



# Chapter 3 - Site Selection and Alternatives

## Postcombe and Lewknor Solar Farm Environmental Statement

### Postcombe and Lewknor Solar Farm Limited

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## Acronyms and Abbreviations

EIA	Environmental Impact Assessment
ES	Environmental Statement
ha	Hectare
PV	Photovoltaic
UK	United Kingdom
SODC	South Oxfordshire District Council



## 3. Site Selection and Alternatives

### 3.1 Introduction

- 3.1.1 This chapter describes the site identification and design iteration processes which have been undertaken by the Applicant prior to arriving at the final design, described in **Chapter 4**.

### 3.2 Background

- 3.2.1 The Applicant proposes to construct the Proposed Development within the South Oxfordshire District Council (SODC) area. The principles of the EIA process, that site selection and project design should be iterative, constraint-led processes, have been followed as part of the Proposed Development. This has ensured that potential adverse environmental effects, as a result of the Proposed Development, have been avoided or minimised as far as reasonably possible.

### 3.3 Consideration of Alternatives

- 3.3.1 The EIA Regulations state that the ES must include “*a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment*”.
- 3.3.2 Paragraph 2 of Schedule 4 expands upon this by adding that the information to be provided (where appropriate) should include: “*A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.*”
- 3.3.3 There is no detailed guidance provided by the UK Government regarding consideration of alternatives. Guidance contained in Paragraph 41 of the ‘Environmental Impact Assessment’ section of the Planning Practice Guidance portal comments that: “*The 2017 Regulations do not require an applicant to consider alternatives. However, where alternatives have been considered, paragraph 2 of Schedule 4 requires the applicant to include in their Environmental Statement a description of the reasonable alternatives studied (for example in terms of development design, technology, location, size and scale) and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.*”

### 3.4 Site Selection

- 3.4.1 Following engagement with the landowners, a desktop assessment was conducted to identify areas of opportunity for a viable solar development. Taking a 5 km search



radius from the point of connection at Harlesford Substation (SP 68973 01070), a 5 km study area was chosen because this is felt to be a maximum cable extent before reducing the potential of the cable efficiencies and increasing potential for environmental impacts. To the south-east of Harlesford Substation the area is dominated by the Chilterns National Landscape to the south and Green Belt to the north-west. Generally, to the north-west there are increased levels of surface water and river flooding around Oxfordshire. In addition, generally within the study area there is understood to be large areas of Grade 2 agricultural land.

- 3.4.2 Based on the outcome of this work, several potential areas were identified. Following site visits and further review, the Site at Postcombe was selected as a suitable location for the proposed solar farm (**Figure 1.1**).

### **Location**

- 3.4.3 The solar site lies approximately 450 m north of the village of Lewknor and 4.3 km south of the town of Thame. It consists of two land parcels which border either side of the M40 motorway, with the A40 to the east, Weston Road to the west and Salt Lane to the north. The Site area is approximately 97.5 ha including the proposed cable corridor.

- 3.4.4 The solar site was identified as an area which would be appropriate for solar development through initial feasibility work which considered the following key issues:

- Grid connection (i.e. substation sited approximately 3 km from the solar site ensures sufficient capacity to export the power generated);
- Environmental designations (i.e. international and national designations for ecology, landscape and cultural heritage);
- Outside Chilterns National Landscape (formerly Chilterns AONB);
- Outside of Green Belt;
- Outside of flood risk zones;
- Proximity to motorway (reduces visual and transport impact);
- Generally flat or south-facing; and
- Energy yield (i.e. sufficient irradiation).

## **3.5 Design Process**

### **Design Principles**

- 3.5.1 In an EIA, the identification of constraints should continue throughout the design process as more detailed surveys confirm any additional constraints to development. In this way, the findings of the technical and environmental studies can be used to inform the design of a development and hence achieve a 'best fit' within the environment of the Proposed Development.



- 3.5.2 The Applicant adopted the following principles during the design iteration process where possible to ensure the final design of the Proposed Development was the most suitable for the site:
- avoid designated and protected sites;
  - sensitively designed layout to avoid or minimise setting effects on heritage assets;
  - avoid or minimise impacts on any identified sensitive ecological habitats or species;
  - minimise impacts in respect of noise and the visual amenity of residential properties;
  - minimise traffic and transport impacts;
  - consider topography in terms of suitability for siting panels;
  - avoid areas of high-risk flooding; and
  - maximise the potential renewable electricity generation.
- 3.5.3 The design of any solar development is driven by the key objective of positioning panels so that they capture the maximum energy possible within a suitable area, further informed by environmental and technical constraints. All site constraints are discussed in more detail in **Chapter 4** and are shown in **Figure 4.1**.
- 3.5.4 It is important to note that the identification of a constraint does not necessarily result in the exclusion of that area from the potential development envelope; rather it means that careful thought and attention was paid to the constraint and the design altered appropriately. The key constraints considered during the design process included:
- Landscape and visual constraints, also taking account of potential mitigation and enhancement opportunities for example through landscape planting;
  - Location of residential receptors;
  - Location of existing infrastructure;
  - Presence of cultural heritage features; and
  - Presence of protected habitats.
- 3.5.5 The identification of constraints continued throughout the design evolution process as more detailed surveys refined the development envelope.
- 3.5.6 Details of how the design has evolved to minimise the potential environmental effects associated with the identified constraints are set out below.
- Layout Evolution/Design Iterations**
- 3.5.7 This section details the key design iterations that have been undertaken as the Applicant has sought to achieve a viable design that maximises the renewable electricity generation from the solar site, whilst minimising the environmental



effects. These design iterations have been made in line with the design principles set out in **Paragraph 3.5.2**.

- 3.5.8 There have been three principal iterations in the design of the Proposed Development. These iterations, referred to as Layouts 1 to 3, are summarised below.

#### **Layout 1 (Preliminary Layout)**

- 3.5.9 Layout 1 (**Figure 3.1**) was informed by preliminary desktop environmental studies, and the layout was the first layout presented to SODC via their pre-application consultation process in January 2022. This layout included an additional field that is not included within the final design due to discussions with the SODC and concerns over proximity to the AONB.

#### **Layout 2 (Refined Layout)**

- 3.5.10 Layout 2 (**Figure 3.2**) was informed by ongoing survey work. It was presented to SODC in September 2023 through a second round of pre-application consultation. Key changes to the layout were:

- amendment to the red line boundary with increased set back from the village of Lewknor;
- increased set back from the residential property close to the south-west of the solar site;
- the substation and other infrastructure were placed in the north-eastern corner of the western land parcel, away from Postcombe and other nearby residential properties, to minimise visibility;
- the overhead line and Public Right of Way were buffered to allow for sufficient space for public access once the Proposed Development is operational; and
- avoidance of identified badger sett locations.

#### **Layout 3 (Final Layout)**

- 3.5.11 Layout 3 (**Figure 3.3**) is the finalised layout which was informed by further consultation with the local community, including an in-person community engagement event. The feedback also contributed to the name change of the project from 'Lewknor Solar Farm' to 'Postcombe and Lewknor Solar Farm'. The iterative impact assessment process has resulted in the following principal environmental and technical changes:

- inclusion of a cable corridor for the grid connection;
- a further 10 m set back from the village of Postcombe;
- additional space allocated for landscape mitigation planting between the Site and the village of Postcombe, including a new woodland block and new hedgerow planting; and





- provision of sustainable drainage features including swales along the north-eastern and south-western boundaries.

## 3.6 Summary

- 3.6.1 The main change between Layout 2 and Layout 3 is the added cable corridor. Layout 3 is the layout that is assessed within this ES. The final layout comprises solar photovoltaic modules covering an area of ~83 ha with an indicative maximum panel height of 3.1 m, an on-site substation, cable corridor, control building, inverters and transformers, temporary construction compound, security fencing, access tracks, and landscape planting.
- 3.6.2 The EIA process has been iterative, so that the potential adverse effects of the Proposed Development identified throughout the EIA and design process could be avoided and overall impacts of the Proposed Development reduced.
- 3.6.3 The assessment of potential effects of the Proposed Development are addressed in **Chapters 5 to 9** of the ES. The residual effects after mitigation have been applied are provided in each relevant technical chapter and are summarised within **Chapter 10**.



## 3.7 References

Gov UK (2017). *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017*. Available at: <https://www.legislation.gov.uk/uksi/2017/571> [Accessed 28 February 2025].

