **Volume 3**);
- Wintering bird surveys undertaken November 2023-February 2024 (See **Appendix 7.11** in **Volume 3**);
- Breeding bird surveys undertaken March-July 2024 (See **Appendix 7.12** in **Volume 3**); and
- Arboriculture surveys undertaken April-June 2024 (See **Appendix 7.13** in **Volume 3**).

7.6. Environmental baseline

7.6.1. The baseline conditions described below relate to the Study areas explained within **Table 7.2**. The description does not include areas within the Site boundary yet to be surveyed. Surveys of these areas will be undertaken in 2024, the results of which will be presented in the ES.

7.6.2. The existing ecological baseline is based on both desk and field-based studies undertaken to date (see **Sections 7.4** and **7.5** above).

Statutory designated sites

7.6.3. There are no internationally protected statutory designated nature conservation sites within the Site boundary or within 10 km of the Site boundary.

7.6.4. There are no nationally protected statutory designated nature conservation sites within the Site boundary. There are three nationally protected statutory designated nature conservation sites within 2 km of the Site boundary. Initial discussions with Natural England have indicated that the boundary of the SSSIs listed below will be extended. It is not yet known whether this extension will include areas within the Site boundary:

- Sheephouse Wood SSSI – adjacent to Parcel 1 and 1a;
- Finemere Wood SSSI – adjacent to Parcel 2; and
- Grendon and Doddershall Woods SSSI - 1.36 km south-west of Parcel 1a.

7.6.5. In addition, whilst recognising that Ham Home-cum-Hamgreen Woods SSSI is located 3.2 km south-west of the Site boundary and therefore outside of the Study area, the impact risk zone boundary for this SSSI intersects with the Site boundary. The locations of these sites are detailed in **Volume 2, Figure 7.1**.

Non-statutory designated sites

7.6.6. One non-statutory designated site is located within the Site boundary, this being Bernwood BOA, which overlaps with Parcel 1, 1a and 2 and the cable route search area.

7.6.7. There are 22 non-statutory designated sites within 2 km of the Site boundary, namely 14 Local Wildlife Sites (LWS), five Biological Notification Sites (BNS), two Wildlife Trust Reserves (WTR) and one Biodiversity BOA.

7.6.8. Those outside the Site boundary but directly adjacent are:

- Shrub Woods LWS –adjacent to Parcel 1;
- Decoypond Wood LWS – west of Parcel 1;

- Romer Wood LWS – north-east of Parcel 1a;
- Runts Wood LWS – adjacent to Parcel 2;
- Finemere WTR – south of Parcel 2;
- Home Wood, Middle Claydon LWS – adjacent to cable route search area;
- Balmore Wood LWS - adjacent to cable route search area; and
- Greatsea Wood LWS – adjacent to cable route search area.

7.6.9. The remaining sites are:

- Calvert Railway Station LWS – 108 m west of Parcel 1;
- Calvert Jubilee WTR – 277 m west of Parcel 1;
- Calvert Jubilee Nature Reserve LWS – 277 m west of Parcel 1;
- Grendon and Doddershall Meadows LWS – 585 m west of the Site boundary;
- Area north-west of Calvert Brickworks BNS – 741 m west of Parcel 1;
- Track leading to railway BNS – 790 m south of Parcel 1a;
- Calvert Brick Pits, Great Moor Sailing Club LWS – 960 m west of Parcel 1;
- Redland Bridge, Steeple Claydon BNS – 1.35 km north of Parcel 1;
- Wood between Lawn Hill and Dunsty Hill LWS – 1.36 km south-west of Parcel 1;
- Grassland near Addington BNS – 1.37 km north-west of the Site boundary;
- Stonehill Lane LWS – 1.44 km south-east of cable route search area;
- Grendon Underwood Meadows LWS – 1.46 km south-west of Parcel 1a;
- Upper Ray BOA – 1.46 km south-east of Parcel 1a; and
- South Lake, Addington BNS – 1.62 km north-west of the Site boundary.

Other notable sites

7.6.10. No areas of ancient woodland are located within the Site boundary. 21 areas of ancient woodland are located directly adjacent to the Site boundary in multiple locations. These comprise ancient and semi-natural woodland and ancient replanted woodland parcels, located within Shrubs Wood, Sheephouse Wood, Home Wood, Romer Wood, Greatsea Wood, Decoypond Wood, Finemere Wood, Balmore Wood and Runt's Wood.

7.6.11. There are a further 32 areas of ancient woodland within 2 km of the Site boundary.

Habitats

7.6.12. The Site predominantly consists of agricultural fields (mostly arable with some grassland) interspersed with hedgerows, small woodland blocks, ponds and farm access tracks. Several minor watercourses run adjacent to the Site boundary, including the Claydon Brook and tributaries, alongside small field drains and ditches that run parallel to numerous field boundaries.

7.6.13. The following UK Habitat survey habitats and corresponding habitat code were recorded as present within, and adjacent to, the Site during the preliminary ecological appraisal surveys undertaken in 2023 and 2024 (see **Figure 7.2**in **Volume 3**):

- Cereal crops (c1c);
- Non-cereal crops (c1d);
- Other neutral grassland (g3c);
- Modified grassland (g4);
- Lowland mixed deciduous woodland (w1f);
- Other woodland; broad-leaved (w1g);
- Line of trees (w1g6);
- Mixed scrub (h3h);
- Bramble scrub (h3d);
- Reedbeds (f2e);
- Other wetlands (f2f);
- Buildings (u1b5);
- Artificial unvegetated, unsealed surface (u1c);
- Hedgerow (priority habitat) (h2a);
- Standing open water (r1) – ponds;
- Other rivers and streams (r2b); and
- Individual rural trees.

Invasive non-native species

7.6.14. The background desk study did not identify any records of invasive non-native floral or faunal species within the Site boundary. However the study did identify several invasive non-native floral species within 2 km of the Site boundary, comprising:

- Indian Balsam (*Impatiens glandulifera*);
- Canadian Waterweed (*Elodea canadensis*);
- Variegated Yellow Archangel (*Lamiastrum galeobdolon subsp. Argentatum*); and
- Wall Cotoneaster (*Cotoneaster horizontalis*).

7.6.15. The background desk study also identified several invasive non-native faunal species within 2 km of the Site boundary, comprising:

- Mandarin duck (*Aix galericulata*);
- Ruddy duck (*Tadorna ferruginea*);
- Barnacle goose (*Branta leucopsis*);
- Bar-headed goose (*Anser indicus*);
- Canada goose (*Branta canadensis*);
- Snow goose (*Anser caerulescens*);
- Ring-necked parakeet (*Psittacula krameri*);
- Black swan (*Cygnus atratus*);
- Zander (*Stizostedion lucioperca*);
- Wels catfish (*Silurus glanis*);
- Chinese water deer (*Hydropotes inermis*); and
- American mink (*Mustela vison*).

7.6.16. During the preliminary ecological appraisal surveys undertaken in 2023 and 2024, no evidence of invasive non-native species was identified within the Site boundary; however, a pond located 9 m from the cable route search area boundary was found to contain New Zealand Pigmyweed (*Crassula helmsii*),an invasive non-native species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Plants

7.6.17. The background desk study returned one plant record within the Site boundary of Good-King-Henry (*Chenopodium bonus-henricus*), a species listed as vulnerable on the Red List conservation status of Great Britain. Several plant records were located within the areas of woodland adjacent to the Site.

7.6.18. The background desk study returned records of 21 notable plant species within 2 km of the Site boundary. This included true Fox-sedge (*Carex vulpina*), Juniper (*Juniperus communis*), Grape-hyacinth (*Muscari neglectum*), Tubular Water-dropwort (*Oenanthe fistulosa*) (species listed under Section 41 of the Natural Environment and Rural Communities Act

2006), Bluebell (*Hyacinthoides non-scripta*) (Wildlife and Countryside Act 1981 (as amended) Section 8) and Good-King-Henry.

7.6.19. During the preliminary ecological appraisal surveys undertaken in 2023, Bluebell was recorded within areas of woodland. No other notable plant species were recorded within the Site boundary.

Invertebrates

7.6.20. The background desk study identified records within the Site boundary for black hairstreak (*Satyrium pruni)*, white admiral (*Limenitis camilla*), white-letter hairstreak (*Satyrium w-album*) and brown hairstreak (*Thecla betulae*), which are butterfly species that are included within the citations for Sheephouse Wood SSSI and Finemere Wood SSSI.

7.6.21. The background desk study identified 143 records of protected or otherwise notable invertebrates within 2 km of the Site, including wood white (*Leptidea sinapis*), which is included within the citations for Sheephouse Wood SSSI and Finemere Wood SSSI.

7.6.22. During the preliminary ecological appraisal survey undertaken in 2023 and 2024, the majority of the habitats present within the Site were considered likely to support common assemblages of invertebrate species typical of arable field margins, hedgerows, woodland and scrub, and grassland habitats. The three butterfly species included within the citations for Sheephouse Wood SSSI and Finemere Wood SSSI will use both woodland and hedgerow margin habitat. The food source for black and brown hairstreak caterpillars, Blackthorn (*Prunus spinosa*), was recorded abundantly across the Site within hedgerows and woodland areas. Areas of standing and fallen deadwood were also noted throughout the Site which were considered suitable to support deadwood invertebrate species.

7.6.23. Species observed during the preliminary ecological appraisal surveys undertaken in June-August 2023 comprised:

- Cinnabar moth (*Tyria jacobaeae*);
- Marbled white (*Melanargia galathea*);
- Meadow brown (*Maniola jurtina*);
- Ringlet (*Aphantopus hyperantus*);
- Comma (*Polygonia c-album*);
- Gatekeeper (*Pyronia tithonus*);
- Small heath (*Coenonympha pamphilus*);
- Large white (*Pieris brassicae*);
- Small skipper (*Thymelicus sylvestris*);

- Small tortoiseshell (*Aglais urticae*);
- Large skipper (*Ochlodes sylvanus*); and
- Purple hairstreak (*Favonius quercus*).

7.6.24. Several yellow meadow ant (*Lasius flavus*) hills were also recorded within the Site boundary.

7.6.25. Natural England has released several reports in support of the Bernwood SSSI designation[20,21,22]. Invertebrate surveys undertaken within the Bernwood area have highlighted that the woodland areas, scrub and hedgerow habitats support a diverse range of important invertebrate species, including black hairstreak butterfly. The woodlands and hedgerows in the area make a significant contribution towards the maintenance of the local meta-population and colonies of black hairstreak butterfly, which are considered important in a national context.

Fish

7.6.26. No records of fish were identified within the Site boundary. However the background desk study identified records of five fish species within 2 km of the Site boundary, comprising spined loach (*Cobitis taenia*) (a species listed under Section 41 of the Natural Environment and Rural Communities Act 2006), bullhead (*Cottus gobio*), common carp (*Cyprinus carpio*) and the invasive non-native species wels catfish (*Silurus glanis*) and zander (*Stizostedion lucioperca*).

7.6.27. The Claydon Brook, along with several larger waterbodies, were considered to provide suitable habitat for supporting common fish species.

Amphibians

7.6.28. No records of amphibians were identified within the Site boundary. However the background desk study identified records of great crested newt (*Triturus cristatus*) within 2 km of the Site boundary. A total of eight

[20] Natural England (2023). Bernwood Area Invertebrate Surveys 2017-2021 NERR129. Available online: https://publications.naturalengland.org.uk/file/6350849706819584
[21] Natural England (2023). Bernwood Invertebrate Surveys 2021. Saproxylic and Hymenoptera focused surveys in Ham Home-cum-Hamgreen Woods SSSI and Grendon and Doddershall Woods SSSI, Buckinghamshire. Available online: https://publications.naturalengland.org.uk/file/5774523144863744
[22] Natural England (2024). A Survey of the Black Hairstreak Butterfly in North Buckinghamshire. The results of surveys of the distribution of Black Hairstreak, Satyrium pruni in a complex of woodlands in the Bernwood Area. Available online: https://publications.naturalengland.org.uk/file/4647678026448896

great crested newt Natural England class survey licence returns between 2016-2017 were identified within Parcel 1, indicating that great crested newt were present.

7.6.29. The background desk study also identified records of common toad (*Bufo bufo*), common frog (*Rana temporaria*), palmate newt (*Lissotriton helveticus*) and smooth newt (*Lissotriton vulgaris*) within 2 km of the Site boundary.

7.6.30. The amphibian surveys undertaken in 2022 and 2023 identified 12 ponds within the Site and within 500 m from the Site boundary that had a confirmed positive presence of great crested newt environmental DNA.

7.6.31. The areas of woodland, grassland margins and hedgerows within the Site boundary were considered suitable to provide foraging, refuge and hibernation opportunities for amphibian species, including great crested newts.

Reptiles

7.6.32. No records of reptiles were identified within the Site boundary. The background desk study identified records of grass snake (*Natrix helvetica*), common lizard (*Zootoca vivipara*) and slow-worm (*Anguis fragilis*) within 2 km of the Site boundary.

7.6.33. Within the Site, most of the land comprised arable and modified grassland fields which are considered sub-optimal to support reptiles. Smaller areas of rough grassland and scrub habitats were considered to provide suitable sheltering and foraging habitat to support small numbers of common reptile species, but these were limited in extent.

Birds

7.6.34. The background desk study identified one record of priority bird species, the aquatic warbler (*Acrocephalus paludicola*), within the Site boundary.

7.6.35. The background desk study identified records of 147 priority bird species within 2 km of the Site included on the Birds of Conservation Concern Red and Amber Lists[23], UK priority species under Natural Environment and

[23] The Birds of Conservation Concern Red, Amber and Green lists categorise the UK's regularly occurring bird species according to their level of conservation concern. Although these listings confer no legal protection, they are useful in guiding conservation action for individual species when birds may be affected by plans or projects. Red list species are species considered to be of high conservation concern. Amber list species are species considered to be of medium conservation concern.

Rural Communities Act 2006 and Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), with multiple records identified adjacent to the Site boundary, predominantly within the areas of woodland.

7.6.36. A total of 59 bird species were recorded during wintering bird surveys undertaken between October 2021 and March 2022. Of these 59 bird species, 34 species met at least one of a range of criteria relating to conservation importance including species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). This included species such as little egret (*Egretta garzetta*), red kite (*Milvus milvus*), golden plover (*Pluvialis apricari*), peregrine falcon (*Falco peregrinus*), fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*).

7.6.37. A total of 60 bird species were recorded during wintering bird surveys undertaken between November 2023 and February 2024. These included three species included on Annex 1 of the EC Birds Directive, 11 species included under Section 41 Species of Principal Importance of the Natural Environment and Rural Communities Act 2006, 12 species included on the Birds of Conservation Concern Red List and 18 species included on the Birds of Conservation Concern Amber List. The surveys identified that Parcels 1 and 2 were of greatest value to wintering birds.

7.6.38. A total of 57 species (including species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and Annex 1 of the EU Birds Directive) were recorded during the breeding bird surveys undertaken between March and June 2022. Of the 57 species recorded within the survey area, 49 were considered to be breeding, including one species on Annex 1 of the EU Birds Directive (red kite). Little egret is also listed on Annex 1 of the EU Birds Directive and was not identified as breeding within the survey area, but was recorded flying over the Site. Three species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) were confirmed to be holding breeding territories within the survey area or were thought to have probable/possible territories, comprising:

- Red kite;
- Hobby (*Falco Subbuteo*); and
- Barn owl (*Tyto alba*).

7.6.39. In addition, 13 species listed as a Priority Species in the UK were also confirmed to be holding breeding territories within the survey area or were thought to have probable/possible territories, comprising:

Green list species have stable or increasing populations and are not currently of conservation concern.

- Grey partridge (*Perdix perdix*);
- Cuckoo (*Cuculus canorus*);
- Marsh tit (*Poecile palustris*);
- Skylark (*Alauda arvensis*);
- Song thrush (*Turdus philomelos*);
- Spotted flycatcher (*Muscicapa striata*);
- House sparrow (*Passer domesticus*);
- Dunnock (*Prunella modularis*);
- Yellow wagtail (*Motacilla flava*);
- Bullfinch (*Pyrrhula pyrrhula*);
- Linnet (*Carduelis cannabina*);
- Yellowhammer; and
- Reed bunting (*Emberiza schoeniclus*).

7.6.40. Ten species included on the Birds of Conservation Concern Red List and 11 species included on the Birds of Conservation Concern Amber List were either confirmed to be holding breeding territories within the survey area, or were thought to have probable/possible territories:

7.6.41. A total of 73 bird species, up to 49 of which were breeding within the Site, were recorded were recorded during the breeding bird surveys undertaken between March and July 2024. Species recorded breeding, or potentially breeding, during the 2024 field surveys included two species included on Annex 1 of the EC Birds Directive comprising peregrine falcon and red kite, four species included on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), comprising barn owl, hobby, peregrine falcon and red kite.

7.6.42. In addition, 13 listed as a Priority Species in the UK were recorded breeding or potentially breeding during the 2024 field surveys comprising:

- Bullfinch;
- Cuckoo;
- Dunnock;
- Grasshopper warbler;
- Grey partridge;
- House sparrow;
- Linnet;
- Reed bunting;

- Skylark;
- Song thrush;
- Tree sparrow;
- Yellow wagtail; and
- Yellowhammer.

7.6.43. Eleven species included on the Birds of Conservation Concern Red list and 11 species included on the Birds of Conservation Concern Amber list.

7.6.44. Arable fields, hedgerows and scrub within Parcels 1 and 2 were of greatest value to breeding birds in 2024, with Parcel 2 supporting the greatest diversity of farmland bird species including grey partridge, hobby, tree sparrow and yellow wagtail. Parcel 3 supported a relatively narrow breeding bird assemblage including scarce breeding species such as grasshopper warbler, peregrine and yellow wagtail. Parcel 1a was of comparatively low value for breeding birds.

7.6.45. During the preliminary ecological appraisal surveys undertaken in June-August 2023 and May 2024, the areas of woodland and hedgerow within the Site were assessed as suitable for providing foraging and breeding opportunities for a range of breeding birds, in particular passerine species. The areas of grassland and arable field margins were considered suitable habitat for ground nesting species as outlined above. Foraging raptors were recorded frequently across the Site, including red kite and buzzard (*Buteo buteo*), and barn owl boxes were also recorded across the Site boundary.

Bats

7.6.46. The background desk study identified one record of Bechstein's bat within the Site boundary.

7.6.47. The background desk study returned multiple records of bat roosts, foraging and commuting activity for 13 bat species and four groups that could not be identified to species level within 2 km of the Site boundary comprising:

- Bechstein's bat;
- Brandt's bat (*Myotis brandtii*);
- Serotine (*Eptesicus serotinus*);
- Leisler's bat (*Nyctalus leisleri*);
- Noctule bat (*Nyctalus noctule*);
- Daubenton's bat (*Myotis daubentonii*);
- Whiskered bat (*Myotis mystacinus*);

- Whiskered/Brandt's bat (*Myotis mystacinus/brandtii*);
- Natterer's bat (*Myotis nattereri*);
- Myotis species (*Myotis spp.*);
- Western barbastelle (*Barbastella barbastellus*);
- Common pipistrelle (*Pipistrellus pipistrellus*);
- Soprano pipistrelle (*Pipistrellus pygmaeus*);
- Nathusius's pipistrelle (*Pipistrellus nathusii*);
- Pipistrelle species (*Pipistrellus spp.*);
- Brown long-eared bat (*Plecotus auritus*); and
- Unidentified bat species (*Chiroptera*).

7.6.48. High concentrations of records were located within the woodland blocks adjacent to the Site boundary, including multiple records of Bechstein's bats located within Finemere Wood, Sheephouse Wood, Home Wood, Shrubs Wood and Decoypond Wood.

7.6.49. The preliminary bat roost survey undertaken in 2022 identified multiple trees within the Site boundary as having high and moderate potential to support roosting bats.

7.6.50. During the preliminary ecological appraisal surveys undertaken in 2023 and 2024 of the current Site boundary, multiple trees and woodland blocks were assessed as having potential to support roosting bats, as well as an old barn present on Site. The arable and modified grassland fields were assessed to be of limited value to foraging bats. The hedgerows, field margins, woodland and pond habitats were assessed as offering highly suitable foraging and commuting habitat.

7.6.51. Walked bat activity transect surveys were undertaken on four occasions between July 2022 and September 2023, with static automated bat detectors placed within each transect route on four occasions between September 2022 and September 2023.

7.6.52. Based on the bat activity recorded during the walked transect surveys and the static automated detector surveys undertaken between July 2022 and September 2023, the Site is considered to support an assemblage of at least ten bat species comprising common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's, serotine, brown long-eared, barbastelle, Daubenton's bat and Myotis species that could not be identified to species level. There are six resident species of Myotis species in the UK, all with similar call characteristics, and therefore it is likely that the Myotis calls represent more than one species. From work carried out

for HS2[24], it is known that five species of Myotis are present within the vicinity of the Site boundary, comprising Bechstein's bat, whiskered bat, Brandt's bat, Daubenton's bat and Natterer's bats. This means the Site is considered likely to support an assemblage of 13 bat species.

7.6.53. The majority of activity recorded during the transects was of common pipistrelle bats across all Parcels, followed by soprano pipistrelle, in line with the relative abundance of these species as well as the relative detectability of their calls. Based on professional judgement, activity levels of all species recorded during the walked transects were generally low across the Site and all Parcels, with key areas of bat activity identified in the following locations:

- Within Parcel 1 along the margins of Shrubs Wood, a hedgerow extending east from Shrubs Wood, the margins of Sheephouse Wood and the hedgerows connecting Shrubs Wood and Sheephouse Wood;
- Within Parcel 1a, activity was distributed across the Site, recorded along all hedgerows and the margins of Sheephouse Wood and Romer Wood;
- Within Parcel 2, activity was predominantly concentrated around the margins of Runts Wood and Finemere Wood, and a hedgerow extending south-west from Runts Wood and the hedgerows extending east from Finemere Wood; and
- Within Parcel 3, activity was predominantly concentrated along the eastern margin of the Site, along the western boundary of Claydon Brook that forms the eastern Site boundary.

7.6.54. Activity by Myotis bats was recorded on 59 occasions in total during the walked transect surveys. Calls could not be separated to species level and therefore are likely to include registrations, amongst other Myotis bat species, of the Habitats Directive Annex II listed Bechstein's bat known to roost within Sheephouse Wood adjacent to Parcels 1 and 2. Myotis bat registrations were made at all of the automated static detector locations during each monitoring occasion, except for Parcel 1 West location A in June 2023, Parcel 1a location B in June 2023, Parcel 2 north-east location B in August 2023, Parcel 2 south-west location B in September 2022 and Parcel 2 north location B in August 2023 (see **Figure 12** in **Appendix 7.10** in **Volume 3**).

7.6.55. Activity by the Habitats Directive Annex II listed barbastelle bat was recorded on three occasions during the walked transect surveys.

[24] Natural England (2024) The Bernwood population of Bechstein's Bats. A non-Technical Summary (NECR558). Available online: https://publications.naturalengland.org.uk/publication/5094058272489472#:~:text=The%20report%20finds%20that%20the,future%20changes%20to%20its%20habitat

Barbastelle bat were confirmed, or possible registrations were made, at all automated static detector locations, although not during every monitoring occasion.

7.6.56. From work carried out for HS2, Natural England has concluded that the population of Bechstein's bat of the Bernwood area, whilst not in Favourable Conservation Status nationally, and whilst genetically and geographically isolated locally, is nonetheless 'stable and viable'. However the conservation status of the species could be threatened by expansion of built developments, habitat fragmentation and loss, and uncoordinated land management[24].

Hazel dormouse

7.6.57. The background desk study identified no records of hazel dormouse (*Muscardinus avellanarius*) within the Site boundary or within 2 km of the Site boundary.

7.6.58. During the preliminary ecological appraisal survey undertaken in June-August 2023 the areas of woodland within the Site were considered sub-optimal to support dormice. The majority of the woodland areas had a lack of diverse and dense understorey and limited amounts of Hazel (*Corylus avellana*), although other species used by dormice, including Oak (*Quercus* spp.), Bramble (*Rubus fruticosus*), Ash (*Fraxinus excelsior*), Birch (*Betula* spp.), and Hawthorn (*Crataegus monogyna*) were recorded. The hedgerows within the Site were considered to provide suitable habitat for dormice and provide connectivity to the wider landscape.

Otter and water vole

7.6.59. No records of otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) were identified within the Site boundary. The background desk study identified records of otter and water vole within 2 km of the Site boundary.

7.6.60. During the otter and water vole surveys undertaken in June and August 2023 no signs of water voles were observed. The majority of watercourses and ditches present within the Site were dry and lacked substrate suitable for burrowing and emergent vegetation for foraging.

7.6.61. The Claydon Brook was considered suitable to provide commuting and foraging opportunities for otter, whilst woodland habitat could provide suitable resting or lying up opportunities. One otter couch, one spraint and one potential holt was recorded along the watercourse running along the eastern boundary of Parcel 3.

Badger

7.6.62. The background desk study identified multiple records of badger within 2 km of the Site boundary, including records of badger setts located within

the Site boundary. A review of previous reports identified multiple badger setts located within and adjacent to the Site boundary including main, annex, subsidiary and outlier setts.

7.6.63. During the preliminary ecological appraisal surveys undertaken in 2023 and 2024, habitats within the Site were noted as being potentially suitable for badger, comprising grassland, scrub, and woodland which together provide suitable foraging and resting opportunities for badgers. Several badger setts were identified and multiple badger latrines and mammal paths were recorded throughout the Site boundary.

Other species

7.6.64. The background desk study identified records of polecat (*Mustela putorius*), brown hare (*Lepus europaeus*), European hedgehog (*Erinaceus europaeus*) and harvest mouse (*Micromys minutus*) within 2 km of the Site boundary. No records were identified within the Site boundary.

7.6.65. During the preliminary ecological appraisal surveys undertaken in June-August 2023, several brown hare and roe deer (*Capreolus capreolus*) were noted within arable field areas.

7.6.66. Habitats within the Site, including woodland, hedgerows and grassland, were considered suitable for European hedgehog. Hedgehogs occupy a range of lowland habitats with enough cover to allow nesting. The areas of woodland, hedgerows and grassland within the Site provide suitable foraging habitat for European hedgehogs, with the hedgerows providing connectivity to suitable habitat in the wider landscape. No evidence of European hedgehog was noted during surveys.

7.6.67. Polecat favour a range of habitat types including woodland and farmland habitats; these are present abundantly within the Site boundary. No evidence of polecat was noted during surveys.

7.6.68. Habitats suitable to support harvest mouse present within the Site included the hedgerows and areas of grassland around the arable field margins. No evidence of harvest mouse was noted during surveys.

Future baseline

7.6.69. In terms of the future baseline in the absence of Rosefield Solar Farm, the Site would likely remain in agricultural management. Long-term climatic predictions suggest that warmer, wetter winters and drier summers will become more frequent, with more extreme weather events likely. This may affect the type of crops grown and, when combined with climate change, may lead to an increase in the population and distribution of some species identified or currently absent, but conversely a decrease in other species. No significant changes to the baseline are envisaged in the short-term.

7.7. Mitigation embedded into the design

7.7.1. This preliminary assessment has been based on the principle that measures have been 'embedded' into the design of Rosefield Solar Farm to remove potential likely significant effects as far as practicable, for example by the considered placement of infrastructure. Embedded (primary) environmental mitigation measures that are considered to be an inherent part of Rosefield Solar Farm are detailed within **Chapter 5: Approach to the EIA**. The embedded mitigation measures relevant to biodiversity and the benefits these provide are outlined in **Table 7.3** below and are detailed and in **Figure 3.4** in **Volume 2**.

Table 7.3 – Embedded mitigation measures relevant to biodiversity

Embedded mitigation measures relevant to biodiversity	Benefit
A minimum 20 m offset from HS2 woodland planting (adjacent to Parcel 1) to the fence line of the Solar PV modules. A minimum 30 m offset from all fence lines within Rosefield Solar Farm to statutorily and locally designated wildlife sites (i.e. Sheephouse Wood SSSI). A minimum 30 m offset from all fence lines within Rosefield Solar Farm to Ancient Woodlands (i.e. Runts Wood). A minimum 20 m offset from all fence lines within Rosefield Solar Farm to existing woodlands. A minimum 10 m offset from all fence lines within Rosefield Solar Farm to existing hedgerows.	Significant buffer that allows for habitat creation to occur such as species-rich grassland, tree and scrub planting, and pond restoration. A buffer would help mitigate the displacement effect of Solar PV modules on foraging and commuting bats, avoid displacement effect from HS2 mitigation planting, as well as providing habitat suitable to support a range of species.
A minimum 10 m offset from all fence lines within Rosefield Solar Farm to existing ponds.	The offset will be of benefit by ensuring no ponds are lost to Rosefield Solar Farm.
A minimum 50 m offset from all fence lines within Rosefield Solar Farm to existing main badger setts.	The offset will ensure badger setts are not impacted and badgers will not be disturbed during construction, operation (including maintenance) and decommissioning of Rosefield Solar Farm.

Embedded mitigation measures relevant to biodiversity	Benefit
Removal of fields in Parcel 1a (Fields C1, C2 and C3) from Solar PV development.	Removal of Fields C1, C2 and C3 in Parcel 1a from Solar PV development will allow for the creation of habitats such as species-rich grassland and scrub to occur. The habitat will provide a connective link between Sheephouse Wood and Romer Wood for commuting bats. This will also mitigate loss of ground-nesting bird habitat and create a nectar source for invertebrates which in turn provides a foraging resource for bats and bird species.
Removal of Knowl Hill (Field B17) and half of Field B9 from Solar PV development.	Removal of Field B17 and half of Field B9 from Solar PV development will allow for the creation of species-rich grassland to occur. This will mitigate loss of ground-nesting bird habitat and create a nectar source for invertebrates which in turn provides a foraging resource for bats and bird species.
Removal of fields in the southern part of Parcel 2 (Fields D27 and D30 to D37) from Solar PV development.	Removal of Fields D27 and D30 to D37 from Solar PV development will allow for the creation of species-rich grassland. This will mitigate loss of ground-nesting bird habitat and create a nectar source for invertebrates which in turn provides a foraging resource for bats and bird species.
Minimum offset of least 10 m either side of Main Rivers, and 6 m from ditches and ordinary watercourses, to all fence lines within Rosefield Solar Farm. Where crossing points are required over Main Rivers or ordinary watercourses, these will be designed to minimise effects on floodplain and any biodiversity interest associated with the watercourse.	Buffer that allows for habitat creation such as species-rich grassland, scrub and ponds which would help mitigate the displacement effect of Solar PV modules on foraging and commuting bats, as well as providing habitat suitable to support a range of species. Maintaining a minimum works buffer from watercourses should avoid disturbance to otters, which may be using them for foraging or commuting at night. The buffer will also reduce potential for significant pollution events that could impact freshwater habitats and associated species.

7.8. Optionality

7.8.1. **Chapter 5: Approach to the EIA** sets out those elements of Rosefield Solar Farm for which optionality is present within the current design and sets out the scenarios assessed for the purpose of this PEIR.

7.8.2. The preliminary design principles as outlined in **Chapter 5: Approach to the EIA** and preliminary parameter plans (**Figures 3.1** to **3.5** in **Volume 2**) set out the reasonable 'worst case scenario' that has been assessed within this chapter. The 'worst case scenario' options in relation to this preliminary biodiversity assessment are described in **Table 7.4** below.

Table 7.4 – Optionality scenarios assessed

Project element	Scenario assessed for this preliminary assessment
BESS	As stated in **Chapter 5**, for the purposes of the preliminary assessment, there are two scenarios for the BESS locations in conjunction with the Rosefield Substation. 1. Rosefield Substation in Field E11 and BESS units located in Fields D8, D9 and E23. 2. Rosefield Substation in Field E23 and BESS units located in Fields D8, D9 and E23. Scenario 2 has been considered the worst case-scenario for biodiversity given the position of the BESS in Scenario 2 being located within close proximity of important Myotis bat commuting routes. Therefore this has been assessed within this preliminary assessment (see **Figure 1.2** in **Volume 2**).
Balance of Solar System (BoSS)	As stated in **Chapter 5: Approach to the EIA**, the location of the BoSS has not yet been defined. This preliminary assessment assumes the BoSS to be located independently outdoors and use of that and central string inverters would be used, as this is considered to be the worst case scenario (see **Figure 1.2** in **Volume 2**).
Satellite Collector Compounds	As stated in **Chapter 5: Approach to the EIA**, it is anticipated that one Satellite Collector Compound will be required in both Parcel 1 and Parcel 2 (see **Figure 1.2** in **Volume 2**). A Satellite Collector Compound would be located in either of the below fields in Parcel 1: • Field B10 • Field B23 (South) Field B10 has been considered the worst case-scenario for biodiversity given the position of the Satellite Collector

Project element	Scenario assessed for this preliminary assessment
	Compound being located within close proximity of important Myotis bat commuting routes. Therefore, this has been assessed within this preliminary assessment. A Satellite Collector Compound would be located in either of the below fields in Parcel 2: • Field D8 • Field D9 • Field D17 All fields have been assessed within this preliminary assessment.
Main Collector Compound	As stated in **Chapter 5: Approach to the EIA**, there are four fields that are considered suitable for the Main Collector Compound, which are located in Parcel 3, as outlined in **Figure 1.2** in **Volume 2** and detailed below. • Field E23 • Field E22 • Field E21 • Field E20 All fields have been assessed within this preliminary assessment.
Main Construction Compounds	As stated in **Chapter 5: Approach to the EIA**, nine fields are being considered for the locations of the Main Construction Compounds, as indicated in **Figure 3.6: Indicative Construction Compounds** in **Volume 2**. It is anticipated that only one will be required within each Parcel. A Main Construction Compound would be located in either of the below fields in Parcel 1: • Field B23 (South) • Field B20 A Main Construction Compound would be located in either of the below fields in Parcel 2: • Field D7 • Field D8 • Field D9

Project element	Scenario assessed for this preliminary assessment
	A Main Construction Compound would be located in either of the below fields in Parcel 3: • Field E21 • Field E22 • Field E23 • Field SA50 All fields have been assessed within this preliminary assessment.
Satellite Construction Compounds	As stated in **Chapter 5: Approach to the EIA**, eight fields are currently being considered for the locations of the Satellite Construction Compounds as indicated in **Figure 3.6: Indicative Construction Compounds** in **Volume 2**. It is anticipated that only one will be required in each Parcel. A Satellite Construction Compound would be located in either of the below fields in Parcel 1: • Field B3 • Field B6 • Field B7 • Field B10 A Satellite Construction Compound would be located in the below field in Parcel 2: • Field D27 A Satellite Construction Compound would be located in either of the below fields in Parcel 3: • Field E10 • Field E11 • Field E20 All fields have been assessed within this preliminary assessment.
Cable route to connect the Solar PV Modules, BoSS, Collector Compounds, Rosefield	As stated in **Chapter 5: Approach to the EIA**, the indicative location of the main cable route between the Parcels and the potential routing options detailed below and presented in **Figure 3.2: Indicative Cable Route Locations** in **Volume 2**.

Project element	Scenario assessed for this preliminary assessment
Substation and BESS	• Option A – Indicative cable route to the north of Home Wood, connecting Parcel 1 and 2; or • Option B – Indicative cable route to the south of Home Wood, connecting Parcel 1 and 2. For the purposes of this preliminary assessment, Option B has been assessed as this is considered to be the worst case scenario.

7.9. Approach to the preliminary assessment

7.9.1. This preliminary assessment has been undertaken in accordance with CIEEM guidance[25], as summarised below. This is considered the best practice guidance for ecological impact assessment and differs from the standard methodology set out in **Chapter 5: Approach to the EIA**.

7.9.2. This preliminary assessment has comprised the following steps:

- Identify relevant ecological features (e.g. designated sites, habitats, species or ecosystems) that may be impacted;
- Determine the ecological importance of receptors using geographic frames of reference[26]; and
- Provide a scientifically rigorous and transparent assessment of the likely ecological impacts and resultant effects. Impacts and effects may be positive or negative.

7.9.3. Criteria that have been taken into account when determining significance comprise:

- Duration (short-term, medium-term or long-term);
- Permanence (permanent or temporary) and changes in significance (increase or decrease); and
- Reversibility - e.g. is the change reversible or irreversible, permanent or temporary.

[25] Chartered Institute of Ecology and Environmental Management (2022) Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater, Coastal and Marine (Version 1.2). Chartered Institute of Ecology and Environmental Management, Winchester.
[26] A combination of survey data, species specific guidance and professional judgement has been used to assign an appropriate ecological importance for each receptor, as per the CIEEM guidance.

7.9.4. The geographic frames of reference used for this preliminary assessment, to help determine the ecological importance of receptors in accordance with the CIEEM guidance, are as follows:

- International (i.e. Ramsar Sites, SACs and SPAs) (normally within the geographic area of Europe);
- UK or national;
- Regional;
- County;
- District; and
- Local (i.e. within approximately 5 km of the Site boundary).

7.9.5. The ecological importance of species populations is based on their size, recognised status (such as through published lists of species of conservation concern and designation of Biodiversity Action Plan (BAP) status) and legal protection.

7.9.6. When assigning ecological importance to species populations, the following has been considered: legal protection, distribution, rarity, population trends and population size. The assessment of ecological importance relies on the professional opinion and judgment of experienced ecologists, informed by relevant population information and scientific research.

7.9.7. When assigning ecological importance to plant communities, they have been assessed in terms of their intrinsic value, habitat for supporting protected species and for supporting plants species of nature conservation concern.

7.9.8. CIEEM guidance requires a clear statement as to whether or not an effect is significant and at what geographical scale, for example ‘significant at the national level’.

7.10. Assessment of likely effects (without additional mitigation)

Construction phase

7.10.1. There will be no direct land take from the designated sites located adjacent to the Site boundary, and it is not envisaged that construction activities are likely to have a direct adverse impact upon these sites. However, in the absence of additional mitigation, there may be temporary indirect adverse impacts, such as surface water pollution run-off and dust pollution.

7.10.2. No direct loss of priority habitats will occur during the construction phase. The embedded design principles include a minimum standoff distance from Solar PV modules and associated infrastructure from habitats

including woodland, trees, ponds, watercourses and hedgerows. Temporary small-scale loss of habitats including hedgerow, grassland and scrub habitats are likely to occur, which will be re-instated as part of the embedded design principles. There will be a long-term loss of arable and grassland habitat where infrastructure is to be located for the 40 year duration of the operational (including maintenance) phase of Rosefield Solar Farm. In the absence of additional mitigation there may also be temporary indirect adverse impacts from surface water pollution run-off and dust.

7.10.3. Modification of arable and grassland habitat will occur due to the placement of Solar PV modules, the embedded design habitat creation proposals underneath Solar PV modules, and ecology mitigation areas.

7.10.4. The embedded design principles include buffer distances from key habitats to minimise disturbance to protected and notable species. In the absence of additional mitigation there is still potential for disturbance and displacement from construction activities to occur to protected and notable species including invertebrates, great crested newt, otter and badger.

7.10.5. Disturbance to roosting, foraging and commuting bats could occur during the construction phase in the absence of additional mitigation. This is likely to cause a short-term adverse effect to bats for the duration of the construction phase.

7.10.6. During the construction phase, short-term displacement of breeding birds and wintering birds through the installation of Solar PV modules and associated infrastructure would occur if not undertaken during the correct time of year.

7.10.7. The Rosefield Solar Farm layout would result in the short-term loss of habitat suitable for breeding birds and wintering birds, as well as the likely disturbance to breeding birds and wintering birds within the habitat immediately surrounding the Site boundary. In the absence of additional mitigation, construction activities within the Site boundary are likely to have a short-term adverse impact on breeding and wintering birds.

Operational (including maintenance) phase

7.10.8. It is not envisaged that operational activities are likely to have direct or indirect adverse impacts to designated sites.

7.10.9. There are expected to be no additional adverse impacts on habitats during the operational (including maintenance) phase, over and above those impacts that would have occurred during construction, given areas of retained habitat such as woodland, hedgerows, ponds, watercourses, ditches and field margins would not be directly or indirectly impacted. The habitat directly underneath Solar PV modules and between the Solar PV modules is likely to be sown and managed as flower-rich grassland or

herbal leys rather than the arable farmland or grassland, which currently dominates the Site, and is of limited biodiversity value. This habitat change would be beneficial, even though shading from Solar PV modules may, to some extent, restrict the growth of plants directly beneath the Solar PV modules and, to a lesser extent, between the rows.

7.10.10. Displacement to foraging and commuting bats is considered likely during the operational (including maintenance) phase in the absence of additional mitigation, despite embedded mitigation measures (minimum 30 m offsets from ancient woodland, statutorily and locally designated wildlife sites, minimum 20 m offsets from HS2 woodland planting and other existing areas of woodland, and minimum 10 m offsets from hedgerows, ponds and Main Rivers) providing large areas of suitable bat foraging and commuting habitat. This is likely to cause a long-term adverse effect to foraging and commuting bats for the duration of the operational (including maintenance) phase.

7.10.11. The areas where embedded mitigation is incorporated into the design of Rosefield Solar Farm are to provide continued availability of habitat for ground nesting birds, as well as suitable habitat for wintering birds during the operational (including maintenance) phase, and to improve connectivity for bird species to other areas of suitable habitat in the wider landscape.

7.10.12. Given the sensitivity of the location of Rosefield Solar Farm, particularly commuting and foraging bats, the layout of Rosefield Solar Farm and embedded design principles have been deliberately designed to ensure the retention, creation and enhancement of habitats such as field margins, woodland, hedgerows, trees, ponds, watercourses, ditches through appropriate buffers. Along with retaining existing habitats wherever possible, the locations of mitigation areas have been chosen to ensure the connections between the existing SSSIs and ancient woodland adjacent to the Site would be enhanced. By creating species-rich grassland and arable margins along with scrub and tree planting. This will create a coherent ecological network that will link the Site to the wider landscape, supporting the movement of local wildlife, particularly bats. The creation of species-rich grassland will provide ground-nesting bird habitat and create a nectar source for invertebrates, which in turn provides a foraging resource for bats and bird species. A mosaic of scrub and grassland will improve foraging habitat for bats and provide habitat to support invertebrates. Restoration of defunct ponds will help to enhance the pond network in the area, provide additional bat foraging habitat and support great crested newts. In addition, these habitats will also be of benefit to species including invertebrates, amphibians, reptiles, non-ground nesting birds, roosting bats, badger and otter. The locations of habitat creation proposals are detailed in **Figure 3.4** in **Volume 2**.

Decommissioning phase

7.10.13. The likely effects of the decommissioning phase on species within the Site boundary are expected to be similar to those for the construction phase. However given the proposed embedded mitigation measures to improve the ecological value of fields within the Site boundary, the biodiversity uplift gained during the operational (including maintenance) phase may be lost if fields are returned to agricultural use at decommissioning. Therefore the likely effects of the decommissioning phase on habitats may potentially be greater.

7.10.14. Appropriate measures will be put in place to minimise direct loss of habitat and disturbance during decommissioning.

7.11. Additional mitigation

Construction phase

7.11.1. Construction activities would be undertaken in accordance with the Outline Construction Environmental Management Plan that will be submitted in support of the DCO application. The Outline Construction Environmental Management Plan would be implemented by the principal contractor and relevant biodiversity elements would be overseen by an Ecological Clerk of Works where required. The Ecological Clerk of Works would be appointed to advise on protecting valued biodiversity features and provide practical, site-specific and proportionate advice on how to achieve compliance with environmental legislation during construction. The Outline Construction Environmental Management Plan will include measures such as best practices to control noise, light, vibration, and airborne and waterborne pollutants, and measures intended to avoid or minimise likely effects for designated sites, habitats and species.

7.11.2. Signage and security fencing around the works buffer zone will ensure that any works and construction traffic avoid the SSSI sites, non-statutory designated sites and ancient woodland sites.

7.11.3. Once the amount of hedgerow which needs to be removed to facilitate access and cabling is quantified, then an appropriate strategy will be documented within the Outline Construction Environmental Management Plan and the Outline Landscape and Ecological Management Plan.

7.11.4. The requirement for any construction/operational lighting to be designed sensitively to include directional, on demand lighting, infrared and directed away from hedgerows and trees will be documented within the Outline Construction Environmental Management Plan/Outline Operational Environmental Management Plan/Outline Decommissioning Environmental Management Plan, all of which will be submitted in support of the DCO application. A monitoring programme will ensure

implementation of mitigation measures, as will be documented within the Outline Construction Environmental Management Plan.

7.11.5. If any trees with bat roost potential cannot be avoided, e.g., for the cable installation or removal, these will be surveyed to determine presence/likely absence of a roost. Any loss of bat roosts will be mitigated and compensated under European Protected Species licences from Natural England which will be sought at the appropriate application stage. Loss of potential roosting features that are not confirmed as a bat roost will also be subject to a compensation strategy detailed within the European Protected Species licence.

7.11.6. Works with the potential to affect great crested newt would be carried out either under a District Level Licence through NatureSpace Partnership or under a European Protected Species licenced from Natural England. The licensable works would encompass clearance and construction works required within the intermediate and distant habitat zones of ponds (likely up to 250 m) within the Site boundary.

7.11.7. Pre-construction species surveys would be carried out, with details of the surveys to be undertaken defined in the Outline Construction Environmental Management Plan. The Outline Construction Environmental Management Plan will specify the Species Protection Plan documents to be detailed in the Construction Environmental Management Plan. The Species Protection Plans would be live documents subject to review and updating and would assist site personnel in the protection of species during construction, under the guidance of an Ecological Clerk of Works.

7.11.8. For mobile species such as badger, pre-construction surveys would be required to check the status of the setts previously identified and to identify any new active setts that would need to be protected. It is anticipated that badger sett closure would not be required. Any exposed trenches or holes would be covered up when construction workers are off-site (i.e. at night-time) or stepped to allow any trapped badgers a safe exit. Should a newly established badger sett be identified during the expected pre-construction surveys, construction works would cease in that location until appropriate mitigation measures were agreed with Natural England. Security fencing will not be dug into the ground, allowing badgers to push under the fence to forage as required.

7.11.9. All works in proximity to water bodies/watercourses would follow measures detailed within the Outline Construction Environmental Management Plan to ensure their protection against pollution, silting and erosion. No night-time working is envisaged (the period when otters are most active).

7.11.10. Whenever reasonably practicable, to minimise likely effects for breeding birds, clearance of vegetation of potential value to nesting birds (i.e. to facilitate access) would be completed outside of the bird-breeding season

(considered to be between mid-February and August, inclusive). Should it not be possible to avoid this season, vegetation would be inspected/surveyed by an Ecological Clerk of Works immediately before clearance (within 24 hours of clearance works). Any active nests would be given an appropriate disturbance buffer for that species with work only allowed to take place within this buffer once the Ecological Clerk of Works has confirmed any young have fully fledged and left the nest.

7.11.11. Should small-scale clearance of potential amphibian or reptile habitat or potential hibernacula features be necessary during the amphibian and reptile active season (late March/April to October inclusive, dependent on local weather conditions), vegetation would be cleared under a method statement secured through the Outline Construction Environmental Management Plan in a staged approach allowing any reptiles to move out of the way into adjacent retained habitat with vegetation cut to approximately knee height, then after 24 hours vegetation will be cut to ground-level. An Ecological Clerk of Works would supervise works and ensure precautionary measures are undertaken during works.

7.11.12. Proposed habitat retention and creation measures will be set out in the Outline Landscape and Ecological Management Plan to be submitted in support of the DCO application.

Operational (including maintenance) phase

7.11.13. Proposed habitat retention and creation measures would be set out in the Outline Landscape and Ecological Management Plan submitted in support of the DCO application. The Outline Landscape and Ecological Management Plan will include the principles of monitoring and management that would need to take place during the operational (including maintenance) phase of Rosefield Solar Farm.

7.11.14. An Outline Operational Environmental Management Plan will be submitted in support of the DCO application. It is proposed that the Outline Operational Environmental Management Plan includes the principles of the measures that would be required during maintenance work including, but not limited to, relevant species surveys that would need to be undertaken prior to any works and regular checks of deer-proof fencing to ensure no large mammals have become trapped.

Decommissioning phase

7.11.15. An Outline Decommissioning Environmental Management Plan will be submitted in support of the DCO application. The Outline Decommissioning Environmental Management Plan will include the principles of the measures that would be required to mitigate temporary loss of habitat or disturbance during decommissioning activities.

7.11.16. Updated habitat and species assessments may be required to inform the Outline Decommissioning Environmental Management Plan, completed in advance of decommissioning.

7.12. Assessment of residual effects (with additional mitigation)

7.12.1. This section brings together the information presented in the preceding sections of this chapter to consider the residual effects likely to be experienced by the receptors associated with Rosefield Solar Farm, detailed in **Table 7.5**. Using the significance criteria set out within the CIEEM guidance[27], the potential residual effects impacts related to each receptor have been characterised, following the implementation of the embedded mitigation measures (**Section 7.7**) and proposed additional mitigation measures (**Section 7.11**).

7.12.2. It is noted that a number of habitats support a range of species. These have been assessed as separate receptors in isolation of the fauna interest features, with species associated with the habitat type also assessed in isolation and not under the habitat types themselves.

Table 7.5 – Likely residual effects on biodiversity

Receptor	Likely residual effects following additional mitigation measures
Statutory designated sites (Sheephouse Wood SSSI, Finemere Wood SSSI, Grendon and Doddershall Woods SSSI and Ham Home-cum-Hamgreen Woods SSSI) Non statutory designated sites within/adjacent to the Site boundary (Bernwood BOA, Shrub Woods LWS, Decoypond Wood LWS, Romer Wood LWS, Runts Wood LWS, Finemere WTR, Home Wood, Middle Claydon LWS and Balmore Wood LWS)	Sheephouse Wood SSSI, Finemere Wood SSSI, Grendon and Doddershall Woods SSSI and Ham Home-cum-Hamgreen Woods SSSI are considered to be of **National** ecological importance. Bernwood BOA, Shrub Woods LWS, Decoypond Wood LWS, Romer Wood LWS, Runts Wood LWS, Finemere WTR, Home Wood, Middle Claydon LWS, and Balmore Wood LWS are considered to be of **County** ecological importance. Ancient woodland adjacent to the Site boundary is considered to be of **County** ecological importance. Lowland mixed deciduous woodland and other woodland; broad-leaved woodland are

[27] Chartered Institute of Ecology and Environmental Management (2022) Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater, Coastal and Marine (Version 1.2). Chartered Institute of Ecology and Environmental Management, Winchester.

Receptor	Likely residual effects following additional mitigation measures
Ancient woodland adjacent to the Site boundary Lowland mixed deciduous woodland and other woodland; broad-leaved woodland	considered to be of **County** ecological importance. The embedded design principles will include a minimum standoff distance from Solar PV modules and associated infrastructure from these sites. As a result, there will be no direct land take from these sites and it is not envisaged that construction or decommissioning activities are likely to have a direct adverse impact on the sites. The implementation of standard environmental protection measures during construction and decommissioning, such as dust suppression and pollution prevention, will be adopted and these measures will be documented within the Outline Construction Environmental Management Plan/Outline Decommissioning Environmental Management Plan. Security fences will ensure provision of buffers during construction and decommissioning works. Monitoring throughout works would ensure compliance and implementation of pollution prevention measures and buffers are maintained. Limited maintenance work during the operational (including maintenance) phase of Rosefield Solar Farm is anticipated. The areas where embedded mitigation is incorporated into the design of Rosefield Solar Farm that buffer these sites would be appropriately managed during the operational (including maintenance) phase, detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan, and as such no residual adverse effects during the operational (including maintenance) phase are anticipated. Overall, given the embedded and additional mitigation measures relating to statutory sites, non-statutory designated sites and ancient woodland, residual effects are considered to be **not significant**.

Receptor	Likely residual effects following additional mitigation measures
Other ancient woodland sites within 2 km of Site Other 14 non-statutory designated sites within 2 km of Site	Other ancient woodland and non-statutory designated sites within 2 km of the Site boundary are considered to be of **County** ecological importance. The distance of these sites from Rosefield Solar Farm and a lack of relevant links or impact pathways between them and Rosefield Solar Farm, would result in no direct or indirect impacts anticipated at the construction, operational (including maintenance) and decommissioning phases. Therefore residual effects are considered to be **not significant**.
Hedgerows	The hedgerow resource is considered of **County** ecological importance. The embedded design principles will include a minimum standoff distance of 10 m from Solar PV modules and associated infrastructure from hedgerows to protect roots and branches during construction and decommissioning works. Rosefield Solar Farm has been designed to avoid hedgerow where practicable; however sections of hedgerow may need to be removed for underground cable installation/removal to widen internal access and create visibility splays at road access junctions. These will be replanted with like-for-like species as soon as practicable after construction/decommissioning. Control measures documented within the Outline Construction Environmental Management Plan/Outline Decommissioning Environmental Management Plan will safeguard protection against dust and soil pollution; security fences will ensure provision of hedgerow buffers and root protection zones of hedgerow trees during construction works. Hedgerows would be appropriately managed during the operational (including maintenance) phase, detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. Therefore residual effects during the operational

Receptor	Likely residual effects following additional mitigation measures
	(including maintenance) phase are not anticipated. Overall, the residual effect at the construction and decommissioning phase is predicted to be **adverse**, **short-term** and **temporary** at the **Local level** whilst reinstated sections of hedgerows become re-established. Given the hedgerow resource in the local area, this is deemed to be **not significant**.
Arable field margins	Arable field margins are considered to be of **Local** ecological importance. The embedded design principles will include a minimum standoff distance from Solar PV modules and associated infrastructure from arable field margins. As a result, there will be no direct loss of this habitat and it is not envisaged that construction/decommissioning activities are likely to have a permanent direct adverse impact. Limited maintenance work during the operational (including maintenance) phase of Rosefield Solar Farm is anticipated and arable field margins will be appropriately managed, as detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. Therefore, residual effects during the operational (including maintenance) phase are not anticipated. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.
Scrub	Scrub habitat is considered to be of **Local** ecological importance. Rosefield Solar Farm has been designed to avoid the removal of scrub habitat where practicable. However limited small-scale amounts of scrub habitat removal may be required. This would be temporary given the environmental mitigation measures that will be incorporated into the design of Rosefield Solar

Receptor	Likely residual effects following additional mitigation measures
	Farm, which will result in additional scrub habitat being planted. This will ensure the quantum of scrub habitat across the Site is maintained and will be appropriately managed during the operational (including maintenance) phase, as detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.
Grassland (modified grassland and other neutral grassland)	Modified grassland and other neutral grassland habitat are considered to be of **Local** ecological importance. Modified grassland and other neutral grassland habitat are extensive within the local area. Limited small-scale amounts of grassland habitat may be removed during construction to accommodate the cable route; however this will be short-term and temporary given the habitats would be re-instated on completion of works. Where Solar PV modules will be placed on areas of existing grassland, this will result in modification of the habitat due to shading and other effects. The environmental mitigation measures that will be incorporated into the design of Rosefield Solar Farm include seeding the areas beneath and adjacent to Solar PV modules with an appropriate species-rich grassland seed mix to improve grassland habitat. Limited maintenance work during the operational (including maintenance) phase of Rosefield Solar Farm is anticipated and grassland habitat will be appropriately managed either by low level grazing or hay cut at an appropriate time of year during the operational (including maintenance) phase, as to be detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan.

Receptor	Likely residual effects following additional mitigation measures
	The residual effect at the construction phase is predicted to be **adverse, short-term** and **temporary** at the **Local level** and is deemed to be **not significant**. Overall, given the embedded and additional mitigation measures, at the operational (including maintenance) phase a **long-term, permanent** (for the duration of the operational (including maintenance) phase) **beneficial** residual effect is predicted, which would be **significant** at the **Local level**. The residual effect at the decommissioning phase is predicted to be **adverse**, **long-term** and **permanent** at the **Local level** and is deemed to be **significant** at the **Local level**.
Cereal and non-cereal crops	Cereal and non-cereal crops are considered to be of **Local** ecological importance. Cereal and non-cereal crop habitat is extensive within the local area. Where Solar PV modules will be located on areas of cereal and non-cereal crops, the environmental mitigation measures that will be incorporated into the design of Rosefield Solar Farm include seeding these with an appropriate herbal ley seed mix, resulting in cereal and non-cereal crop habitat being replaced with habitat that is of higher biodiversity value. No residual effects are identified at the construction/decommissioning phase. Overall, given the embedded and additional mitigation measures, at the operational (including maintenance) phase a **long-term, permanent** (for the duration of the operational (including maintenance) phase), **beneficial** residual effect is predicted which would be **significant** at the **Local level**.
Arable (non-crop) plants	Arable (non-crop) plants are considered to be of **Local** ecological importance. No notable arable (non-crop) plants were identified within the Site during baseline

Receptor	Likely residual effects following additional mitigation measures
	surveys. Therefore no residual effects are identified.
Individual trees and line of trees Watercourses Ponds Ditches	Individual trees and line of trees are considered to be of **Local** ecological importance. Watercourses are considered to be of **County** ecological importance. Ponds are considered to be of **County** ecological importance. Ditches are considered to be of **Local** ecological importance. The embedded design principles will include a minimum standoff distance from Solar PV modules and associated infrastructure of 10 m from trees, ponds, Main Rivers and ordinary watercourses and 6 m from ditches. As a result, there will be no direct loss of these habitats. The implementation of standard environmental protection measures during construction and decommissioning, will be documented within the Outline Construction Environmental Management Plan/Outline Decommissioning Environmental Management Plan. In addition, the embedded design principles will allow for the planting of trees and restoration of ponds. Limited maintenance work during the operational (including maintenance) phase of Rosefield Solar Farm is anticipated and these habitats will be appropriately managed during the operational (including maintenance) phase, as detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. Therefore residual effects during the operational (including maintenance) phase are not anticipated. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.
Invasive species	Invasive species are considered to be of **Local** ecological importance.

Receptor	Likely residual effects following additional mitigation measures
	No invasive species were identified within the Site boundary; however, a pond located 9 m from the cable route search area boundary was found to contain New Zealand Pigmyweed, an invasive non-native species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). An invasive species method statement will be implemented to prevent the accidental introduction of invasive species during the construction, operation (including maintenance) and decommissioning of Rosefield Solar Farm. This will be secured through the Outline Construction Environmental Management Plan/Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan/Outline Decommissioning Environmental Management Plan. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.
Invertebrates	The invertebrate assemblage is considered to be of **National** ecological importance. Woodland habitats will be retained in their entirety, whilst boundary features within the Site will be mostly retained in their entirety. These features are of importance for notable invertebrate species. Although limited small-scale removals of hedgerow and scrub habitat could be required to facilitate access and underground cabling, there is not expected to be an overall loss of suitable habitat for these species as boundary features will be enhanced and other habitat creation works, such as species-rich grassland, scrub planting and hedgerow planting secured through the Outline Landscape and Ecological Management Plan, which will be of benefit to invertebrate species. The environmental mitigation measures that will be incorporated into the design of Rosefield Solar Farm would be appropriately managed during the operational (including maintenance)

Receptor	Likely residual effects following additional mitigation measures
	phase, as detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan, and will improve habitat suitable to support invertebrate assemblages across the Site. Therefore residual effects during the operational (including maintenance) phase are not anticipated. The residual effect during the construction and decommissioning phase is predicted to be **adverse, short-term** and **temporary** at the **Local level** and **not significant**. Overall, given the embedded and additional mitigation measures, at the operational (including maintenance) phase a **long-term, permanent** (for the duration of the operational (including maintenance) phase), **beneficial** residual effect is predicted, which would be **significant** at the **Local level**.
Amphibians (including great crested newt)	Great crested newt population is considered to be of **County** ecological importance. Within the Site boundary, environmental DNA surveys have confirmed the presence of great crested newt. The embedded design principles will include a minimum standoff distance from Solar PV modules and associated infrastructure of 10 m from ponds. As a result, there will be no direct loss of great crested newt breeding habitat. The implementation of standard environmental protection measures during construction and decommissioning, will be documented within the Outline Construction Environmental Management Plan/Outline Decommissioning Environmental Management Plan. There is the potential for the loss of suitable terrestrial habitat suitable for great crested newt in the vicinity of these ponds. The environmental mitigation measures that are expected to be incorporated into the design of Rosefield Solar Farm (including restoration of defunct ponds and provision of species-rich grassland and scrub

Receptor	Likely residual effects following additional mitigation measures
	planting), which would be appropriately managed during the operational (including maintenance) phase, as detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. This habitat has the potential to significantly improve great crested newt terrestrial habitat across the Site. In addition, the restoration of defunct ponds will increase the amount of breeding habitat available. Therefore residual effects during the operational (including maintenance) phase are not anticipated. Mitigation for any habitat loss during the construction, operational (including maintenance) and decommissioning phases will be dealt with through a District Level Licence or European Protected Species licence from Natural England. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.
Reptiles	Reptiles (if present) are considered to be of **Local** ecological importance. The Rosefield Solar Farm layout would result in the short-term loss of habitat suitable for reptiles during the construction/decommissioning phase. Removal of habitat suitable to support reptiles would be undertaken in a phased approach under a method statement secured within the Outline Construction Environmental Management Plan. Therefore residual effects during the construction/decommissioning phase are not anticipated. The mitigation measures that are expected to be incorporated into the design of Rosefield Solar Farm, including creation of species-rich grassland, arable margins and scrub habitat, which would be appropriately managed during the operational (including maintenance) phase, have the potential to significantly improve suitable reptile habitat across the Site. These measures will be detailed within the Outline

Receptor	Likely residual effects following additional mitigation measures
	Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. Therefore no residual effect on reptiles during the operational (including maintenance) phase is expected. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.
Ground nesting birds	The ground nesting bird assemblage is considered to be of **County** ecological importance. During the construction and decommissioning phases, displacement through disturbance due to the installation/removal of Solar PV modules and associated infrastructure would occur. Measures to safe-guard ground nesting birds during construction/decommissioning will be documented within the Outline Construction Environmental Management Plan/Outline Decommissioning Environmental Management Plan. Habitat creation to maintain nesting habitat for ground nesting birds and to increase the foraging habitat available will be documented within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. The residual effect during the construction and decommissioning phases is predicted to be **adverse, short-term** and **temporary** at the **Local level** and **not significant**. Overall, given the embedded and additional mitigation measures, no residual effects are identified at the operational (including maintenance) phase.
Non-ground nesting birds	The non-ground nesting bird assemblage is considered to be of **County** ecological importance. During the construction and decommissioning phases, displacement through disturbance due

Receptor	Likely residual effects following additional mitigation measures
	to the installation/removal of Solar PV modules and associated infrastructure would occur. Measures to safe-guard non-ground nesting birds during construction/decommissioning will be documented within the Outline Construction Environmental Management Plan/Outline Decommissioning Environmental Management Plan. Rosefield Solar Farm has been designed to avoid hedgerow loss where practicable; however sections of hedgerow may need to be removed for underground cable installation/removal, to widen internal access and create visibility splays at road access junctions, resulting in a short-term loss of available nesting habitat. These will be replanted with like-for-like species as soon as practicable after construction/decommissioning. Habitat creation measures to maintain non-ground nesting bird habitat and to maintain foraging habitat available will be documented within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. The residual effect at the construction and decommissioning phase is predicted to be **adverse, short-term** and **temporary** at the **Local level** and **not significant**. Overall, given the embedded and additional mitigation measures, no residual effects are identified at the operational (including maintenance) phase.
Wintering birds	The wintering bird assemblage is considered to be of **County** ecological importance. During the construction and decommissioning phases, displacement through disturbance due to the installation/removal of Solar PV modules and associated infrastructure would occur. Measures to safe-guard wintering birds during construction/decommissioning will be documented within the Outline Construction Environmental Management Plan/Outline

Receptor	Likely residual effects following additional mitigation measures
	Decommissioning Environmental Management Plan. Habitat creation to maintain foraging habitat for wintering birds, including species-rich grassland and arable field margins, will be documented within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. The residual effect at the construction and decommissioning phase is predicted to be **adverse, short-term** and **temporary** at the **Local level** and **not significant**. Overall, given the embedded and additional mitigation measures, no residual effects are identified at the operational (including maintenance) phase.
Barn owl Red kite	Barn owl are considered to be of **County** ecological importance. Red kite are considered to be of **County** ecological importance. Measures to safe-guard barn owl and red kite during construction/decommissioning will be documented within the Outline Construction Environmental Management Plan/Outline Decommissioning Environmental Management Plan. Pre-construction surveys will be undertaken to confirm nesting locations within and adjacent to the Site boundary, with appropriate buffers maintained between nesting sites and construction/decommissioning activities to prevent disturbance and ensure legislation is adhered to. Habitat creation to maintain foraging habitat available will be documented within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. Overall, given the embedded and additional mitigation measures, residual effects during the construction, operation (including maintenance)

Receptor	Likely residual effects following additional mitigation measures
	and decommissioning phases are considered to be **not significant**.
Bats (foraging and commuting)	Foraging and commuting bats are considered to be of **National** ecological importance, using areas of woodland as a roosting and foraging resource and using hedgerows, the intervening pasture and arable habitats for foraging and commuting. Construction/decommissioning activities which could potentially affect foraging and commuting bats include removal of hedgerows which may disrupt flight paths and lighting. During bat activity surveys, significantly more bat activity was found along hedgerows and field margins rather than in-field. The design of Rosefield Solar Farm has aimed to maintain landscape connectivity for bats. Hedgerows, trees, watercourses and ponds will be protected by a 10 m buffer and statutory designated sites, non-statutory designated sites and ancient woodland be protected by a 30 m buffer, HS2 mitigation planting and other woodland blocks will be protected by a 20 m buffer from Solar PV modules. Within these buffer areas, habitat creation such as species-rich grassland scrub and pond restoration will provide suitable foraging and commuting habitat for bats, and will be detailed within the Outline Landscape and Ecological Management Plan/Outline Operational Environmental Management Plan. Small sections of hedgerow may need to be removed for underground cable installation/removal, to widen internal access and create visibility splays at road access junctions, resulting in a short-term loss of available commuting and foraging habitat. These will be replanted with like-for-like species as soon as practicable after construction/decommissioning. Lighting proposals will be designed sensitively to include directional, on demand lighting and infrared (not visible to bats) and will be

Receptor	Likely residual effects following additional mitigation measures
	documented within the Outline Construction Environmental Management Plan/Outline Operational Environmental Management Plan/Outline Decommissioning Environmental Management Plan. Recent evidence[28][29][30] has indicated that some species of bat are (to an extent) displaced by solar arrays, although the exact mechanism causing the displacement, and over what distance the displacement effect occurs, is not known. In addition, disturbance as a result of operational noise from the BESS is considered likely, which will be confirmed This would constitute a permanent, long-term adverse effect for the duration of the operational (including maintenance) phase. Notwithstanding the embedded and additional mitigation measures, overall, the residual effect on commuting and foraging bats could result in a **direct**, **long-term, permanent** (for the duration of the operational (including maintenance) phase), **adverse effect** which would potentially result in a **significant** effect.
Bats (roosting)	Roosting bats are considered to be of **National** ecological importance, given that the Site is in close proximity to SSSIs that support nationally significant bat populations. Whilst presence/absence surveys have not been undertaken to date, a significant number of trees within and adjacent to the Site boundary have

[28] Tinsley E., Froidevaux J.S.P., Zsebok S., Szabadi K. L. and Jones G. (2023) Renewable energies and biodiversity: Impact of ground-mounted solar photovoltaic sites on bat activity. Journal of Applied Ecology. 00: 1-11.
[29] Szabadi K. L., Kurali A., Rahman N.A.A., Froidevaux J.S.P., Tinsley E., Jones G., Gorfol T., Estock P. and Zsebok S. (2023) The use of solar farms by bats in mosaic landscapes: Implications for conservation. Global Ecology and Conservation. 44.
[30] Barré K., Baudouin A., Froidevaux J.S.P., Chartendrault V,. and Kerbiriou C. (2023) Insectivorous bats alter their flight and feeding behaviour at ground-mounted solar farms. Journal of Applied Ecology.

Receptor	Likely residual effects following additional mitigation measures
	been assessed as having potential to support roosting bats. Embedded mitigation measures, including retention of such features, standoff distances from these features will be documented within the Outline Construction Environmental Management Plan/Outline Operational Environmental Management Plan/Outline Landscape and Ecological Management Plan/Outline Decommissioning Environmental Management Plan. If in the unlikely event that trees identified as having bat roost potential are required to be removed (e.g. to facilitate access or cable routes), the mitigation hierarchy will be used to avoid by design, where practicable, or else mitigate/compensate effect. Further targeted bat surveys, once access and cable route design has progressed, may be required to enable an informed assessment of likely effect on roosting bats. Compensation will be required for all potential roost features lost, not just those confirmed as bat roosts, to meet best practice. Mitigation for any loss of roosting habitat during the construction, operational (including maintenance) and decommissioning phases will be dealt with through European Protected Species licence from Natural England. Additional mitigation measures to include lighting proposals being designed sensitively to include directional, on demand lighting and infrared (not visible to bats) will be documented within the Outline Construction Environmental Management Plan/Outline Operational Environmental Management Plan/Outline Decommissioning Environmental Management Plan. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.
Otter	Otters are considered to be of **Local** ecological importance.

Receptor	Likely residual effects following additional mitigation measures
	To minimise disturbance to commuting and foraging otter during construction/decommissioning, appropriate buffers between the Site boundary and watercourses of 10 m and ditches of 6 m have been incorporated into the embedded design principles. A single potential holt is located along the boundary of Parcel 3. Pre-construction surveys will be undertaken to confirm active holts, with appropriate buffers maintained to prevent disturbance and ensure legislation is complied with. This will be documented within the Outline Construction Environmental Management Plan/Outline Decommissioning Environmental Management Plan. There are expected to be no additional adverse impacts on otter from Rosefield Solar Farm during the operational (including maintenance) phase, over and above those impacts that would have occurred during construction/decommissioning. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.
Badger	Badgers are considered to be of **Local** ecological importance. Construction/decommissioning activities within the Site boundary are likely to have a minimal impact on badgers as all currently known badger setts are expected to be retained through appropriate buffers to prevent disturbance during construction. The buffer zones between construction/decommissioning activities and field boundaries will ensure badgers are able to freely move within the Site boundary without disturbance. In addition, any security fencing will not be dug into the ground so badgers will be able to push up under fencing to access fields to forage as they would do with normal stock fencing.

Receptor	Likely residual effects following additional mitigation measures
	Lighting proposals will be designed sensitively to include directional, on demand lighting and infrared and will be documented within the Outline Construction Environmental Management Plan/Outline Operational Environmental Management Plan/Outline Decommissioning Environmental Management Plan. There are expected to be no additional adverse impacts on badger from Rosefield Solar Farm during the operational (including maintenance) phase, over and above those impacts that would have occurred during construction. Overall, given the embedded and additional mitigation measures, residual effects are considered to be **not significant**.

7.13. Opportunities for enhancement

7.13.1. The following biodiversity enhancement opportunities have currently been identified:

- Installation of barn owl boxes in suitable retained trees within the Site boundary;
- Installation of bird nest boxes in suitable retained trees to increase the availability of nest sites for non-ground nesting birds within the Site boundary;
- Creation of amphibian and reptile hibernacula within suitable habitat within the Site boundary;
- Installation of bat roost boxes in areas of new planting, where trees will not yet have developed features suitable to support roosting bats; and
- Installation of artificial otter holts in suitable locations within the Site boundary.

7.13.2. All habitat creation and enhancement measures will be assessed in a Biodiversity Net Gain Assessment that will be submitted in support of the DCO application.

7.14. Difficulties and uncertainties

7.14.1. The following difficulties and uncertainties have been encountered in undertaking this preliminary assessment:

- The information provided in this PEIR is preliminary and is based on the information available at the time of writing. A full assessment of likely significant effects will be reported in the ES;
- The background data search provided by the Buckinghamshire and Milton Keynes Environmental Record Centre provided data with an accuracy between 100 m and 1 km. Therefore the interpretation of the background data has taken into account the location accuracy of the species records;
- Survey work of Fields SA55, SA56, SA57, SA58 and SA59 is currently ongoing for all relevant receptors detailed in **Table 7.2** to inform the design of Rosefield Solar Farm, and once specific cable routes are identified, further surveys will be undertaken pre-construction where appropriate. In some instances, land access was not possible and therefore an assumption has been made regarding these areas suitability to support receptors This will be presented in the ES submitted in support of the DCO application. Notwithstanding this, the survey data collected to date forms a robust baseline in which to inform this preliminary assessment;
- The ground level bat roost assessment survey conducted to date does not include all of the Site boundary. Therefore a final assessment cannot be made until further surveys are completed prior to the submission of the DCO application. Surveys will be determined on the location of specific works such as cable crossing points and access routes. The final impact assessment for bat roosts will be presented within the ES; and
- The badger surveys conducted to date do not include all of the Site boundary. Therefore a final assessment cannot be made until further badger surveys are completed prior to the submission of the DCO application. The final impact assessment for badgers will be presented within the ES.

7.15. Further work required to inform the ES

7.15.1. To form a robust ES, the following work is proposed so that all aspects will be suitably considered:

- Survey work of Fields SA55, SA56, SA57, SA58 and SA59;
- Bat preliminary roost assessment of areas not surveyed during 2022;
- Updated badger surveys of the Site boundary plus 30 m buffer including areas not surveyed during 2022;
- Further consultation with appropriate stakeholders will be undertaken to determine whether the data gathered to date, as well as proposed surveys, is sufficient to provide a full biodiversity assessment to inform the DCO application. Further consultation will also ensure any ecological

enhancements consider cumulative effects of other existing development and/or approved development; and

- A Biodiversity Net Gain assessment and calculation will also be undertaken to inform the design of Rosefield Solar Farm and will be submitted in support of the DCO application.

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