Volume 3 Non-Technical Summary

# East Claydon Greener Grid Park Environmental Statement

**Volume 3: Non-Technical Summary** 

Statkraft UK LTD

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# 1.0 Introduction and Methodology

- This document is a summary in non-technical language of an Environmental Statement ('ES') prepared on behalf of Statkraft UK LTD ('Statkraft') / 'the Applicant'). It sets out the findings of an Environmental Impact Assessment ('EIA') of proposals for an energy storage and grid balancing development, known as the 'East Claydon Greener Grid Park' (in this report referred to as 'the Proposed Development'). It is located within the Aylesbury Vale area of Buckinghamshire, north-west of the National Grid East Claydon Substation ('the Site'). This document includes the following information:
  - Section 1.0 Background to the assessment process and the Proposed Development;
  - Section 2.0 to 3.0 Description of the Site and the Proposed Development;
  - Sections 4.0 A topic by topic review of the findings of the EIA;
  - Sections 5.0 A review of whether other direct or indirect impacts may arise when the scheme is considered with other schemes in the area;
  - Sections 6.0 Provides the summary of outcomes of the assessment;
  - Sections 7.0 Details of how to obtain or view a full copy of the ES; and
  - Sections 8.0 A list of abbreviations and a glossary of key terms.

# **About the Applicant**

- 1.2 Statkraft is Europe's largest generator of renewable energy, with origins going back almost 130 years. In the UK, Statkraft develop, own and operate wind, solar, green hydrogen, hydropower and Greener Grid Park projects.
- 1.3 Since 2006, Statkraft has invested over £1.4 billion in the UK's renewable energy infrastructure and are market leaders in delivering innovative projects that ensure the reliability of our future green electricity supply.
- Statkraft is developing Greener Grid Parks as part of the renewable energy network. As renewable energy generation increases across Great Britain, new ways to maintain system stability are required. Greener Grid Parks are sites comprised of various grid stabilising equipment which, depending on the needs of the grid and technology choice, can import, store, and export electricity.

# **Background and Need for the Development**

Greener Grid Parks require efficient connections to the National Grid to avoid lengthy electricity cables and minimise disturbance to the local area and environment. The Site has been chosen due to its location near to the existing and proposed replacement East Claydon substation, which also has benefits at the local and national level.

## The EIA Process

1.6

The EIA process aims to ensure that any significant effects arising from certain types of major development are systematically identified, assessed and presented to help a local

planning authority, statutory consultees and other stakeholders in their understanding of impacts arising from development. If measures are required to minimise or reduce effects, then these are clearly identified.

- The main Government Regulations that set out when and how EIA is carried out are currently the Town and Country Planning (EIA) Regulations 2017 ('the EIA Regulations'). The EIA Regulations specifies a range of types of development where an EIA is required if 'significant effects' are considered likely. In relation to the Proposed Development, EIA is required because it includes it is considered to fall within Part 3(a) of Schedule 2 of the EIA Regulations, as an 'industrial installation for the production of electricity, steam and hot water'; which includes more than 0.5 hectares of land. For such developments, EIA is required where significant environmental effects are likely which is the case for this development.
- 1.8 The EIA has addressed the following environmental aspects, which were agreed with Officers of the Council through the issue of a formal EIA Scoping Opinion, dated in November 2024:
  - Landscape and Visual Impact;
  - Noise and Vibration;
  - Biodiversity and Ecology;
  - Traffic and Transport;
  - Climate Change and Resilience; and
  - Archaeology.
- Likely effects are identified based on historic and current knowledge of the Site and surroundings, desktop assessment, surveys and fieldwork as well as other information available to the EIA team. As planning permission is sought for a temporary period of 40 years, decommissioning is also assessed in this EIA. All those matters that could be reasonably be required to assess the effects of the Proposed Development are set out in the ES. Where there were any particular difficulties or assumptions that have been made by the team, these have been clearly set out; these include any issues associated with restrictions affecting site visits and surveys.
- The Applicant has ensured that the team undertaking the EIA have the necessary skills, experience and knowledge to conduct a robust assessment.
- The team has worked to ensure wherever possible that measures ('mitigation') that can reduce adverse effects have been incorporated into the design ('embedded') or that other modifications that are necessary or appropriate to avoid or reduce impacts on the environment are identified. These mitigation measures are identified in the ES and have been taken into account as part of assessment work.
- 1.12 Consultation (for example with Buckinghamshire Council) has also informed the EIA process in relation to the methods by which the EIA has been carried out, as a means to seek environmental data, to review the effectiveness of any identified mitigation measures and as a means to keep interested bodies informed on the process of EIA undertaken.

# **Description of the Site**

- 2.1 The Site is located within the Aylesbury Vale area of Buckinghamshire, approximately 120m north-west of the existing National Grid East Claydon substation, and 650m north-east of East Claydon Village.
- 2.2 The Site covers an area of approximately 45.3 hectares (ha) and comprises agricultural arable fields. It is bound to the north by vegetation at the natural field boundary, and to the south by East Claydon Road. The southwestern corner of the Site extends across East Claydon Road a short distance covering the area of land that would provide the connection into the replacement National Grid substation. The eastern Site boundary runs through agricultural fields to the west of Claydon Brook, before cutting in to run alongside the disused railway to meet East Claydon Road. The western Site boundary follows the path of an overhead electricity line, before doing the same. Two electricity pylons are located within the Site.
- 2.3 The general location of the Site is shown in Figure 1.1 below and the Site Location Plan is appended to this document.



Figure 2.1 General Location of Site (Approximate Site Boundary edged in red)

Source: Google Earth, Lichfields' Annotations

2.4 The Site is relatively flat with linear ditches located along sections of existing field boundaries at the north, centre, and within the southern portion of the Site. It falls from a high point of approximately 95.1mAOD at the southeast corner of the Site, to a low point of approximately 85mAOD at the northeast corner.

- 2.5 There is a small part of a footpath (ref. BM ECL 3/1) located to the south west of the Site, south of East Claydon Road, which connections to other footpaths/bridleways within the surrounding area.
- Existing access to the Site is via East Claydon Road along the route of the disused railway which forms a track through the Site. From East Claydon Road there is access to the A413 via Winslow, linking to Aylesbury, Buckingham, and connections to the M40 and M1.
- 2.7 Monkomb Farm, comprising agricultural and residential buildings, is located approximately 250m west of the Site boundary. Tuckey Farm, including agricultural buildings and a fishery (G.Neal Fisheries) to the north of the farm, is approximately 360m east of the Site, beyond Claydon Brook.
- The nearest settlement to the Site is East Claydon, a village located approximately 700m to the southwest of the Site. Verney Junction, a small hamlet, is located approximately 700m to the northwest of the Site, and the town of Winslow is approximately 1.5km to the northeast. Immediately south of the Site, beyond East Claydon Road, is a single residential dwelling (Station House), located off Winslow Road and adjacent to the existing National Grid East Claydon substation. The surroundings are predominantly characterised by agricultural fields, and are open in nature. There is a number of farms and small businesses surrounding the Site.

# **Description of the Proposed Development**

3.1 The following Proposed Development is applied for in full detail:

"Construction of a Greener Grid Park comprising energy storage and grid balancing equipment and associated infrastructure including access, drainage, landscaping and other incidental works."

The type of energy storage proposed is a 'Battery Energy Storage System' ('BESS'), which alongside the grid balancing equipment, will form the 'Greener Grid Park'. The BESS component of the development would comprise 4 areas of batteries, inverters and transformers (these terms are explained further below, and in the glossary). The development's purpose would be to store excess energy generated by the National Grid, and, in doing so, provide a reserve power supply to the local electricity grid, also enabling increased use of renewable energy via the grid.

3.3 The purpose of the key infrastructure types proposed is described further below:

- The **batteries** will store electricity in a form that can't be used directly by most homes and devices. They are the main part of the development, and the other infrastructure is required to support the batteries.
- The **inverters** are devices that change the stored energy into a usable form so it can be sent to the power grid, or used right away.
- The transformers are devices that work to control and adjust the level of electricity
  coming from the batteries, so that it can safely travel through power lines for use in
  homes and businesses.
- The **grid balancing equipment** proposed will act like a traffic controller for electricity. It does not create or store energy, but it helps manage the flow, keeping everything moving smoothly and preventing problems. When a lot of energy comes in from batteries or solar panels, this device makes sure the power grid stays balanced and stable. This is increasingly useful now that the UK has more renewable energy (like wind and solar), which can be unpredictable.
- A pack of plans and drawings have been submitted as part of the full planning application, which has informed the EIA. These cover the proposed site layout during construction and operation, access arrangements, the fire strategy, and landscaping proposals. A selection of the key plans is appended to this document.
- 3.5 The Proposed Development would operate for short periods of time only, usually between 1 and 4 hours across a 24 hour period, this is because it's main purpose is to step in when local power demand temporarily spikes or when there is a short-term gap in power supply. For instance, the BESS might kick in for a couple of hours in the early evening when use of appliances, and heating or cooling systems peaks, therefore helping ease the load on the local grid until demand goes back down. As a result, most of the time the BESS is on standby and not in use.
- 3.6 Other supporting infrastructure includes welfare and office buildings and control and metering rooms. Security lighting and CCTV will be installed across the development. A 3.4m high palisade and high-voltage compound fence will be erected.

## **Access and Operation**

- 3.7 The Proposed Development would be accessed from the existing access onto East Claydon Road, which would be extended north to the proposed Greener Grid Park compound, along the disused railway track. Minor works to this existing access point will ensure it is able to accommodate the occasional operational traffic.
- During operation, the Proposed Development will be unmanned and operated remotely requiring only occasional maintenance engineers to visit the Site in the region of two vehicles (vans) per month, and two HGV lorries per year. A limited number of specialist jobs will be located remotely / offsite. Thirteen car parking spaces in the main compound are proposed for the few maintenance and inspection personnel.

## Appearance

3.9 The battery containers and synchronous compensator buildings will be finished in olive green.

# Landscaping, Biodiversity and Drainage

A landscaping strategy will be delivered with the following key principles:

- The retention of existing woodland, trees and hedges within and adjacent to the Site, wherever possible;
- New native tree and shrub planting, including over 170 new trees of 3-3.5metres in height at the point of planting;
- Planting of species-rich wildflower meadow across 9.6hectares of the Site, to the northern areas of the Site surrounding the new tree planting and the compound;
- Creation of sustainable drainage systems, designed to have landscaping and ecological benefits, including swales which will provide wet wildflower meadow mix; and
- Creation of a bund wrapping around the southwestern corner of the Greener Grid Park compound, proposed at a height of 5metres.
- 3.11 The landscaping proposals reinforce the locality's landscape character and surrounding landscape context deliver a net gain of 58.5% for habitats and 10.24% for hedgerows.

## **Grid and Cable Connection**

The Proposed Development will be connected to the National Grid at the planned replacement East Claydon substation, which will be located in the field southwest of the Site and will be in place before the Proposed Development is brought into use. The underground cable connection will be approximately 2.6km in length.

## Construction

3.13 It has been assumed that the Proposed Development will be brought forward over a 24 month construction period considered from January 2028 to December 2029.

3.10

- 3.14 The Proposed Development will be constructed over three main phases comprising the preparation of the Site, the construction of the entire development and demobilisation and clearance works.
- 3.15 No unusual construction methods are anticipated to be required in the construction of the buildings. Large vehicles, considered and known as 'Abnormal Indivisible Loads' are required in order to transport the transformers to the Site from Tilbury Docks in Essex, which would take place for 2 of the 24 month construction. Special measures are proposed to ensure the safe routing of these vehicles to and from the Site, which includes enforcing the route the AILs will travel on, mobilising support vehicles to accompany all AILs, and fixing timings when AILs will travel on local roads.

# **Decommissioning**

3.16

The decommissioning period is anticipated to take place over 2 years at the end of the 40year life of the development, and will mirror the construction phase in reverse.

# **Embedded Mitigation**

The EIA has been completed by the team, considering the features of the Proposed Development alongside any designed-in mitigation measures, that have been proposed in order to reduce the environmental effects as far as possible from the outset. These measures are referred to as 'embedded mitigation', and cover the construction and operational periods. They may be physical parts of the Proposed Development (such as tree planting to screen views), or processes detailed within management plans submitted with the planning application which will be approved and implemented as part of the planning permission. These measures are summarised below:

## **During Construction**

- During construction, works will follow the control measures outlined in the Framework
   Construction Environmental Management Plan ('CEMP') included within the
   ES, which includes:
  - a Tree protection measures
  - b **Ecological Management measures** detailing procedures to protect habitats and species during the construction;
  - c **Temporary lighting** with ecological and amenity considerations;
  - d **Pollution prevention** measures;
  - e Best practice noise control measures;
  - f Waste and Recycling Management measures;
- In respect of transport management a Construction Traffic Management Plan, including:
  - g Site working hours limits;
  - h **Community liaison** strategy;
  - i Traffic control measures;

- j **Signage** and banksmen;
- k **Support vehicles** for deliveries made by 16.5m articulated vehicles and 26.5m articulated heavy load vehicles;
- l **Dust control** measures;
- m Fixed delivery times; and
- n Highway condition surveys.

# **During Operation**

- The implementation of a detailed design in accordance with the submitted plans and drawings, which include measures to reduce landscape and visual impacts and mitigate any harm/loss to ecology and the wider environment. This includes design considerations, such as:
  - a site layout;
  - b recessive colour choice and appearance;
  - c landscaping, tree retention and planting;
  - d habitat creation and biodiversity enhancements;
  - e sensitive lighting;
  - f sustainable drainage designed to ensure flood risk is not increased downstream;
  - g re-use of materials when levelling the Site to reduce waste and carbon footprint;
  - h noise mitigation through acoustic fencing, inclusion of a bund, and careful selection of plant;
  - i the use of energy efficient technologies; and
  - j access improvements.

# **During Decommissioning**

- A **Decommissioning Environmental/Ecological Management Plan** (DEMP) will be implemented to manage the impacts of this phase of works;
- **Restoration of the Site** at the end of the 40 year planning permission to it's previous agricultural use;
- Retention and protection of trees, habitats and planting implemented as part of the Proposed Development; and
- Use of operational lighting to support the decommissioning work, avoiding the need for any additional temporary floodlighting.
- Planning conditions attached to a planning permission for the Proposed Development will ensure that the embedded mitigation measures are delivered as envisaged.

# **Alternatives**

- 3.19 The EIA Regulations require that consideration is given to any alternatives to the Proposed Development that may have been studied by the applicant, along with a consideration of what may happen at the site should the development not go ahead.
- 3.20 The Site is the only location identified for the Proposed Development. The Applicant has not given, and will not be giving, consideration as part of the EIA to other sites for the developments of a similar scale.
- 3.21 If the Proposed Development did not come forward at the Site, it is possible that the Site would remain in its current condition, which at present comprises a combination of agricultural land made up of sheep grazed pasture and arable production. It is likely that in the no development scenario this use would continue with the fields being used in rotation between crops and fallow land, with the grass fields likely to remain in use for grazing.
- In terms of alternative designs, the Proposed Development has emerged through a process of discussion and engagement between the team and key consultees. These alternative design options were assessed by the EIA team during the pre-application stage, and the results have informed the layout and design of the development. This has allowed the continued evolution of the design to incorporate measures to reduce adverse impacts.

# 4.0 Review of Effects on the Environment

The following provides a review of the various technical issues assessed assuming that all of the embedded mitigation identified in Section 3.0 is in place. It identifies how assessment work has been conducted, the current conditions, likely remaining effects of the Proposed Development and any further mitigation that should be put in place. Consideration has been given to the level of effects during construction, operation and decommissioning. The effects during construction and decommissioning are considered likely to be the same and therefore have been grouped together in the summaries below.

# **Landscape and Visual Impact**

- An assessment has been carried out by Urban Green of the effects of the Proposed Development on landscape and visual impact. The assessment has considered the effect of the Proposed Development on:
  - 1 Landscape landscape character and the elements and features that contribute to it (landscape receptors);
  - 2 Visual people who would experience the Proposed Development from different views in the landscape towards the Site (visual receptors); and
- 4.3 The assessment has applied best practice and considers published Landscape Character Assessments.

#### **Existing Conditions**

- 4.4 The Site comprises seven arable and pastoral field parcels and the boundaries are largely defined by mature hedgerows with hedgerow trees. The tree lined route of a disused railway line dissects the Site centrally into two parts broadly from north to south. There is a field ditch that follows part of the route of the disused railway line centrally within the Site.

  There are electricity pylons and associated high voltage overhead cables within the Site.
- The Site and the majority of the study area (2km) is located within National Character Area (NCA) 108 Upper Thames Clay Vales and Landscape Character Type (LCT) 5 Shallow Vales at a local level. The study area is also subject to a further five LCAs and beyond this is the Quainton Wing Hills Area of Attractive Landscape (AAL). The Quainton Wing Hills AAL extends over an area of elevated land to the north of Quainton, approximately 3.2km south of the Site.
- 4.6 Field survey work undertaken in 2024 indicates that views of the Site primarily of the upper portions of mature vegetation, electricity pylons and associated overhead lines are available, ranging from within the Site and its immediate proximity, to longer distance views. These partial views are currently available to the residents at Tuckey Farmhouse Complex, Berry Leys Farm, dwellings on Church Way, Hinton Close and Lacemakers Close, road users of East Claydon Road, Verney Road and Church Way (specific sections of the road routes), from a number of footpaths/bridleways situated within proximity of the Site, from the Grade II Listed Tuckey Farmhouse to the east and employees/visitors of the existing East Claydon Substation.

## **Effects during Construction and Decommissioning**

- During the construction phase of the Proposed Development, short-term Minor Adverse (Not Significant) effects to LCT 5 Shallow Vales have been identified due to the change to the landscape character. Negligible effects have been identified to other character areas that fall within the Site or within proximity of (NCA 108 Upper Thames Clay Vales and LCA 5.6 Claydon Valley). Moderate Adverse (Not Significant) effects are anticipated due to the change of the Site's landscape character, including its night-time character.
- In relation to visual impacts, it is anticipated that residents at Monkomb Farm complex are likely to experience **Major to Moderate Adverse to Moderate Adverse Significant effects**, and residents at Station House are likely to experience Minor Adverse (Not Significant) effects. Negligible effects relating to visual impact are anticipated for residents at Tuckeys Farm complex, Berry Leys Farm and dwellings on the eastern fringe of East Claydon. Users of footpaths/bridleways located within or adjacent to the Site are likely to experience effects ranging from Negligible to Moderate Adverse (Not Significant).
- 4.9 At decommissioning stage, Negligible effects are anticipated to all identified sensitive receptors except for the changes to the existing land use and night-time landscape character, of which will be Minor Adverse (Not Significant).

#### **Effects during Operation**

- All landscape and visual effects identified during the construction phase are expected to remain at Year 1 of the operational development. The LVIA also assessed the effects at Year 10 of operation, after the landscaping and tree planting has matured. At this point, the proposed landscaping features will have provided sufficient screening of the development, reducing the effects on both the landscape and visual receptors. Year 10 effects are summarised below where these have changed from those reported at construction stage.
- 4.11 Minor Adverse landscape effects to existing footpath/bridleways and to LCA 5.6 Claydon Valley will reduce to Negligible (Not Significant). Moderate Adverse (Not Significant) landscape effects on the night-time character of the Site and general changes to the Site's landscape character are reduced to Minor Adverse (Not Significant).
- In terms of visual impacts, the **Major Moderate Adverse (Significant)** effects on residents within the Monkomb Farm Complex are expected to reduce to Minor Adverse (Not Significant) by Year 10 of the Proposed Development's operation. Additionally, all Minor Adverse (Not Significant) effects identified to receptors who are likely to experience views of the Proposed Development are expected to reduce to Negligible at Year 10.
- 4.13 The effects to the existing vegetation from disruption caused by construction activities are expected to change from Minor Adverse (Not Significant) during construction to Minor Beneficial (Not Significant) at Year 10 of the operation phase.

# **Mitigation and Monitoring**

4.14 No additional mitigation has been identified in relation to the construction and decommissioning stages of the Proposed Development as the effects would be temporary in nature. No further mitigated beyond what is proposed in the CEMP and Decommissioning Environmental Management Plan ('DEMP') could be provided to reduce these effects.

During the operational phase management and maintenance of the green infrastructure would be in accordance with a Landscape Ecological Management Plan (LEMP) which would be subject to regular review. No additional mitigation is proposed to address residual effects arising from operation.

# **Noise**

An assessment has been carried out of the likely noise effects at the Site. It determines the baseline noise levels at the Site and assesses the potential noise impacts during the construction, operation and decommissioning phases of the Proposed Development. The assessment is informed by noise monitoring and survey work undertaken by TNEI Services Ltd.

# **Existing Conditions**

- The Site is located within a rural location, with no major roads, industries or cities within the immediate vicinity. Baseline noise surveys were undertaken at three Noise Monitoring Locations during April and May 2024. Noise surveys undertaken for the nearby Tuckey Solar Farm have also been referred to in completing the assessment. Noise levels were monitored from the field immediately north of Station house, the field south east of Monkomb Farm Complex and the field to the north of the Site. Surveys found that noise mostly came from East Claydon Road, farm work in the distance, birds and faint humming from overhead lines.
- 4.18 Overall, background noise levels are considered to be low in the day-time and very low at night-time.

#### **Effects during Construction and Decommissioning**

- The assessment identifies a number of receptors located near to potential on-site construction activities. The nearest sensitive receptor to the Site is Station House, located approximately 125m from the Site entrance temporary construction access track, located to the west of Station House, on East Claydon Road. Other receptors are located approximately 275m from construction activities taking place at the western edge of the main compound, in the same location the bund is proposed.
- There are several measures that are incorporated into a CEMP that will help to mitigate potential noise and vibration effects during the construction stage. With these measures in place, it is expected that the construction of the Proposed Development would result in temporary Minor Adverse (not significant) effects in relation to construction noise on the residential receptors assessed. It is expected that the same effect will occur at decommissioning stage and will be managed appropriately through a DEMP.

## **Effects during Operation**

All predictive noise modelling has been undertaken using data for plant that would be appropriate for a development of this size and class and two scenarios of technology/manufacturers have been considered to illustrate a possible range of results. The main noise sources are expected to come from the battery units, inverter/transformer units, high voltage (HV) grid transformers, synchronous compensators, and other less

noisey sources including auxiliary transformers, mini-substation or emergency diesel generators.

- The modelling concluded that there is potential for Minor Adverse (Not Significant) effects at night-time, at residential receptors assessed including Tuckey Farm and Tuckey Barn and Monkomb Farm (two monitoring locations), with embedded mitigation and additional noise mitigation in place. The choosing of plant equipment is also considered important.
- The noise modelling was based on the fact that all plant would be operating concurrently. However, not all will be required to operate at the same time and as such, the noise levels identified are expected to be lower that predicted. The plant machinery that will be used will be decided at procurement stage. The plant will be chosen based on its noise output to ensure it does not result in any adverse effects. Detail relating to this will be secured by way of a planning condition.

## **Mitigation and Monitoring**

Additional mitigation is required during operation to reduce noise levels of the Proposed Development at two monitoring locations at night-time in addition to embedded mitigation. It is suggested for candidate plant to be selected at the procurement stage and details selected submitted to the LPA for agreement. This, coupled with embedded mitigation, will result in there being no significant environmental effects in relation to noise and vibration.

# **Biodiversity and Ecology**

4.25 An assessment of the biodiversity and ecology effects of the Proposed Development at construction, operation and decommissioning stage has been undertaken by Applied Ecology.

## **Existing Conditions**

- The Site is not covered by any statutory or non-statutory wildlife site designation and does not included ancient woodland. The Site is also isolated and unconnected from the three Site of Special Scientific Interest (SSSI) sites that are located within 5km of the Site. The Site mainly comprises agricultural land and at the time of survey, is used for intensive arable cereal production and sheep grazing. The improved grassland sheep pasture field on the Site was short turf and species poor. Broadleaved plantation woodland and hedgerows are located within the Site.
- 4.27 Survey work concluded that breeding birds, including skylarks, yellowhammers and barn owls were present on the Site. It also found that the Site supports badgers and bat forage/commuting habits.
- 4.28 The Proposed Development will be situated on land that falls almost entirely within a "Green" great crested newt (GCN) development risk zone. However, the Site is devoid of any standing water habitat suitable for breeding GCNs and is located far enough from ponds within the surrounding area for the Proposed Development to cause a risk to the species. GCNs have therefore been scoped out of the EIA.

## **Effects during Construction and Decommissioning**

- The Proposed Development includes the provision of eight skylark nesting plots to ensure that there will be no loss of skylark numbers from the Site. With this mitigation in place, effects during construction on skylark farmland birds are assessed as Neutral (Not Significant).
- 4.30 None of the trees that are proposed to be removed at construction stage to enable the delivery of the Proposed Development possessed any potential bat roost features, and are trees with negligible bat roost suitability. The Site is also devoid of built structures that could support bat roosts.
- 4.31 Residual effects in relation to badgers from disturbance to setts and on foraging/commuting bats from loss of woodland and hedgerow are assessed as Minor Adverse (Not Significant). The CEMP will include various mitigation measures in respect of biodiversity and ecology which will be administered by the Ecological Clerk of Works (ECoW) during construction.
- At decommissioning stage, effects are assessed as ranging from **Minor to Moderate Beneficial (Significant)** due to returning the Site back to its pre-development state to arable and improved grassland pasture and the retention and protection of habitats.

  Ecological mitigation and monitoring will be outlined within a DEMP which will be implemented at decommissioning stage to ensure adverse impacts on protected faunal species are appropriately managed and mitigated.

#### **Effects during Operation**

- During operation, it is anticipated that there would be no indirect adverse impacts to the three SSSIs within 5km of the Site due to distance. Additionally, when operational the Proposed Development will not result in air pollution that could adversely impact these SSSIs.
- 4.34 The Proposed Development seeks the creation of new habitats to enhance biodiversity opportunities throughout the Site. This will be implemented through the provision of a Landscape and Ecological Management Plan (LEMP) or similar which will be required via a planning condition post the issue of a decision notice.
- 4.35 With mitigation in place, effects at operation stage on sitewide species from the creation of habitats are assessed as Minor Beneficial (Not Significant).

#### **Mitigation and Monitoring**

4.36 Mitigation is required at construction stage in the form of provision of eight skylark nesting plots located on the Site within areas of retained arable land to compensate for the displacement of this species. Monitoring and management of newly planted habitats to ensure they achieve and maintain the desired condition, through the implementation of a LEMP.

# **Traffic and Transport**

The Traffic and Transport Chapter determines the transport baseline conditions of the local road network within the area of the Site through surveys undertaken in September 2024 by

4.37

WSP UK Limited. The assessment within the chapter considers severance, delays, user amenity, fear and intimidation, hazardous and large loads and pedestrian safety.

## **Existing Conditions**

4.38 The study area is defined by identifying road links which are most likely to experience a change as a consequence of the Proposed Development. This includes the local road network in wider East Claydon, Granborough Road, A413 High Street, A143 Buckingham Road and A143 London Road, of which have all been assessed. The existing traffic flows on the identified links are provided as 'baseline traffic flows' against which the flows associated with the Proposed Development can be assessed.

## **Effects during Construction and Decommissioning**

- During the construction phase, there will be a need for deliveries of materials including heavy construction products. These deliveries will generate Heavy Good Vehicles (HGV) trips which are in addition to traffic movements generated by those employed as part of the onsite construction processes. It is expected that construction vehicles will access the Proposed Development from the south via a new temporary access point situated at the north side of East Claydon Road, approximately 260m west of the primary/existing access point.
- Nonetheless, the impact of this increase in traffic on routes within the study area was assessed, comparing forecast construction trips with the baseline traffic flows. During the construction phase, none of the identified links are forecast to experience a significant change in traffic volumes and as such, the effects are considered Negligible and Not Significant. It is identified within the Chapter that the movement of HGVs may result in Minor Adverse (Not Significant) effects in relation to hazardous and large loads and pedestrian safety.
- The increase of trips and effects identified to receptors are expected to be the same for the decommissioning phase.

## **Effects during Operation**

Once operational, the Proposed Development will only require vehicular trips to be made by maintenance and personnel persons every so often and therefore will generate minimal traffic flows. There would be minimal impact on the surrounding highway network as result of these trips and therefore the operational phase assessment is scoped out of the EIA. This was agreed by the Council through the EIA Scoping process.

## **Mitigation and Monitoring**

4.43 The assessment did not identify any significant effects that would require mitigation beyond that already included in the embedded mitigation identified (i.e. CTMP).

# **Climate Change and Resilience**

The Climate Change Impact Assessment is presented in two parts – the assessment of greenhouse gas/carbon emissions and the assessment of the vulnerability of the Proposed Development to climate change effects (ie. Climate Resilience).

The greenhouse gas assessment identified considers the likely significant effects of the Proposed Development on the climate (i.e. greenhouse gas/carbon emissions), including emissions arising from material production, transportation, construction activities and equipment installation, and how to minimise these over the lifetime of the Proposed Development.

## **Greenhouse Gas (GHG) Emissions**

## **Existing Conditions**

The Site is currently comprised of agricultural fields separated by landscape planting, trees and hedgerows around their perimeters. Agricultural activities can store carbon during farming practices. Emissions are also generated by agricultural machinery used for harvesting crops, however these are anticipated to be minimal. Based on the existing uses of the Site the current baseline GHG emissions are determined to be zero.

#### **Effects during Construction and Decommissioning**

4.47 A carbon calculator tool approved by the Building Research Establishment (BRE) was used to calculate the upfront carbon emissions associated with the construction stage of the Proposed Development. The total GHG emissions estimated to be generated during this stage were calculated at 1460.64 tonnes of CO2e (annually). This equates to 0.048% of Buckinghamshire's carbon budget and 0.00027% of the wider UK carbon budget for this period. The UK carbon budgets are legally binding caps on the amount of greenhouse gas emissions that the UK can emit over a five year period. These national carbon budgets have been used to determine equivalent budgets for the Buckinghamshire region to provide an additional level of contextualisation for the emissions associated with the Proposed Development. The GHG emissions associated with the construction stage are therefore considered to be Minor Adverse (Not Significant) on the local carbon budgets and Negligible (Not Significant) on the UK budget.

#### **Effects during Operation**

- The same carbon calculator tool was used to calculate emissions associated with the operational phase of the Proposed Development, including for the repair and maintenance of building components. The total GHG emissions estimated to be generated during this stage were calculated to be 31240.66 tCO<sub>2</sub>e (annually). This equates to 1.04% of Buckinghamshire's carbon budget and 0.00584% of the wider UK carbon budget for this period. The GHG emissions associated with the operational stage are therefore considered to be **Moderate Adverse (Significant)** on the **local** carbon budget and Negligible (Not Significant) on the UK budget.
- Overall, there will be a Beneficial effect on local and UK carbon budgets by curtailing a total of 8.8 mmtCO<sub>2</sub>e<sup>1</sup> emissions over its 40 year lifetime (13mmtCO<sub>2</sub>e when considering the 60 year assessment scenario). Therefore, contributing to local and national policy ambitions, by supporting the decarbonisation of the grid, allowing for more sustainable use of renewable energies, and reducing the dependence on fossil fuels.

<sup>&</sup>lt;sup>1</sup> Million Metric Tons of Carbon Dioxide Equivalent

#### **Mitigation and Monitoring**

Due to the nature of the Proposed Development and the minimal vehicle trips required for maintenance, the operational effects in relation to the emission of greenhouse gas is Negligible and therefore further mitigation, beyond the design specification identified for the most energy efficient technologies to be incorporated into the development, no additional mitigation is required.

#### **Climate Resilience**

The Climate Change Resilience (CCR) assessment examines how climate change may pose risk to the Proposed Development. The CCR assessment considers whether the effect on receptors by potential impacts of the Proposed Development under the current condition (without climate change) are likely to be different under an alternative future climate baseline.

#### **Effects during Construction and Decommissioning**

There are several measures that are incorporated into CEMP that will help to mitigate potential climate change impacts during the construction stage. These measures include robust dust control measures, the utilisation of existing drainage infrastructure and avoiding construction works in the vicinity of surface or groundwater. With these measures in place, the only potential impact that was deemed to be significant (Moderate Adverse Not Significant) is the increased risk of unsafe working environments during high temperatures. All other impacts on receptors in respect of increases in winter rainfall, decreases in summer rainfall and increased intensity and frequency of storm events are deemed to be Negligible or Minor Adverse and Not Significant.

#### **Effects during Operation**

4.53 For each technical area considered within the EIA, it is not anticipated that the conclusions made assessments will change significantly under future climatic conditions. No new significant effects are concluded.

#### Mitigation and Monitoring

For decommissioning, additional mitigation could be implemented to further mitigate the amount of embodied carbon produced at the end of the life cycle (cease of the Proposed Development at the end of its expected lifespan). This includes producing an end-of-life plan to demonstrate how the materials will be disposed of materials and re-used, where possible. Mitigation could also be implemented in the form of a Climate Change Adaptation Plan which aims to mitigate expected effects of climate change onto the Proposed Development in the future in order to reduce any significant effects identified.

# **Archaeology**

An assessment has been undertaken by Headland Archaeology in relation to below ground archaeology. It determines the baseline conditions of the Site and assesses the likelihood of significant effects during construction, operation and decommissioning phases. The assessment has been based on desk based research and informed by field visits and trial trenching evaluations undertaken during March and April 2025.

## **Existing Conditions**

There are no designated heritage assets recorded by the National Heritage List for England (NHLE) within the Site. There are 11 non-designated heritage assets within the Site, five of which are recorded by Buckinghamshire HER and the others have been identified through historical map regression, aerial photography, LiDAR analysis and geophysical surveys. The non-designated assets on the Site are either Negligible, Low (local) or Low to Medium (regional) importance.

## **Effects during Construction and Decommissioning**

- 4.57 The provisional results indicate that there is a discrete Romano-British ladder settlement in the northeast of the Site and no evidence for a Roman Road bisecting the Site.
- Following mitigation measures, it is anticipated that there will be no residual effects as the archaeological potential of the Site will have been sufficiently mitigated before construction of the Proposed Development. This also means that there will be no likelihood for significant residual effects at decommissioning stage as appropriate mitigation would have already been undertaken.

## **Effects during Operation**

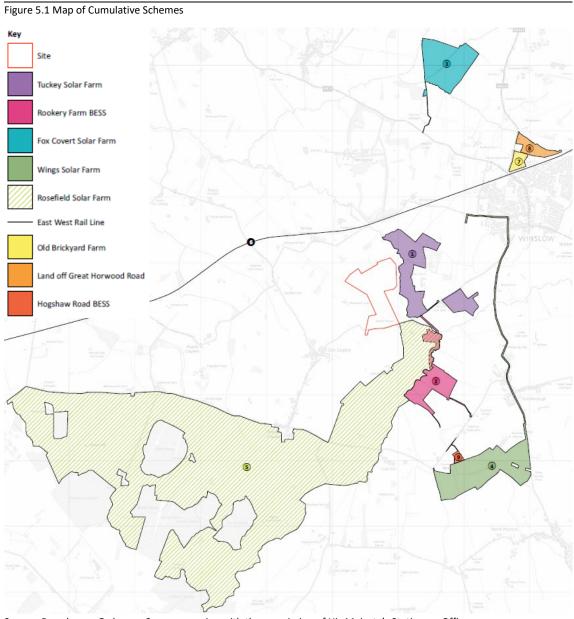
4.59 It is anticipated that there will be no residual effects following mitigation as the archaeological potential of the Site will have been sufficiently mitigated during the construction phase.

#### **Mitigation and Monitoring**

The initial evaluation trial trenching suggested that mitigation will be required in relation to archaeological remains in the northeast of the Site, comprising a discrete Romano-British ladder settlement. The mitigation will be agreed with the archaeological officer, however it is suggested that this could comprise a limited strip, map, and sample or targeted excavation.

# **5.0** Cumulative Assessment

In addition to the above, an assessment has been carried out to consider if additional impacts could arise if the Proposed Development is considered alongside other emerging proposals in the surrounding area - this is called a 'cumulative assessment'. A search of records by Buckinghamshire Council has identified other large scale development coming forward in the surrounding area. The list of schemes has been informed by consultation with BC during the EIA Scoping process and regular monitoring of applications up to this planning submission. These schemes are shown in the Map at Figure 5.1.



Source: Based upon Ordnance Survey mapping with the permission of His Majesty's Stationery Office. © Crown Copyright reserved. Licence number 100017707. Lichfields Annotations.

#### Other cumulative considerations

- National Grid Replacement Substation: National Grid has published news of its intention to develop a replacement substation to the immediate west of the existing substation, located approximately 100m south of the Site, across East Claydon Road. At the time of writing this ES, a planning application has not been submitted in relation to the replacement substation. The Proposed Development and the replacement substation are intrinsically linked because the Proposed Development will connect into the national grid at the replacement substation. An assumed baseline has been applied which assumes that the replacement substation is under construction and/or operational for the purposes of the assessment of effects for the Proposed Development.
- 2 **East West Rail (EWR) Line:** EWR (Cumulative Scheme 6) has shown within its pre-application consultation that while the railway line itself runs to the north of the Site (outside of the Site boundary, the Applicant of the EWR is looking at some works within the East Claydon Greener Grid Park site including cabling and habitat enhancement works. Statkraft is engaging with EWR, and for this EIA it has been assumed that agreement will be reached between the two parties that there will be no conflicts in the delivery of the two developments. Cumulative effects have been assessed in relation to the main nature of the EWR development.

# **Cumulative Assessment Summary**

- The cumulative assessment has concluded that no adverse significant cumulative effects are considered likely, and the mitigation measures already identified in this ES are sufficient to address effects arising. There is a very low likelihood of a significant cumulative noise effects during operation, transport effects during construction, or built/below ground heritage effects during either phase. Landscape and Visual cumulative effects are expanded on below.
- 5.3 Cumulative Scheme 1 (Tuckey Solar Farm), Cumulative Scheme 5 (Rosefield Solar Farm), and Cumulative Scheme 6 (East West Rail Line) are located in closer proximity to the Site. The schemes have a visual relationship with the Site and there are a number of locations where the Site and these schemes will be visible within the same view, however views are anticipated to be primarily to the existing mature vegetation and the proposed landscape scheme of the Site and the cumulative schemes. Limited views of the proposed built form within the Site and the above schemes may be possible therefore it is considered that the visual cumulative effects could range from **Major Moderate Adverse** (**Significant**) to Moderate Adverse (Not Significant) for receptors in close proximity to the Site.
- It is anticipated that cumulative effects on the landscape character are expected to arise as a result of Cumulative Schemes 1 (Tuckey Solar Farm), 2 (Rookery Farm), 5 (Rosefield Solar Farm) and 6 (East West Rail Line) being located within proximity of the Site and located wholly or partially within the same Local Character Area (LCA) (5.6 Claydon Valley). The cumulative effects are considered to range from High to Medium magnitude resulting in a **Major to Moderate Adverse (Significant)** to Minor Adverse (Not Significant) effect. The high magnitude of effect on the local landscape is considered to be primarily a product of the extensive nature of Cumulative Scheme 5 (Rosefield Solar Farm) and the proximity to

Cumulative Scheme 1 (Tuckey Solar Farm). It is also noted that intervisibility between the built form within the Site and Cumulative Scheme 5 is anticipated to be extremely limited.

# **Summary and Outcomes**

- 6.1 Comprehensive assessment work has been undertaken to build environmental improvements and mitigation into the design of the Proposed Development and reduce adverse effects as far as possible. These 'embedded' measures can be secured by fixing them to the planning permission for the Proposed Development (e.g., by clearly identifying the plans or documents that have been described in this ES and requiring that the Proposed Development is brought forward in substantial compliance with the details they describe).
- There are also other measures that have been identified through the assessment process that will need to be secured in the future, and as the Proposed Development is brought forward. Planning conditions and legal commitments associated with the planning permission for the Proposed Development can ensure that these are delivered as envisaged.
- Residual effects which have been identified to be '**Significant**' in EIA terms with the mitigation measures taken into account are:
  - Major / Moderate Adverse to Moderate Adverse and Significant visual effects on residents within the Monkomb Farm complex experienced within the construction phase and Year 1 of the operation. The LVIA also assessed the effects at Year 10 of operation, after the landscaping and tree planting has matured. At this point, the proposed landscaping features will have provided sufficient screening of the Proposed Development, reducing the effects on these receptors. No other significant visual effects are likely.
  - Moderate Adverse (Significant) effects are considered likely on the local climate from operational energy and embodied carbon associated with the repair, maintenance and refurbishment however this is balanced with the overall positive (beneficial) impact on local and UK carbon budgets by curtailing approximately 8.8-13.0 mmtCO2e<sup>2</sup> emissions during its lifetime. Therefore, contributing to local and national policy ambitions, by supporting the decarbonisation of the grid, allowing for more sustainable use of renewable energies, and reducing the dependence on fossil fuels.
  - Minor to Moderate Beneficial (Significant) effects are expected to be achieved in relation to habitats and species onsite at the decommissioning phase, through the retention and protection of the planting and habitat enhancements created as part of the Proposed Development. These benefits are reflected through the significant biodiversity net gain to be achieved onsite: +58.50% net gain for habitats and a +10.24% net gain for hedgerows.

<sup>&</sup>lt;sup>2</sup> Million Metric Tons of Carbon Dioxide Equivalent

# Availability of the Environmental Statement

- A paper or electronic copy of the ES and Non-Technical Summary ('NTS') is available from:
  - Lichfields, The Minster Building, 21 Mincing Lane, London, EC3R 7AG
  - Tel: 020 7837 4477
  - Email: london@lichfields.uk
- 7.2 Reasonable copying and printing charges will apply. An electronic copy (PDF version provided by electronic file transfer) is available free of charge.
- 7.3 Alternatively the ES and associated planning application documents can be viewed online at <a href="https://publicaccess.aylesburyvaledc.gov.uk/onlineapplications//search.do?action=simple&searchType=Application">https://publicaccess.aylesburyvaledc.gov.uk/onlineapplications//search.do?action=simple&searchType=Application</a>. An electronic copy is also available for viewing during the opening hours at Aylesbury Library using its free public access computers on the ground floor of the following address:
  - Aylesbury Library, Walton Street, Aylesbury, Buckinghamshire, HP20 1UU
  - Tel: 01296 382 415
  - Email: <u>lib-ayl@buckinghamshire.gov.uk</u>
- 7.4 All comments on the ES (and the planning application) should be issued directly to BC.

# 8.0 Definitions and Glossary of Key Terms

- **AOD** Above Ordnance Datum is a vertical datum used by an ordnance survey as the basis for deriving altitudes on maps.
- AOI Area of Impact is an area where the majority of impacts are anticipated to arise, considering the potential scale of the impact of the Proposed Development and taking into consideration the location of sensitive receptors.
- **Battery Energy Storage System, or BESS** a technology that stores electrical energy in large batteries for later use. It allows excess electricity to be captured and stored when there is a surplus of power, such as during periods of low demand or when renewable energy sources like solar or wind are generating more electricity than needed. This stored energy can then be released back into the grid when demand is higher or when renewable energy production is low.
- **Batteries** the main part of the BESS, the batteries store electricity in a form that can't be used directly by most homes and devices.
- BC Buckinghamshire Council who are the local planning authority that is responsible
  for determining the planning application, specifically Aylesbury Vale Area of
  Buckinghamshire.
- **Biodiversity Net Gain** A planning rule, required by legislation, that means any new development must leave the natural environment in a better condition than it was before the development started. Legislation requires a 10% betterment, or 'net gain'.
- **BRE** Building Research Establishment is a centre of building science in the UK which produces research publications for the building sector.
- **CEMP** Construction Environmental Management Plan is a plan that will manage the environmental effects arising from the construction of the Proposed Development.
- **CTMP** Construction Traffic Management Plan is a plan that will manage the environmental effects arising from construction vehicles during the construction stage of the Proposed Development, and defining aspects such as construction routing, community liaison,
- Council (the) for this ES: Buckinghamshire Council (Aylesbury Vale Area).
- **Cumulative effects** effects that arise from the combined effect of the Proposed Development with other committed development schemes that, individually, may be insignificant, but when combined with other impacts, may be significant.
- **DEMP** Decommissioning Environmental / Ecological Management Plan, a plan that will manage the environmental effects arising at the decommissioning stage of the Proposed Development.
- **EIA** Environmental Impact Assessment a formal process of assessment covered by the Town and Country Planning (EIA) Regulations 2017.
- **Embedded Mitigation** modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project, and do not require additional action to be taken.

- ES Environmental Statement the document setting out the findings from the EIA.
- **Flood Zone 1** Defined by the Environment Agency as having a 'Low Probability' Land having a less than 1 in 1,000 annual probability of river or sea flooding.
- Flood Zone 2 Defined by the Environment Agency as having a 'Medium Probability' Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding.
- **Flood Zone 3** Defined by the Environment Agency as having a 'High Probability' Land with a 1 in 100 (1%) or greater chance of flooding each year.
- **GHG** Greenhouse Gas gases in the atmosphere that raises the surface temperature.
- Greener Grid Park, or the Proposed Developed Area, or the Compound the area of land within the Site covering 8.4hectares which contains built development of a Battery Energy Storage System, grid balancing equipment and associated infrastructure, set within the larger Site of 45.3hectares.
- Grid Balancing Equipment infrastructure that acts like a traffic controller for electricity. It helps manage the flow, keeping everything moving smoothly and preventing problems. When a lot of energy comes in from batteries or solar panels, this device makes sure the power grid stays balanced and stable.
- **Inverters** a type of infrastructure within the BESS, which are devices that act like a translator, changing that stored energy from the batteries into a usable form so it can be sent to the power grid, or used right away.
- **LEMP** Landscape Environmental Management Plan an evolving document that will manage and maintain the landscaping strategy during the lifetime of the development.
- LVIA Landscape and Visual Impact Assessment a document that assesses the baseline context against the Proposed Development and the potential impacts that could arise on townscape and visual receptors.
- Mitigation measures that can reduce adverse environmental effects.
- **NTS** Non-Technical Summary this document, that is a part of the ES which summarises the key issues and findings of the ES that is accessible and can be easily understood by the general public.
- Proposed Development the proposals which are assessed through the Environmental Impact Assessment and for which planning permission is sought, also known as the 'East Claydon Greener Grid Park'.
- **Significant/Significance** a measure of the importance or gravity of an environmental effect defined by significance criteria specific to the environmental topic or aspect assessed.
- **Site (the)** the site within which the Proposed Development will come forward and as shown on Figure 1.1 of this Non-Technical Summary, which covers 45.3hectares.
- **Transformers** a type of infrastructure within the BESS, which are devices that act like volume controls, adjusting the level of electricity coming from the battery system so that it can safely travel through power lines to homes and businesses.

# **Types of Impact Identified**

- **Major** considerable impacts due to their extent, duration or magnitude; are of more than local significance; or (for adverse effects) breach particular standards.
- **Moderate** limited effects which may be significant (for example if a particular receptor affected is particularly sensitive).
- **Minor** slight, very short or highly localised effects.
- **Negligible** barely perceptible effects.
- None/Nil no effects anticipated.
- **Adverse** the effect is worse than that currently experienced.
- **Beneficial** the effect is better than that currently experienced.

# 9.0 Key Plans

- 1 Site Location Plan
- 2 Proposed Construction Block Layout Plan
- 3 Proposed Operational Block Layout Plan
- 4 Landscaping Plan

