



Third
Revolution
Projects

Chapter 2: Site Selection & Consideration of Alternatives

Tydd Solar: Proposed Solar Farm, Land at Treading Field, Treading Drain, Tydd St. Giles, Cambridgeshire PE13 4PL



Applicant: Pathfinder Clean Energy UKDev Ltd

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1.0 Introduction

- 1.0.1 The following chapter details the process undertaken in selecting the site as a potential suitable location for the Proposed Development, provides a description of the site and surrounding area, and discusses the design evolution process.
- 1.0.2 The process for Environmental Impact Assessment in the context of town and country planning in England is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('The Regulations'). The Proposed Development falls under Schedule 2 of The Regulations as it would be "a generating station". The criteria for considering whether a Schedule 2 development requires the preparation of an EIA are set out in Schedule 3 of the EIA Regulations. Section 4 of the EIA Regulations details the EIA process while Sections 4 and 5 and Schedule 4 of the EIA Regulations provide details of the information to be included within the Environmental Statement.
- 1.0.3 Additional topic-specific legislation, policy and guidance documents are noted within the technical assessment chapters of this Environmental Statement and within the supporting Technical Appendices.
- 1.0.4 The principles of the EIA process, including that site selection and project design should be an iterative constraint-led process, have been followed. This has ensured that potential adverse impacts on the environment, as a result of the proposed development, have been avoided or minimised as far as reasonably possible through the design process.
- 1.0.5 This chapter has been prepared in the context of the issues discussed in more detail in the relevant technical chapters (Chapter 5: Cumulative Landscape and Visual and Chapter 6: Agricultural Circumstances), and in the supporting technical assessments (provided as appendices to this Environmental Statement). This chapter does not pre-empt the conclusions of the technical assessments, but seeks to explain how potential environmental effects have informed the design of the proposed development.
- 1.0.6 The proposed design is described in Chapter 3: Proposed Development Description and is shown on Figure 3 of Chapter 3.

2.0 Site and Surroundings

- 2.0.1 The site lies within the administrative areas of South Holland District Council and Fenland District Council and is located just to the east of the settlement of Sutton St. Edmund.
- 2.0.2 The site is comprised of low-lying agricultural land in arable production. The topography of the site is almost completely flat with an elevation from -1m to 1m AOD. It comprises multiple field parcels situated east of Guanockgate Drive. Elloe Bank and Lady Nunn's Old Eau run through the site.
- 2.0.3 The surrounding area is characterised by farmland in arable production. The landscape is open, with few trees or hedges marking the boundaries between fields. Currently, the field access is gained via existing accesses off Guanockgate Road or Elloe Bank. Cambridgeshire Bridleway 238/13 bisects the site from north to south while Lincolnshire footpaths SuSE/8/1 and Tydd/4/1 run along the existing site access.

- 2.0.4 Existing overhead electricity infrastructure is present in the vicinity of the site. Specifically, a 132kV National Grid overhead line is located within one of the southern parcels of the site and represents the point of connection for the proposed solar farm's export.

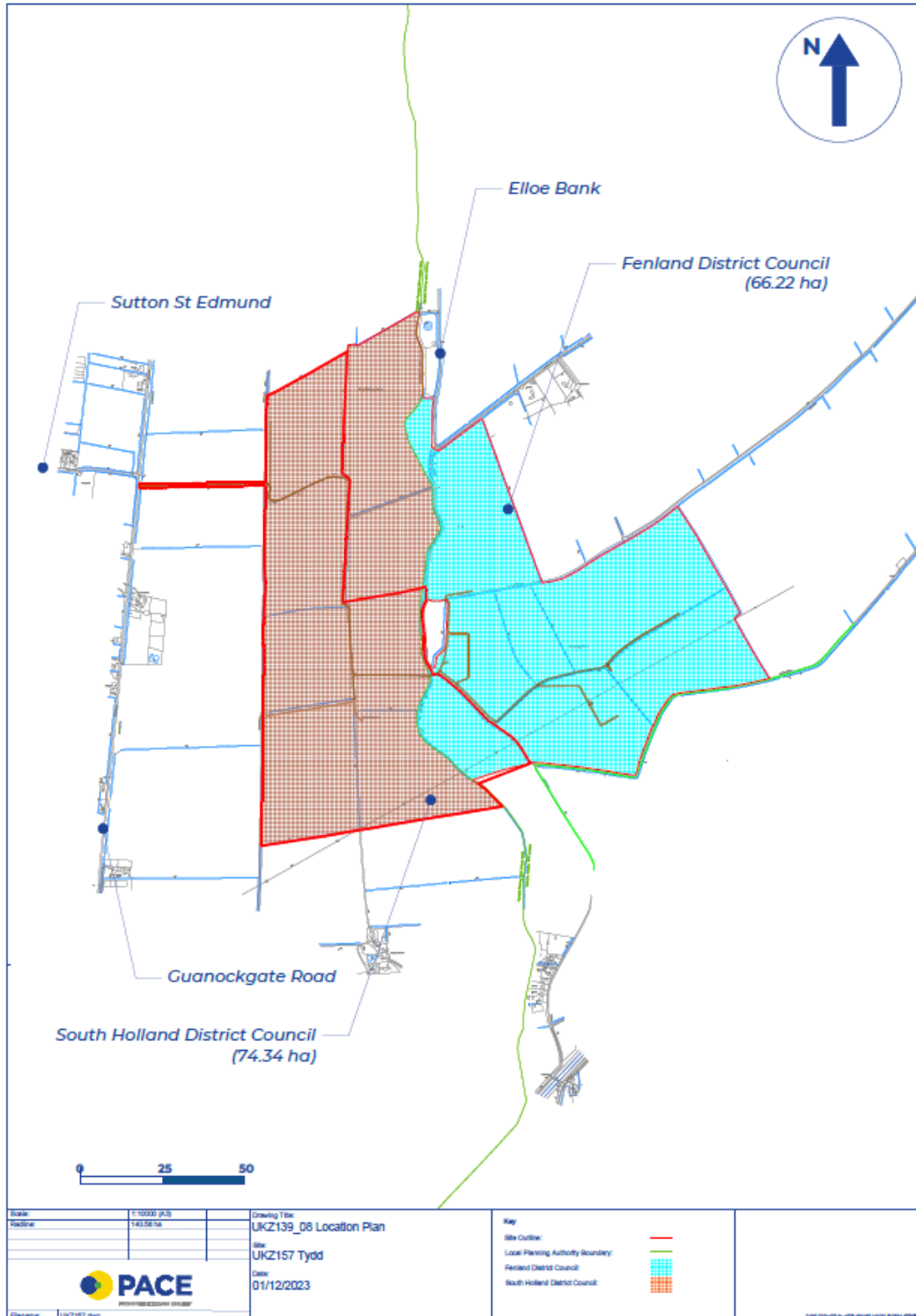


Figure 1: Location Plan

3.0 Site Selection and Consideration of Alternatives

- 3.0.1 Schedule 4, paragraph 2 of the EIA Regulations requires that an ES 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.”
- 3.0.2 Planning Practice Guidance (PPG) (Paragraph: 035 Reference ID: 4-035-20170728, revision date 28th July 2017) indicates that where ‘...alternative approaches to development have been considered, the Environmental Statement should include a description of the reasonable alternatives studied which are relevant to the proposed development and its specific characteristics. In evaluating the reasonable alternatives studied, an indication should be provided of the environmental effects...’
- 3.0.3 Neither the EIA Regulations nor the PPG identify a specific methodology for the assessment of alternatives. They do not prescribe criteria to be used to inform the assessment of ‘reasonable alternatives.’ The methodology adopted is based on professional experience of similar projects and an understanding of the proposals and its characteristics, as well as focus on the delivery of a proportionate assessment, in line with PPG.
- 3.0.4 The main alternatives including design, component specification, location, size and scale have been considered for the site. The planning applications were accompanied by a Site Selection document which detailed the approach and methodology taken by the applicant in identifying suitable sites for the proposed development. This document is available at Appendix 4
- 3.0.5 Of principle concern in considering alternative sites is the availability of a grid point of connection. The electricity network was designed for centralised generation and as a result, large parts of the network (and therefore the country) do not have the capacity to accommodate new connections. Accordingly, project locations are determined in relation to available grid connection capacity rather than by locally specified needs.
- 3.0.6 Working with NESO, the applicant has identified available grid capacity along the the 132kV line connecting to the Eaton Socon Circuit, as shown in Figure 2. Any energy development needs to be at a close enough distance from the substation and grid line to ensure a viable connection can be made. These distances vary, depending on the connection costs and substation/circuit voltage. PACE has adopted a 1km ‘study area’ either side of the 132kV line, in line with industry standards and best practices. Any sites further than 1km from the line were discounted on the basis that it would not be financially or practically feasible to deliver a solar scheme at such a distance from the grid point of connection.

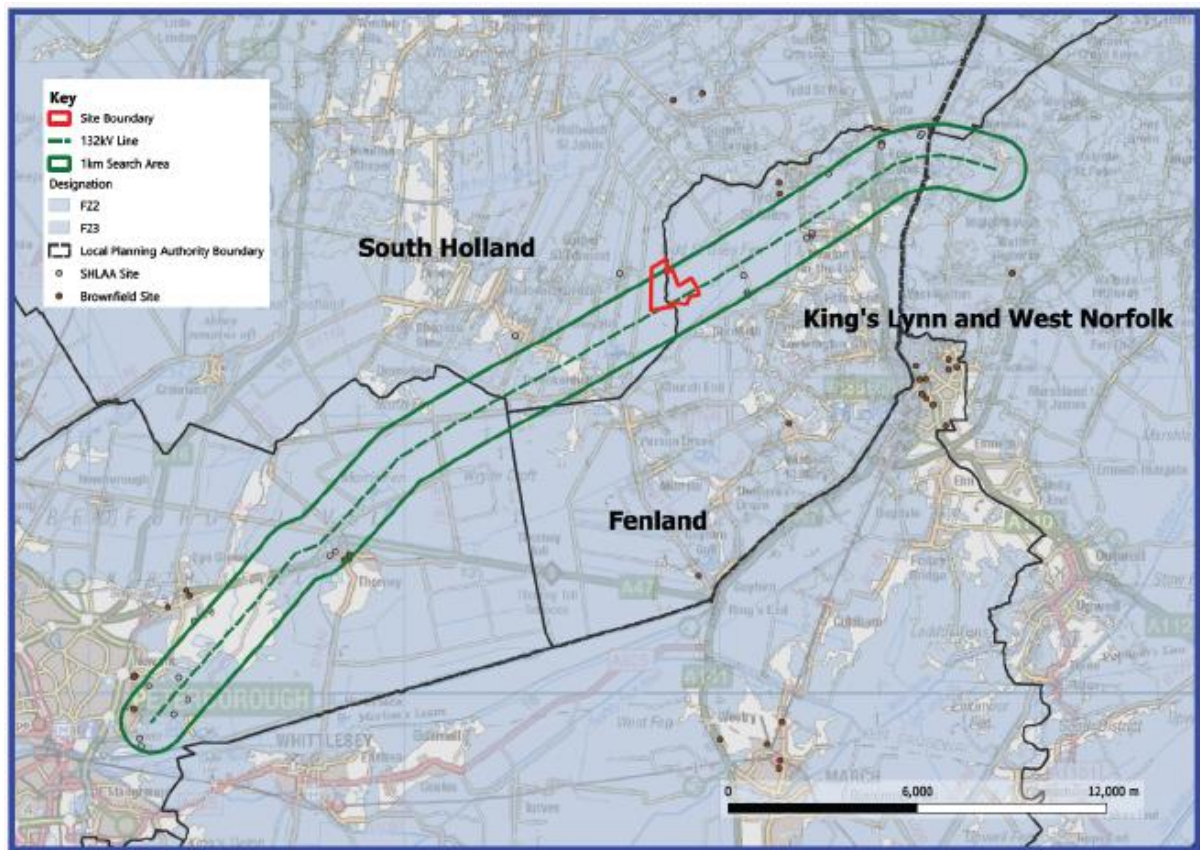


Figure 2: The application site, 132KV line and study area

- 3.0.7 Within the 1km study area, the applicant undertook a study to identify all potential sites which were of sufficient size to accommodate a solar scheme that could make efficient use of the available grid capacity. The landholdings identified in this study are shown in Figure 3.

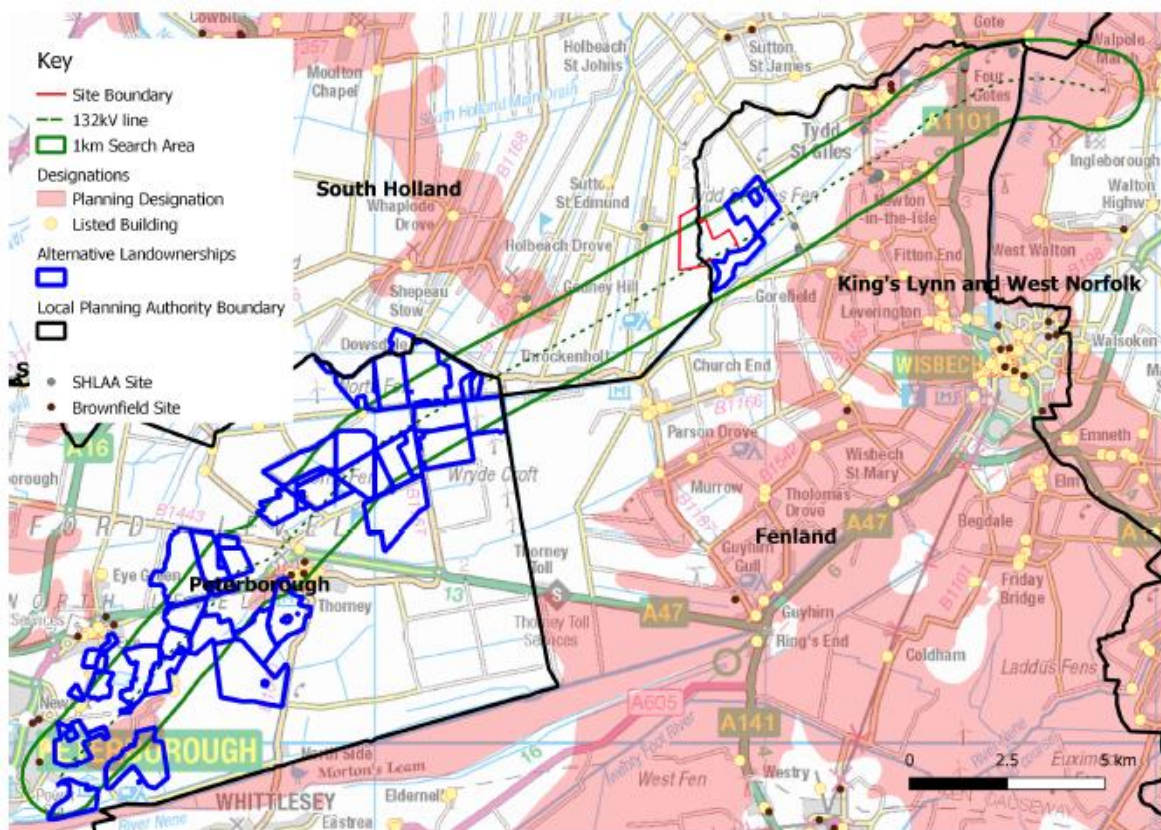


Figure 3: Alternative sites considered

3.0.8 Detailed analysis of each of the sites were undertaken, taking into account:

- planning & environmental designations (i.e. international, national and local designations for ecology, landscape and cultural heritage);
- agricultural land quality (i.e. whether a given site represents the lowest quality of agricultural land that the development could reasonably come forward on);
- cumulative developments (i.e. the proximity of the site to other solar farm developments and the potential for significant cumulative effects arising between them);
- potential for impacts arising to surrounding sensitive receptors (including dwellings and public rights of way (PRoW)); and
- yield (i.e. whether the topography of the site would accommodate a design that would have sufficient irradiation to operate a solar farm).

3.0.9 An assessment of each of the sites is set out in Table 1 of the Site Search document which was submitted in support of the planning application. Other than the application site, each landholding was discounted for a relevant reason, ranging from heightened cultural heritage sensitivity, agricultural land quality, flood risk or physical constraints that would restrict a solar development within the site.

3.0.10 The study identified the application site as having good potential for solar and BESS development and with minimal environmental constraints. It determined that the site would be appropriate for a solar development in that it:

- has a grid point of connection within the site itself, via the existing 132kv lines that run through the site, which would enable energy to be exported via the grid agreement in place between the applicant and NESO;
- is not subject to any planning or environmental designations which would render a solar farm development inappropriate or unacceptable;
- has a lower agricultural land grade than the prevailing grade of the surrounding area, and so would successfully direct development toward the lowest agricultural land grade available;
- would not result in unacceptable cumulative impacts when considered in the context of surrounding renewable energy developments;
- is suitably distant from sensitive receptors that no significant visual, noise, odour or other amenity impacts would arise as a result of the development;
- is a suitable topography for a solar farm to operate efficiently for energy production; and
- has a landowner willing to work with the applicant.

3.1 Design Principles

3.1.1 In an EIA, the identification of constraints should continue throughout the design process as more detailed surveys reveal 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 Site.

3.1.2 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 site to avoid or minimise setting effects on heritage assets;
- avoid or minimise impacts on sensitive identified ecological habitats and species;
- minimise impacts in respect to 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.

3.2 Iterative Scheme Design

3.2.1 The initial layout was designed to maximise renewable energy yield. Following the completion of baseline studies, surveys were undertaken, as well as initial consultations with the Council's drainage, ecology and planning officers.

- 3.2.2 The aim was to continue maximising renewable energy yield while avoiding environmental and technical constraints, ensuring no significant adverse environmental effects as well as taking into consideration views of local residents.
- 3.2.3 The developed proposals sought to maintain existing field boundaries, as defined by the drainage ditches and PRowWs that run through the site.
- 3.2.4 The following summarises the design changes that have been made during this iterative process:
- Nine-meter development buffers (i.e. no-build zones) were added at either side of the existing drainage ditches to enable the Internal Drainage Board (IDB) to access and undertake works on the ditches. These buffers also serve to maintain the ditches as habitats for native fauna.
 - Development buffers were added around the overhead electrical lines and underground gas pipelines running through the site.
 - The BESS was relocated to the immediate east of the existing copse of trees, following an optioneering exercise undertaken to determine the most suitable location (the alternative options considered are shown in Figure 4). The proposed location serves a dual purpose of obscuring its view from the west, and maximising separation distances from residential properties, in order to ensure that no noise impacts arise from the operation of the BESS.



Figure 4: Optioneering exercise to determine most suitable BESS location

3.2.5 Following submission of the application, and consultation with statutory and internal consultees, members of the public and the Council's planning officers, a number of further design evolutions were implemented to improve the proposals. These include:

- Revisions to the proposed access arrangements to ensure that construction vehicles and emergency service vehicles can access the site safely; and
- Improvements to the interface between the vehicular access and the PRow.

3.2.6 These design iterations have been made in line with the design principles set out in Section 3.1 and demonstrate that the applicant has continued to improve the proposals through the planning process, as more detailed surveys, as well as information and comments from consultees and members of the public, revealed additional potential constraints to development.