STATERA
BALANCING THE GRID

East Claydon Battery Energy Storage System (BESS)

Environmental Statement

Volume 3: Ecology and Biodiversity

5 December 2023

Contents

1 INTRODUCTION

1.1 Overview

1.1.1 This chapter of the Environmental Statement (ES) describes an assessment of the predicted impacts on ecological features within the study area of the proposed development.

1.1.2 The methodologies used to collect the baseline data are explained, together with the methodology for assessing any significant impacts that the proposed development may have. The ecological baseline is described and the potential impacts on these features are then assessed and their significance discussed, together with appropriate mitigating actions and enhancement features. Finally residual impacts are described.

1.1.3 The proposed development at East Claydon BESS (the Site) has two distinct stages which are likely to present different impacts, as follows:

i. Construction activities associated with ground works and construction; and

ii. Operational activities associated with the intended ongoing use of the proposed development.

1.1.4 Potential impacts are varied and include habitat loss and disturbance of species. However, opportunities have been optimised to provide appropriate mitigation and enhancements to deliver net gains in biodiversity that are appropriate to the surrounding landscape.

2 LEGISLATIVE AND POLICY FRAMEWORK

2.1 Planning Policy Context

2.1.1 The National Planning Policy Framework (NPPF) (Ministry for Housing, Communities and Local Government, 2023) sets out the Government's planning policies for England and how these are expected to be applied. Section 15 of the NPPF, provides policy on the conservation and enhancements of the natural environment.

2.1.2 Paragraph 174 indicates that development proposals should contribute to and enhance the natural and local environment by, amongst other things:

> *"d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;"*

2.1.3 Paragraph 180 goes on to provide that:

> *"When determining planning applications, local planning authorities should apply the following principles:*
>
> *a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, permission should be refused;*
>
> *b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
>
> *c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
>
> *d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."*

2.1.4 The Vale of Aylesbury Local Plan 2013-2033, is the current Local Plan which Buckinghamshire Council has adopted for this area (adopted in 2021). It has a number of policies relating to biodiversity and habitat conservation, notably NE1 (Biodiversity and Geodiversity) NE2 (River and stream corridors) and NE8 (Trees, hedgerows and woodland) as summarised below.

2.1.5 NE1 seeks to provide protection against development on internationally or nationally important protected sites. NE1 also seeks to provide protection and enhancement of biodiversity and geodiversity, through:

> c) A net gain in biodiversity by protecting, managing, enhancing and extending existing biodiversity resources, and by creating new biodiversity resources.
>
> d) Avoidance, mitigation and compensation secured and maintained so that developments result in a net gain to biodiversity.

e) Restricting development which would result in damage to or loss of a site of biodiversity or geological value or important habitats.

f) Requiring ecological surveys to be undertaken.

g) Requiring that mitigation follows a mitigation hierarchy, where options for avoidance, mitigation and compensation should be followed.

h) Requiring that developments promote site permeability for wildlife and avoid fragmentation of wildlife corridors, with features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value.

i) Planning conditions/obligations to ensure net gains and enhancements to biodiversity.

j) Considering development which may adversely affecting a Local Nature Reserve on a case-by-case basis, according to the amount of information available about the site and its significance, relative to the type, scale and benefits of the development being proposed and any mitigation.

NE2 seeks to limit adverse impacts on the functions and setting of any watercourse and associated corridors. The policy seeks to 'conserve and enhance the biodiversity, landscape' and consider the recreational value of watercourses through good design, including the use of ecological buffer areas.

The objective of Policy NE8 is to protect and enhance trees, hedgerows and woodland across the Aylesbury Vale. NE8 aims to achieve this through tree surveys and the replacement of trees impacted by development. NE8 requires that development which would impact ancient trees or woodland would not be granted consent unless in exceptional circumstances. NE8 specifies that development that would result in an unacceptable loss of trees, hedgerows, community orchards, veteran trees or woodland will be resisted. Where tree loss is considered acceptable, NE8 requires that replacement provision should be of an adequate type for the location. Where species-rich native hedgerow loss is unavoidable, NE8 requires that the developer provide compensatory planting of native species-rich hedgerow.

2.1.6 Additionally, the Biodiversity Net Gain Supplementary Planning Document (Buckinghamshire Council, 2022) sets out guidance on the provision of biodiversity in new developments.

2.2 Legislation

2.2.1 The DEFRA Circular 06/2005 sets out the biodiversity statutory obligations and their impact within the planning system

2.2.2 Relevant legislation considered within the scope of this chapter includes the following:

The Wildlife and Countryside Act 1981 (as amended);

The Conservation of Habitats and Species Regulations 2017 (as amended);

Natural Environment and Rural Communities (NERC) Act 2006;

The Countryside and Rights of Way (CRoW) Act 2000;

Wild Mammals (Protection) Act 1996.

Protection of Badgers Act 1992

2.3 Standards and Guidance

2.3.1 This impact assessment has been undertaken in accordance with the following standards and guidance;

British Standards Institution (2013) Biodiversity – Code of Practice for Planning and Development: BS 42020:2013;

Chartered Institute for Ecology and Environmental Management (CIEEM) (2018) Guidelines for Ecological Impact Assessment in UK and Ireland (Terrestrial, Freshwater and Coastal);

Department for Communities and Local Government (now the Ministry of Housing, Communities and Local Government) (2014) National Planning Practice Guidance: Natural Environment – Biodiversity, Ecosystem and Green Infrastructure;

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal.

3 ASSESSMENT METHODOLOGY

3.1 Methodology

3.1.1 For the purpose of this assessment the study area comprised the land within the redline boundary. However, the desktop study also considered the surrounding 2km for all protected and notable species, non-statutory designated sites and statutory designated sites. A further search of the surrounding 10km was completed for internationally designated sites.

3.1.2 The baseline studies, and their methodologies, which were used to inform the impact assessment are as follows;

i. Preliminary Ecological Appraisal (MKA Ecology Ltd, 2023a). Based on the CIEEM guidelines (2017) and comprising desktop study, habitat survey (UKhab Ltd, 2023) and protected species scoping survey. Conducted on 30 June 2022. Desktop study based on data search from Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC) and Multi-agency Geographic Information for the Countryside (MAGIC).

ii. Reptile survey (MKA Ecology Ltd, 2023b). A seven-visit presence/absence survey was undertaken between 18 April 2023 and 17 May 2018 following best-practice methodologies (Froglife,1999 and Herpetofauna Workers Manual, 2003).

iii. Breeding bird survey (MKA Ecology Ltd, 2023c). A six-visit breeding bird survey based on the British Trust for Ornithology's (BTO) reduced-effort Common Bird Census territory mapping technique (Marchant, 1983 and Bibby et al. 1992). Survey visits conducted between 16 March 2023 and 6 July 2023

iv. Bat activity survey (MKA Ecology Ltd, 2023d). A bat transect and static detector survey based on best-practice methodologies (Collins, 2016). One transect route was walked each season (spring, summer and autumn) with a static detector session also completed in each season.

v. Water vole and otter survey (MKA Ecology Ltd, 2023e). A two-visit presence/absence survey was undertaken following best practice guidelines (Dean *et al*., 2016). An early season visit was conducted on the 5 June 2023 and 17 June 2023, and a late season visit was conducted on 15 September 2023, 18 September 2023, 29 September 2023.

3.2 Significance Criteria

Receptor Value

3.2.1 Ecological features, or receptors, for consideration include sites, habitats, species and species assemblages. For the purposes of this assessment the importance or value of an ecological feature is considered within a defined geographical context as follows;

i. International;

ii. National;

iii. County;

iv. Local; and

v. Negligible/Site

3.2.2 These values are defined further in Table 1 below.

Table 1: Definitions of value

Value	Typical descriptors
International	An international designated site such as Special Protection Area (SPA) or Special Area of Conservation (SAC), or an area which meets the designation criteria for such sites. Internationally significant and viable areas of habitats listed on Annex 1 of the Habitats Directive. A regularly occurring population of an internationally important species.
National	A nationally designated site such as a Site of Special Scientific Interest (SSSI) or National Nature Reserve (NNR) or an area which meets the designation criteria for such sites. A viable area of a Habitat of Principal Importance as listed on the NERC Act (2006). A regularly occurring significant population of a Species of Principal Importance as listed on the NERC Act (2006) or nationally protected species.
County	A viable area of habitat listed on the County Biodiversity Action Plan, or listed as a Priority Habitat in the County. A County Wildlife Site (CWS), or other non-statutory site designated at the county level. A regularly occurring significant population of a species listed on the County Biodiversity Action Plan, or listed as a Priority Species in the County.
Local	Habitats or species which are scarce in the locality or which are considered to enrich the biodiversity resource in the local context.
Site	Having no/minimal ecological value.

Magnitude of Impact

3.2.3 The magnitude of each impact is variable, and the criteria used in this assessment are defined in Table 2.

Table 2: Definitions of magnitude

Magnitude	Typical descriptors
High	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements (adverse). Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality (beneficial).
Medium	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements (adverse). Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (beneficial).
Low	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements (adverse). Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (beneficial).
Negligible/site	Very minor loss or detrimental alteration to one or more characteristics, features or elements (adverse). Very minor benefit to or positive addition of one or more characteristics, features or elements (beneficial).
No change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Significance of effects

3.2.4 The magnitude of impact together with the receptor value is used to determine the significance of effects. The matrix used to determine the assessment of significance of effects is shown in Table 3.

Table 3: Assessment matrix

Magnitude	Magnitude of impact				
	No change	Negligible	Low	Medium	High
Negligible/site	Neutral	Negligible	Negligible or minor	Negligible or minor	Negligible or minor
Local	Neutral	Negligible or minor	Negligible or minor	Minor	Minor
County	Neutral	Negligible or minor	Minor	Moderate	Substantial
National	Neutral	Minor	Minor or Moderate	Substantial	Substantial
International	Neutral	Minor	Moderate	Substantial	Substantial

3.2.5 Where the matrix offers more than one significance option, professional judgement is used to decide which option is most appropriate.

3.2.6 Effects of moderate and above are considered significant in terms of the EIA Regulations. Mitigation or compensation should be considered for all adverse effects in order to minimise biodiversity losses.

3.2.7 The broad definitions of the terms used to describe significance of effects are as follows:

i. Substantial: Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a damaging impact and loss of resource integrity.

ii. Moderate: These beneficial or adverse effects may be important but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a particular resource or receptor.

iii. Minor: These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.

iv. Negligible/Site: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Assumptions and Limitations

3.2.8 This section details the limitations and constraints encountered when establishing the ecological baseline.

Desktop study

3.2.9 Data on species records obtained from local biological records centres do not represent the results of a full and systematic assessment of species abundance through a search area. As a result, necessary precautions were taken when drawing conclusions from the desktop study and an absence of records was not accepted as an absence of presence.

Bat activity survey

3.2.10 The bat activity transect routes were amended to avoid disturbing nesting species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). The nests were located along the stream, which will be retained. Therefore the lack of data on bat activity within this location is not considered to be a significant constraint on the impact assessment.

3.2.11 The results from acoustic bat surveys are biased towards bats that use louder echolocation calls. Some species, such as brown long-eared bat, are known to echolocate quietly on occasions. Therefore some species may be under recorded due to the limited recording range of the equipment. This is particularly evident during the automatic bat detector surveys where there is no surveyor to record visual cues for these species.

3.2.12 Due to an issue with equipment, the first attempt at the spring static bat detector survey failed. The static bat detector survey was repeated as soon as possible with the recording period running into June. As a result, some activity associated with the spring-time may have been missed. However, considering there was a consistently low level of activity recorded during each session it is not likely that the delay had a significant impact on the results obtained.

Reptile survey

3.2.13 The reptile survey was amended to avoid disturbing the nesting species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). The riparian zone will be retained and so the lack of data within this area is not considered a significant constraint, however it may have resulted in lower peak counts of reptiles, particularly grass snake *Natrix helvetica helvetica*.

Water vole and otter survey

3.2.14 Short sections of the watercourse were inaccessible during the late season survey due to the density of vegetation. The majority of these sections were to the south and not predicted to be impacted, however there was a small section which is likely to be the location of a temporary bridge.

3.2.15 No access constraints were experienced during the early season visit, and no evidence of water vole or otter were found in this section, although signs of otter were found nearby. A precautionary approach has been recommended to overcome this minor constraint.

4 BASELINE CONDITIONS

4.1.1 The section defines the ecological baseline based on survey effort and the desktop study. The ecological receptors are assigned a value according to Table 1.

4.1.2 The presence of internationally designated sites, protected and notable plants, fish and hazel dormouse was scoped out of this assessment at the Preliminary Ecological Appraisal stage. Survey effort for water vole was conducted and none were recorded. As a result, these ecological receptors are not addressed further in this assessment.

4.1.3 The proposed development will apply for works to be completed under the Buckinghamshire District Licence for great crested newt. As such, great crested newt are also scoped out of further detailed assessment.

4.2 Existing Conditions

Designated sites

4.2.1 No statutory or non-statutory designated sites are located within 2km of the Site.

4.2.2 The Site lies within the Natural England Impact Risk Zone of two statutorily designated sites (Sheephouse Wood Site of Special Scientific Interest (SSSI), and Finmere Wood SSSI). These sites are located 4.6km and 4.3km south-east respectively.

4.2.3 Sheephouse Wood SSSI comprises ancient lowland mixed deciduous woodland. The site supports black hairstreak *Strymonidia pruni*, a nationally restricted species, as well as other woodland butterflies including white admiral *Limenitis camilla* and purple hairstreak *Thecla quercus*.

4.2.4 Finmere SSSI is similar in character, also supporting ancient lowland mixed deciduous woodland. The rides and open areas support diverse flora and invertebrates including black hairstreak white admiral, purple hairstreak, wood white *Leptidea sinapis*, dingy skipper *Erynnis tages* and grizzled skipper *Pyrgus malvae*.

4.2.5 Both Sheephouse SSSI and Finmere SSSI are considered to be of national value.

On site habitats

4.2.6 The Site comprises arable farmland bordered by neutral grassland margins and hedgerows. A small pond surrounded by scrub is present in the east of the Site and a stream bordered by a line of trees is present to the west. Modified grassland is present in the north of the Site. These habitats are described fully in Appendix 2.

4.2.7 The arable fields and modified grassland are of low ecological value, with its value at site level only. The neutral grassland margins are generally narrow and species-poor; due to the poor species composition and limited extent of these margins they are considered to be of site value as well.

4.2.8 Several hedgerows are present across the Site. These were typically of low species richness although a short section along the southern boundary a higher species diversity. Native hedgerows qualify as a Habitat of Principal Importance as listed on the Natural Environment and Rural Communities (NERC) Act (2006) and those present on Site are of local value.

4.2.9 A small stream flows adjacent to the western boundary, supporting limited aquatic vegetation. It is bordered by a line of mature trees, which comprise abundant blackthorn

Prunus spinosa with frequent ash *Fraxinus excelsior* and crack willow *Salix fragilis*. These habitats are considered to be of local value. A small pond surrounded by scrub is present on the eastern boundary and is also considered to be of local value.

Reptiles

4.2.10 Grass snake and common lizard were found during the survey effort with a peak count of 14 grass snake and one common lizard. The majority of observations were found along the hedgerows.

4.2.11 According to Froglife (1999) the population size class of grass snake on Site is considered to be 'Exceptional' and population size class of common lizard is 'Low'. As a result, the Site meets the criteria to qualify as a Key Reptile Site and is considered to be of county value.

Breeding birds

4.2.12 A total of 50 species were recorded during the breeding bird surveys, of which three species was confirmed breeding, 17 were probably breeding, 19 were possibly breeding and 11 were non-breeding, representing a typical lowland farmland bird community.

4.2.13 Of the species recorded, a total of 28 met the assessment criteria as species of conservation concern: mallard *Anas platyrhynchos*, cuckoo *Cuculus canorus*, stock dove *Columba oenas*, woodpigeon *Columba palumbus*, common gull *Larus canus*, herring gull *Larus argentatus*, lesser black-backed gull *Larus fuscus*, little egret *Egretta garzetta*, osprey *Pandion haliaetus*, red kite *Milvus milvus*, tawny owl *Strix aluco*, peregrine *Falco peregrinus*, rook *Corvus frugilegus*, skylark *Alauda arvensis*, willow warbler *Phylloscopus trochilus*, whitethroat *Sylvia communis*, wren *Troglodytes troglodytes*, starling *Sturnus vulgaris*, fieldfare *Turdus pilaris*, redwing *Turdus iliacus*, song thrush *Turdus philomelos*, wheatear *Oenanthe oenanthe*, dunnock *Prunella modularis*, grey wagtail *Motacilla cinerea*, meadow pipit *Anthus pratensis*, greenfinch *Chloris chloris*, linnet *Linaria cannabina* and yellowhammer *Emberiza citronella*. These species are listed on Schedule 1 of the Wildlife and Countryside Act, Species of Principal Importance (NERC Act, 2006) or species on the Birds of Conservation Concern red and amber lists.

4.2.14 Ten of these notable species (woodpigeon, red kite, skylark, whitethroat, wren, song thrush, dunnock, meadow pipit, linnet and yellowhammer) were confirmed or considered to be probably breeding on Site.

4.2.15 The hedgerows and line of trees bordering the stream supported the majority of breeding territories (woodpigeon, red kite, whitethroat, wren, song thrush, dunnock, linnet, yellowhammer). Within the arable fields onsite four skylark territories were identified.

4.2.16 The method developed by Fuller (1980) was applied to assess the importance of the breeding assemblage in term of its species richness. The thresholds for each category is detailed in Table 4 below.

Table 4: Breeding species richness criteria

National	Regional	County	Local
85+	70-84	50-69	25-49

4.2.17 The Site is considered support a breeding assemblage of up to 39 species. It should be noted substantial declines in farmland breeding bird assemblages have occurred since the Fuller methodology was published and therefore the thresholds provided are likely to underestimate the value of assemblages. However, due to low number of breeding species of conservation significance this is considered to be an accurate assessment.

4.2.18 Three territories and two active red kite nests were recorded within the line of trees along the stream. Red kite is listed on Schedule 1 of the Wildlife and Countryside Act. These breeding pairs of red kite are considered to be of local value.

Bats

4.2.19 A relatively low diversity of bats for the region was recorded in the survey area. Common pipistrelle *Pipistrellus pipistrellus* was recorded most frequently along with infrequent recordings of soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctule* and individuals identified to the *Myotis* genus. Relatively higher levels of bat activity were recorded around the south-west corner and across the northern hedgerow however no notable areas of commuting and foraging were recorded on Site.

4.2.20 The bat assemblage was assessed using criteria set out by Reason and Wray (2023). Common pipistrelle and soprano pipistrelle are widespread and common species. Noctule, and *Myotis* spp. are considered widespread in many geographies but not abundant in all.

Table 5: Assessing the importance of the bat assemblage

Rarity category	Species	Importance of assemblage
Widespread all geographies	Common pipistrelle Soprano pipistrelle	1 point per species
Widespread in many geographies but not abundant in all	Noctule *Myotis* spp.	2 points per species
Rarer or restricted distribution	Not present	3 points per species
Rarest Annex 2 species and very rare	Not present	4 points per species
Assemblage score: 6		

Table 6: Bat assemblage thresholds for south-east England

National	Regional	County	Local
20-28	15-19	13-14	1-12

4.2.21 The overall assemblage scored 6. To meet the threshold for County importance a minimum score of 13 is required. The bat community is therefore considered to be of local value.

Otter

4.2.22 Foraging signs, footprints and spraints of otter were found along the watercourse. No evidence of couches, holts or natal dens was identified. The watercourse is currently used by foraging and commuting otter and is considered to be of local value.

4.3 Future Baseline

4.3.1 Given the dominance of arable habitat at the Site significant changes in the ecology and biodiversity are not anticipated provided that this land use continues. Other habitats such as the grasslands and hedgerows are likely to receive ongoing management to retain them in a similar condition to that at present.

4.3.2 The impacts of future climate change may alter the farming practices on site but given the paucity of other habitats this would be less likely to significant alter the current baseline conditions of ecological features. Potential increases in drought conditions as a result of climate change may subtly alter the composition of the neutral grassland communities.

5 ASSESSMENT OF IMPACTS

5.1.1 This section identifies and assesses the likely significant impacts resulting from the Proposed Development. It considers impacts during the construction and once the development is complete and operational.

Designated sites

5.1.2 Finmere Wood SSSI is located 4.3km from the Site at the closest point and Sheephouse Wood SSSI is located 4.6km from the Site at the closest point. Due to the intervening distance, no impacts from increased dust deposition, noise, vibration or light spill during construction are anticipated. Neither Finmere Wood SSSI or Sheephouse Wood SSSI are connected hydrologically to the Site and therefore impacts from run off or pollution are also not anticipated. Both SSSIs are noted for supporting black hairstreak butterflies, which rely on blackthorn for egg-laying sites and as a foodplant. Black hairstreak are highly sedentary with very short range of dispersal. As a result, the risk of impacts to functionally connected populations are not anticipated.

5.1.3 Overall, due to the intervening distance and absence of potential impact pathways, the effect of development is predicted to have no change on Finmere Wood SSSI or Sheephouse Wood SSSI and therefore a neutral impact**.**

Habitats

5.1.4 The arable farmland, modified grassland, and narrow margins of neutral grassland are all of site value. The arable farmland will be lost in its entirety, whilst only small losses of modified grassland and neutral grassland are anticipated. As these features are of site value only, this adverse effect is considered to be of negligible significance**.**

5.1.5 The line of trees, pond, scrub will be retained within the site design. The magnitude of effect is considered to be no change and therefore a neutral impact.

5.1.6 The proposed development makes provision for a number of new habitats including species-rich grasslands, new woodland, scrub and pond creation. The provision of such measures within the proposed development will result in a medium beneficial impact at a local scale and of minor significance.

5.1.7 The proposed development will result in a loss of approximately 20m of hedgerow within the Site boundary to facilitate the construction of two access routes between fields. The magnitude of this permanent adverse impact would be negligible. The proposed development makes provision for new hedgerows and lines of trees. This additional habitat will result in a beneficial impact of medium magnitude at a local scale.

Breeding birds

5.1.8 The proposed development will result in the loss of breeding bird habitat during the construction phase. All arable habitat will be removed. The majority of hedgerows will be retained, which will avoid impacts upon the majority of the breeding bird assemblage. The loss of habitat for the breeding bird assemblage will be a permanent adverse impact of low magnitude. This adverse effect will therefore be of minor significance and particularly focussed on the ground-nesting arable specialists such as skylark.

5.1.9 The proposed development makes provision for a new habitat including species-rich grasslands, new woodland and scrub planting and new hedgerows and these will offset impacts to nesting habitat of generalist species. A minimum of four skylark plots should be

delivered within retained arable and modified grassland that fall within the Site boundary, but outside the development footprint.

Reptiles

5.1.10 The arable habitat will be removed, however this habitat is not considered suitable to support reptiles. Short sections of hedgerow will also be removed which will result in a permanent adverse impact of negligible magnitude.

5.1.11 The proposed creation of scrub, species-rich grassland, ponds and woodland will provide improved foraging, basking and hibernation habitats for reptiles, this will offset the above habitat loss. As a result there will be a permanent effect of low magnitude and the significance of this beneficial effect will be minor.

Bats

5.1.12 The proposed construction will result in the loss of some habitats which are used by foraging bats including the arable farmland and neutral grassland field margins and short sections of hedgerow. These habitats are generally of lower value for foraging bats. The loss of these habitats would be a permanent adverse impact of low magnitude. Therefore the effect on foraging bats would be of minor significance.

5.1.13 The proposed development makes provision for a number of new habitats including ponds, species-rich grasslands, new woodland and scrub planting, new hedgerows and tree planting. The provision of such measures within the proposed development will help to offset the impacts on foraging bats by providing further habitat provisions. These habitats will likely provide a more diverse foraging resource than the large expanse of arable farmland that is present. As a result there will be a permanent beneficial effect of low magnitude and the significance of this beneficial effect on foraging bats will be minor.

5.1.14 Lighting during the construction phase could affect bat activity on and surrounding the proposed development. The bat activity was deemed to be of local value and the magnitude of change, if unmitigated, is likely to be medium adverse and therefore of minor significance.

Otter

5.1.15 The stream and riparian corridor will be retained within the Site design. The proposed creation of ponds will provide additional foraging habitat and result in a permanent beneficial effect of low magnitude. The significance of this beneficial effect will be minor.

5.1.16 Two temporary clear-span bridges will be installed to provide access to the Site. The bank profiles and vegetation will be retained, resulting in a temporary impact of negligible magnitude.

5.1.17 Lighting during the construction phase could affect otter activity along the stream and riparian corridor. The presence of otter foraging and commuting was considered to be of local value and the magnitude of change, if unmitigated, is likely to be medium adverse.

[redacted]

5.2 During Operation

Habitats

5.2.1 Further impacts upon habitats are not anticipated during the operational period.

Reptiles

5.2.2 If habitat management was to take place at an inappropriate time of year, there is a risk individual reptiles could be disturbed, damaged or killed. This ecological receptor is of county value, the magnitude of the effect is low and would result in an adverse impact of minor significance.

Breeding birds

5.2.3 If habitat management was to take place at an inappropriate time of year, there is a risk nesting birds could be disturbed, damaged or killed. This ecological receptor is of local value, the magnitude of the effect is low and would result in an adverse impact of minor significance.

Bats

5.2.4 The operational phase of the proposed development will result in a greater level of light which can have an impact on nocturnal wildlife, and particularly bat species. This has the potential to impact on both foraging and commuting bats. The magnitude of such an impact is predicted to be medium. The significance of effect on the bat assemblage which is deemed to be of local value is therefore minor and adverse.

Otter

5.2.5 The operational phase of the proposed development will result in a greater level of light which can have an impact on otter. The magnitude of such an impact is predicted to be medium. The significance of effect on commuting and foraging otter which is deemed to be of local value is therefore minor and adverse.

Biodiversity Net Gain assessment

5.2.6 A biodiversity net gain assessment has been undertaken for the proposed development. To provide an objective assessment of the potential value of the proposed biodiversity enhancements, the DEFRA statutory metric was applied. The measures, a proxy for biodiversity that use habitat types and their areas, are compared before (the present) and after the completion of the proposed development.

5.2.7 Biodiversity metric values were calculated for the pre-development habitats cereal crops, neutral grassland, modified grassland, mixed scrub, ponds, hedgerows, lines of trees) and also for the post-development habitats (neutral grassland, mixed scrub, developed land, broadleaved woodland, ponds, orchards, biodiverse green roofs, sparsely vegetated land, rural trees, hedgerows, lines of trees). Habitats which will be retained and enhanced where also included and predicted improvements in their condition taken into account.

5.2.8 Table 5 shows the predicted change in biodiversity units for habitat areas and linear habitat features.

Table 5: Predicted net change in biodiversity units at East Claydon BESS

Feature	Current biodiversity units	Predicted biodiversity units	Net change in biodiversity units	Net percentage change
Habitats	57.54	84.77	27.23	47.32%
Hedgerows	39.95	57.92	17.97	44.98%

5.2.9 This demonstrates a 27.23 increase in biodiversity habitat units (47.32%), and a 17.97 increase in hedgerow units (44.98%). Further details of the Biodiversity Net Gain assessment are included in Appendix 7.

6 MITIGATION

6.1 During Construction

6.1.1 A Construction Ecological Management Plan (CEMP) would be prepared post consent setting out the measures that would be implemented during the construction phase to avoid and reduce potential impacts. With regard to ecology and biodiversity, these measures would include:

i. All retained ecological features (hedgerows, grasslands, streams) would be protected from accidental damage through the construction phase through the installation of appropriate fencing, such as Heras fencing.

ii. Standard mitigation measures would be put in place during the construction phase to eliminate the risk of direct impacts on active birds' nests which are protected by the Wildlife and Countryside Act 1981 (as amended). Any clearance of vegetation would avoid the active nesting period (March to August inclusive). Where it is not possible to avoid the active nesting period the area proposed for clearance would be checked by an experienced ornithologist immediately in advance of works. Where nesting birds are present works would not proceed until the nesting attempt is complete. Particular attention will be required to avoid disturbance impacts on breeding red kite which is specially protected under Schedule 1 of the Wildlife and Countryside Act (1981).

iii. To reduce disturbance to crepuscular and nocturnal fauna construction works should be undertaken in daylight hours, and the use of artificial night time lighting (over and above levels of night time lighting already present) will be avoided. Night time lighting, if required, during the construction phase would be restricted to critical areas only and the key boundary habitats along the stream and hedgerows would not be lit.

iv. Measures to prevent or minimize the risk of dust deposition, pollution and contamination of land will follow Environment Agency's Pollution Prevention Guidelines.

v. A pre-commencement check for badger setts.

vi. A pre-commence check of bankside habitats for otter holts.

vii. During the construction phase pit covers or temporary ramps should be installed at any unattended excavations to avoid trapping faunal species such as mammals or amphibians.

viii. Vegetation clearance will occur under a reptile method statement. Any grassland and hedgerow will be removed under an Ecological Clerk of Works and following a staged, directional vegetation removal. An ecologist will be present to dismantle any potential refugia by hand. Any reptiles found will be re-located to suitable retained areas outside the construction footprint.

6.2 During Operation

6.2.1 A Landscape and Ecology Management Plan (LEMP) will be developed for the proposed development. This LEMP could be secured by Buckinghamshire Council by planning condition. The LEMP will provide as a minimum:

i. Detail on how the proposed ecological features, such as planting and bird/bat boxes will be established and managed for the long-term to enhance the ecological value at the site.

ii. Type and location of bat and bird boxes.

iii. Appropriate timings of habitat management to avoid impacts upon reptiles, great crested newt, nesting birds, roosting bats.

iv. Detail on how the lighting during the operational phase will be designed and managed to minimise impacts across the application site and surrounding area. This will be based on the Bat Conservation Trust guidance on artificial lighting (BCT, 2023).

7 RESIDUAL IMPACTS

7.1.1 This section details any residual effects on the ecological features at East Claydon BESS following mitigation.

Habitats

7.1.2 The proposed development will result in the loss of arable farmland, modified grassland as well as small areas of neutral grassland and hedgerow. although these are of low ecological value. The proposed development will provide new ecologically valuable habitats, resulting in a net gain in biodiversity units Consequently the residual effects of the proposed development for onsite habitats will be a beneficial impact of minor significance.

Reptiles

7.1.3 The proposed loss of existing habitats has the potential to impact individual reptiles, however this risk can be avoided through the implementation of the mitigation measures set out in the CEMP. The proposed habitats are likely to provide enhanced opportunities for foraging, shelter and hibernation compared to the existing arable farmland. Consequently, the residual effects of the proposed development on reptiles will be a beneficial impact of moderate significance.

Breeding birds

7.1.4 The measures set out in the CEMP will ensure that there are no impacts on active birds' nests. The provision of new nesting habitats in the form of bird boxes, planting and skylark plots will be detailed in the LEMP and consequently the residual effects will be beneficial and of minor significance

Bats

7.1.5 The measures set out in the CEMP will ensure that there are no impacts on active bat roosts, or on foraging bats resulting from lighting. The provision of new roosting habitats in the form of bat boxes and foraging areas through native planting will be detailed in the LEMP, together with a sensitive lighting strategy. Consequently, the residual effects on bats will be beneficial and of minor significance.

[redacted]

Otter

7.1.7 The measures set out in the CEMP will ensure that there are no impacts on otters in the surrounding area. The proposed pond creation will provide enhanced foraging and a residual beneficial impact of minor significance.

7.2 In-combination effects

7.2.1 The proposed development is unlikely to have significant effects on ecological receptors in isolation. The scale of the project is such that its contribution to cumulative effects on biodiversity features with other projects is unlikely.

7.2.2 The EIA Scoping Opinion highlighted the surrounding developments for consideration:

i. Tuckey Solar Farm (application ref: 19/00983/APP),

ii. Planned expansion by National Grid of the East Claydon National Grid Substation,

iii. HS2

iv. East-West rail

7.2.3 Following EIA Scoping, additional solar developments have come forward (Rosefield and Wings solar farms), these projects are at an early stage in the planning process and details are indicative at present.

7.2.4 There will be no adverse residual effects following mitigation from the proposed development. As such, the likelihood of cumulative adverse effects with other projects is considered to be negligible.

8 SUMMARY

8.1.1 During construction, the principal impacts are loss of habitats. These losses are largely restricted to habitats which are of lower ecological value, such as arable farmland and modified grassland. Habitats of higher value, including hedgerows and the adjacent stream will be protected from accidental damage through the installation of fencing and by following regulatory guidance on preventing pollution. The proposed development incorporates a range of new habitats which will offset any habitat losses. These new habitats include hedgerows, woodland, ponds, scrub and species-rich grassland.

8.1.2 Mitigation measures will be required to avoid minor adverse impact on protected species and will be detailed within a Construction Ecology Management Plan.

8.1.3 Overall, with the provision of the new habitats proposed, the impact assessment concludes the proposed development will result in minor beneficial impacts for habitats, breeding birds, bats, reptiles, badger and otter.

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TECHNICAL APPENDICES

8.1.27 Appendix 2 MKA Ecology Ltd – East Claydon BESS – Preliminary Ecological Appraisal

8.1.28 Appendix 3 MKA Ecology Ltd – East Claydon BESS - Bat activity survey

8.1.29 Appendix 4 MKA Ecology Ltd – East Claydon BESS – Reptile survey

8.1.30 Appendix 5 MKA Ecology Ltd – East Claydon BESS – Water vole and otter survey

8.1.31 Appendix 6 MKA Ecology Ltd – East Claydon BESS – Breeding bird survey

8.1.32 Appendix 7 Wildlife Trust Consultancies – East Claydon BESS – BNG ssessment

8.1.33 Appendix 8 Wildlife Trust Consultancies – East Claydon BESS – BNG metric calculator