EAST STOUR SOLAR FARM

Supplementary Environmental Information (SEI) Volume 2a - Written Statement

PREPARED ON BEHALF OF

EDF renewables

JANUARY 2024

engena

This page is intentionally blank

PREFACE

This Supplementary Environmental Information (SEI) Written Statement forms the second part of a four volume SEI which provides additional information addressing points raised by consultees subsequent to the submission of the East Stour Solar Farm planning application (Ashford Borough Council reference 22/00668/AS). This information supplements the findings of the Environmental Impact Assessment (EIA), the ES of which accompanied the planning application. The volumes of the complete SEI document are:

Document	Title	Contents
SEI Volume 1	SEI Non-Technical Summary	Summarises the key contents of the SEI for the non-technical reader
SEI Volume 2A	SEI Written Statement	Presents the full SEI text
SEI Volume 2B	SEI Appendices	Presents the appendices referred to in the SEI Written Statement
SEI Volume 3	SEI Figures	Presents updated and additional figures referred to in the SEI Written Statement
SEI Volume 4	Visualisations	Presents additional visualisations referred to within the SEI Written Statement

A complete set of application and SEI documents can be downloaded from the project website, as detailed in the box below.

Printed SEI copies can be purchased at a cost of £200+VAT Digital versions are available either as a download or on CD-ROM free of charge.

To order copies, please contact Engena Limited at:

The Old Stables, Bosmere Hall,
Creeting St Mary, IP6 8LL.

info@engena.co.uk

or download from:

https://www.edf-re.uk/renewables/east-stour

The Developer may also be contacted at:

east.stour@edf-re.uk or 0800 0194 576

This page is intentionally blank

SEI Volume 2A - Written Statement

Contents

This page is intentionally blank

SEI CHAPTER 1 - INTRODUCTION

This page is intentionally blank

EAST STOUR SOLAR FARM SEI

SEI Introduction

1.1 This SEI supports the planning application for the East Stour Solar Farm. The supplementary information addresses comments received during the consultation process together with consideration of any potential cumulative impacts associated with the three neighbouring applications yet to be built and so not in the existing baseline:

- the Pivot Power Battery Energy Storage Site (BESS) (Consented, ABC planning reference PA/2022/2544);
- the Sellindge Grid Stability Facility (GSF) (Consented, ABC planning application PA/2022/2950 - also referred to within that application as a Synchronous Condenser Plant (SCP) with ancillary infrastructure, access, landscaping and other incidental works); and
- the pre-application NSIP Stonestreet Green Solar.

1.2 The SEI LVIA chapter (SEI Chapter 11) has also considered the Otterpool Park Garden Town. Given the separation (~2.5km) and principally residential nature, this development has not been considered in other SEI Chapters.

1.3 The respective locations of the above proposals are identified on SEI **Figure 1.1, SEI Volume 3**.

1.4 The proposal for East Stour Solar Farm was submitted to Ashford Borough Council in May 2022, Application Reference 22/00668/AS. The proposal is for a fixed solar array, associated access tracks, inverter/transformer units, substation cabinets, welfare and storage cabinets/containers, boundary fencing with inward facing CCTV and ancillary infrastructure. In addition, a range of enhancement measures are proposed as part of the proposed development.

1.5 The site is located on land south of the M20, to the west of Sellindge and north-east of Aldington. The location of the site is illustrated in **Figure 1.1** within **Volume 3** of the Environmental Statement.

1.6 The proposal additionally comprises a below-ground cable route from the northern, southern and eastern area substations to a central substation cabinet west of the Sellindge Converter Station. The grid connection will connect from this cabinet under Church Lane to the adjoining National Grid substation. A substation will be shared with the Pivot Power BESS.

1.7 The total solar array would have a capacity of up to 49.9MW. The proposed operational lifetime of the project is 40 years.

1.8 The proposed development is adjacent to the operating Sellindge Solar Farm (10.6 MW).

1.9 For the purposes of the EIA, the ES and this SEI, assessments for impacts of the solar farm have been primarily based upon panel rows with a maximum height of 3.0m, at a tilt of approximately 20^{O} facing south.

1.10 The red line boundary has been amended to exclude areas not required for the purposes of the proposal.

1.11 Additional planting mitigation has been proposed as discussed with the SEI LVIA Chapter (SEI Chapter 11).

1.12 There have been no other alterations to the proposal as submitted. The proposed solar farm site layout with updated red line is shown at **SEI Figure 1.2 and Figure 1.3**, overlaid with aerial photography in **Figure 1.4** and **1.5 of SEI Volume 3** (replacing the corresponding ES figures).

SEI Reading Guide

1.13 This SEI presents information supplementary to the four volumes of the Environmental Statement (ES) which accompanied the application.

1.14 As such, the SEI should be read alongside the ES.

1.15 The SEI follows the same four-volume format and chapter numbering as the ES for ease of reference.

1.16 Where third-party reports or documents referenced within the ES have been updated or new publications issued, this SEI provides an update to the respective ES chapter.

1.17 Where no additional information has been provided to that presented in an ES chapter, the respective SEI chapter identifies this.

1.18 The only alteration to the proposal within this SEI reflects the amendments to the red line boundary and the additional planting proposed as referenced in **Paragraph 1.11**.

Energy Production

1.19 'PV Syst Photovoltaic Software' Version V6.87 was used by the Applicant to predict that the solar farm will have a potential annual yield of approximately 69 600MWh (to 3 Significant Figures (3 S.F.)), this is as presented in the ES.

1.20 Updated figures have subsequently been published regarding electricity consumption in Ashford Borough (DBEIS, 2022) and also regarding Greenhouse Gas Conversion figures (DESNZ, 2023). In terms of household electricity usage this would, using current statistics, be sufficient to offset the equivalent annual energy needs of 17 000 (to 3 S.F.) average Ashford Borough homes' (based on average domestic consumption per household of 4 080kWh (DBEIS, 2022). This is an increase to the 16 900 homes offset calculated in **ES Chapter 1** resulting from reduced domestic electricity consumption in the Borough.

Carbon Offset

1.21 As discussed in the **ES Chapter 7 - Construction, Operation and Decommissioning**, the electricity produced by the East Stour Solar Farm will offset an updated equivalent of 14 300 000 $kgCO_2$ per annum (to 3 S.F.). This is a 3% reduction against the initially reported ES figure, a consequence of falling electricity GHG conversion factors as more renewable energy comes on line year on year.

REFERENCES

Department for Business, Enterprise and Industrial Strategy (DBEIS), 2022, Sub-National Electricity Consumption Statistics, retrieved from: https://www.gov.uk/government/collections/sub-national-electricity-consumption-data [Accessed 01/11/23].

Department for Energy Security and Net Zero (DESNZ), 2023, UK Government GHG Conversion Factors for Company Reporting, HMSO, UK [Accessed 01/11/23].

This page is intentionally blank

SEI CHAPTER 2 - DEVELOPMENT RATIONALE

This page is intentionally blank

INTRODUCTION

2.1 The corresponding ES Chapter 2 sets out the wider international, national, regional and local context within which the East Stour Solar Farm is proposed. The merits of the various forms of renewable energy are also considered, along with the current and future energy generation mix of the UK.

2.2 The imperative need to reduce the carbon dependence of the economy is also discussed against the various alternative energy solutions.

2.3 A number of the source documents have been updated since submission, this SEI chapter provides relevant updates.

GLOBAL CLIMATE CHANGE

Working Group 2: Impacts, Adaption and Vulnerability

2.4 The ES Chapter reviews the findings of the The Intergovernmental Panel on Climate Change (IPCC) Working Group 2. Examples are given of changing weather patterns in the UK.

2.5 By way of recent examples of extreme weather events, 2022 saw significant flooding throughout the year in various parts of the UK, with several named storms hitting during February alone. During March 2021 to March 2022 the MetOffice issued a total of ten yellow flood warnings and six amber warnings.

Climate Change in the UK

2.6 An update has been published to the annual UK weather and climate report entitled '*State of the UK Climate*' is produced every July by the Met Office and published by the Royal Meteorological Society. The latest, published in July 2023 (Kendon, et al., 2023), found that:

- *'The UK's climate continues to change. Recent decades have been warmer, wetter and sunnier than the 20th century.*
- *The observations show that in the UK extremes of temperature are changing much faster than the average temperature.*
- *The UK has warmed at a broadly consistent but slightly higher rate than the observed change in global mean temperature.*
- *The UK's record warm year of 2022 and unprecedented July heatwave were both made more likely by climate change'.*

2.7 In addition:

- *'2022 was the warmest year in the UK series from 1884, 0.9°C above*

the 1991–2020 average. It was the first year to record a UK annual mean temperature above 10°C;

- *40°C was recorded in the UK for the first time during a heatwave which exceeded previous records by a large margin;*
- *Winter, spring, summer and autumn 2022 were all ranked in the top 10 warmest seasons for the UK in series from 1884 (winter from 1885);*
- *All the top-10 warmest years for the UK in the series from 1884 have occurred in the 21st century;*
- *The most recent decade (2013–2022) has been on average 0.3°C warmer than the 1991–2020 average and 1.1°C warmer than 1961–1990. This is the warmest 10-year period in both the UK series from 1884 and CET series from 1659;*
- *Half of the years, more than one in three of the constituent seasons, and almost one in four of the constituent months within the most recent decade (2013–2022) have been within the top 10 warmest in the UK series from 1884 (winter from 1885);*
- *Heating and cooling degree days (CDD) in 2022 were second-lowest and third-highest in series from 1960. Growing degree days (GDD) were the highest in the series;*
- *Five of the 10 wettest years for the UK in a series from 1836 have occurred in the 21st century;*
- *The most recent decade (2013–2022) has been on average as wet as 1991–2020 (i.e. anomaly 0%) and 8% wetter than 1961–1990 for the UK overall;*
- *In recent years, widespread and substantial snow events have occurred in 2021, 2018, 2013, 2010 and 2009, but their number and severity have generally declined since the 1960s;*
- *The most recent decade (2013–2022) has had for the UK on average 3% more hours of bright sunshine than the 1991–2020 average and 9% more than 1961–1990. 2013–2022 is the sunniest 10-year period in the UK series;*

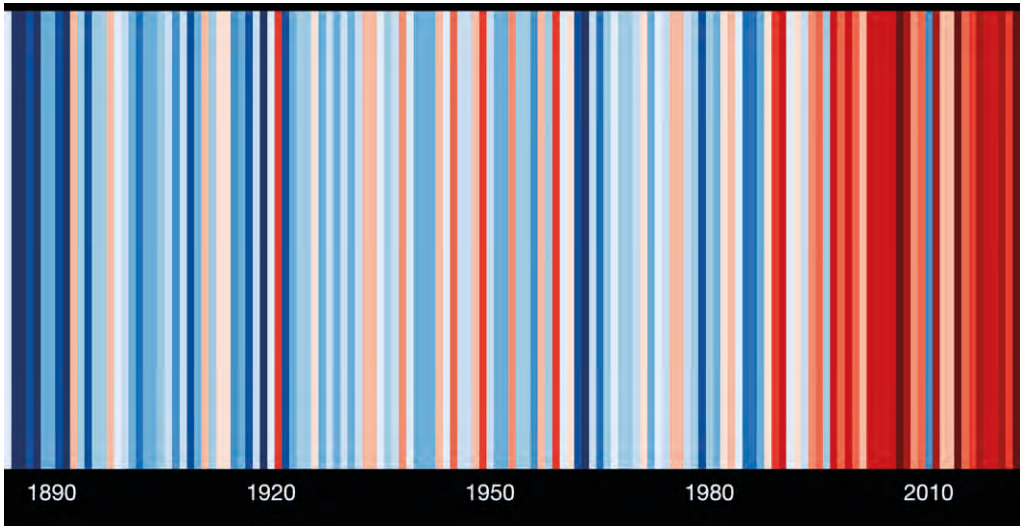


Plate 2.1 - *UK Annual Temperature (Hawkins, 2022)*

- *For the most recent decade (2013–2022) UK winters have been 3% sunnier than 1991–2020 and 14% sunnier than 1961–1990. UK springs have been 6%/16% sunnier'.*

2.8 **Plate 2.1 on page 16**, produced by the University of Reading (Hawkins, 2022) and using UK Met Office Data illustrates the average annual UK temperature since 1884. Blues represent cool average temperatures, and reds represent warm average temperatures. The increase in average annual temperature is abundantly clear.

CLIMATE CHANGE POLICY

International

COP27 Summit

2.9 COP27 met in Sharm El-Sheikh in November 2022. The goals and vision were stated to be:

'Inclusive, rules based and ambitious, substantive outcomes, commensurate with the challenge based on science and guided by principles building on agreements, decisions, pledges and commitments, from RIO 1992 to Glasgow 2021.

We seek to accelerate global climate action through emissions reduction, scaled-up adaptation efforts and enhanced flows of appropriate finance. We recognize that 'just transition' remains a priority for developing countries worldwide.'

2.10 COP28 is due to meet in Dubai, UAE in December 2028

The UK Response

2.11 On 7th April 2022 the UK Government published its latest policy paper on British Energy Security Strategy. The document sets out the steps taken and still required to 'accelerate our progress towards net zero, which is fundamental to energy security'.

2.12 Powering Up Britain (including the Energy Security Plan) was published by Government 30th March 2023 (HMSO, 2023). This latest plan seeks to ensure energy security whilst meeting net zero commitments. The document reiterates the Government's ambition to 70GW of ground and roof mounted solar by 2035, recognising this would increase the current installed solar by five times.

REFERENCES

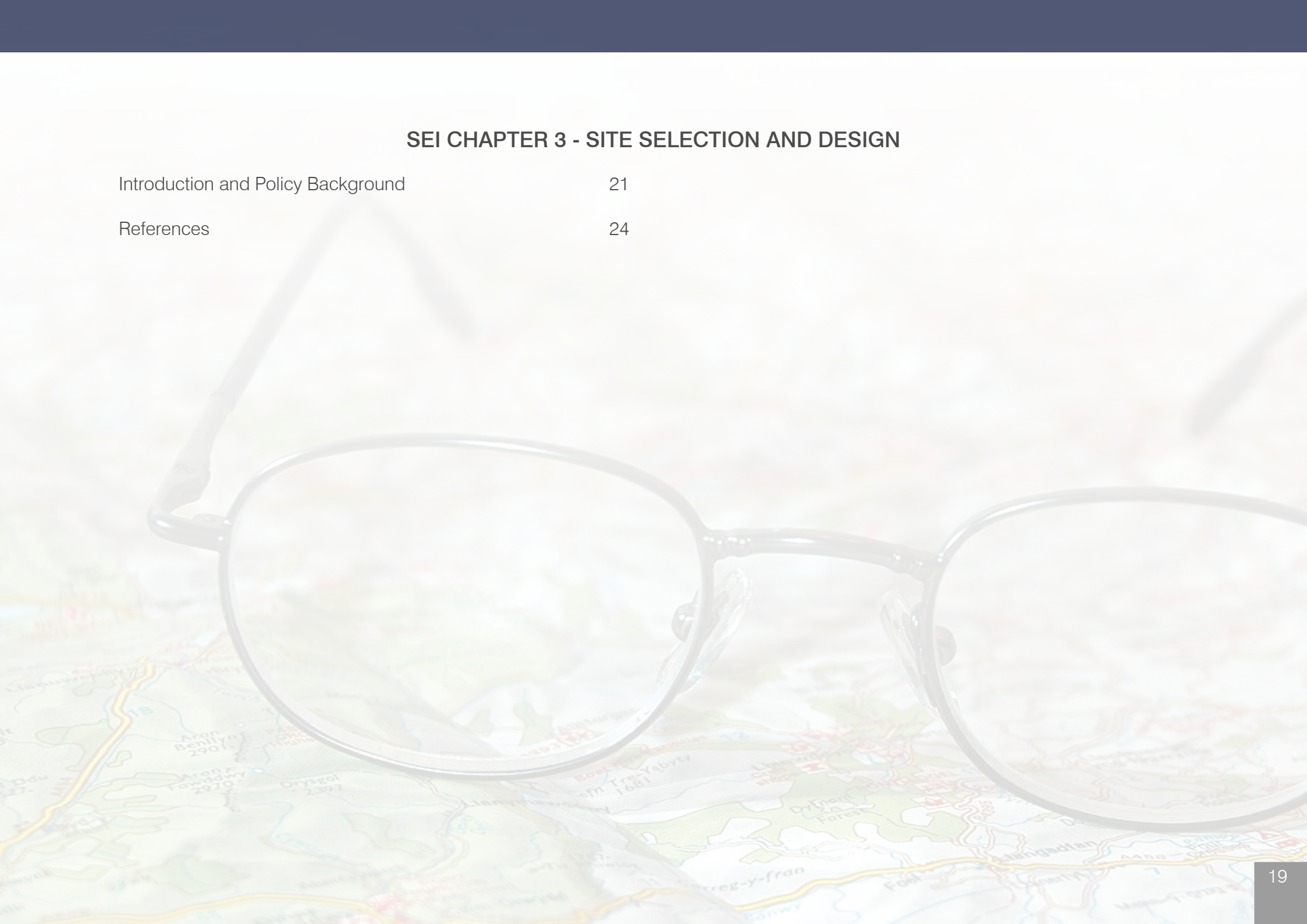
Hawkins, 2022, Show Your Stripes, University of Reading, UK retrieved from https://showyourstripes.info,

HMSO, 2023, Powering Up Britain, HMSO, UK

HM Government, 2022, British Energy Security Strategy, retrieved from https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy [accessed 01/11/2023]

Kendon, McCarthy, Jevrejeva, Matthews, Sparks, Garforth, Met Office, 2023 State of the UK Climate 2022, Royal Meteorological Society, UK

SEI CHAPTER 3 - SITE SELECTION AND DESIGN



This page is intentionally blank

INTRODUCTION AND POLICY BACKGROUND

3.1 The ES Chapter 3 discussed the site selection process undertaken to identify the East Stour Solar Farm location, and the evolution of the site layout throughout the EIA process.

3.2 The site selection process and layout evolution has been expanded upon within the SEI Chapter 11 - LVIA.

3.3 The ES Chapter 3 also set out an outline of the background policy relevant to site selection and design.

3.4 National Policy Statements for energy infrastructure were updated in November 2023 (Department for Energy Security and Net Zero (DESNZ), 2023) with updates as discussed below. The remainder of the ES Chapter 3 is extant.

National Policy Statements for Renewable Energy Infrastructure November 2023 Update

4.5 In addition to the NPPF and NPPG, the National Policy Statements are also a material consideration in determining energy infrastructure projects under the Town and Country Planning Act 1990 (as amended). These documents include the Overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for Renewable Energy (EN-3). Both Statements were updated in November 2023 (Department for Energy Security and Net Zero (DESNZ), 2023).

4.6 EN-1 sets out general consideration in the determination of energy infrastructure applications. Whilst the need and role of solar is specifically referenced, there are no specific assessment criteria detailed.

4.7 EN-3 lists the following factors that it considers will influence an application in the selection of a solar site:

- Irradiance and Site Topography: '*Irradiance will be a key consideration for the applicant in identifying a potential site as the amount of electricity generated on site is directly affected by irradiance levels. Irradiance of a site will in turn be affected by surrounding topography, with an uncovered or exposed site of good elevation and favourable south-facing aspect more likely to increase year-round irradiance levels. This in turn affects the carbon emission savings and the commercial viability of the site.*';
- *Network Connection: 'Many solar farms are connected into the local distribution network. The capacity of the local grid network to accept the likely output from a proposed solar farm is critical to the technical and commercial feasibility of a development proposal'.*

- Proximity of a site to dwellings: with consideration to visual amenity and glint and glare;
- *Agriculture land classification and land type: 'While land type should not be a predominating factor in determining the suitability of the site location applicants should, where possible, utilise suitable previously developed land, brownfield land, contaminated land and industrial land. Where the proposed use of any agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land avoiding the use of "Best and Most Versatile" agricultural land where possible. 'Best and Most Versatile agricultural land is defined as land in grades 1, 2 and 3a of the Agricultural Land Classification.*

  Whilst the development of ground mounted solar arrays is not prohibited on Best and Most Versatile agricultural land , or sites designated for their natural beauty, or recognised for ecological or archaeological importance, the impacts of such are expected to be considered'.
- Accessibility: '*Applicants will need to consider the suitability of the access routes to the proposed site for both the construction and operation of the solar farm with the former likely to raise more issues. Given that potential solar farm sites are largely in rural areas, access for the delivery of solar arrays and associated infrastructure during construction can be a significant consideration for solar farm siting.*'
- *Public Rights of Way: 'Applicants are encouraged to design the layout and appearance of the site to ensure continued recreational use of public rights of way, where possible during construction, and in particular during operation of the site. Applicants are encouraged where possible to minimise the visual impacts of the development for those using existing public rights of way, considering the impacts this may have on any other visual amenities in the surrounding landscape;*
- *Security and lighting: 'Security of the site is a key consideration for developers. Applicants may wish to consider not only the availability of natural defences such as steep gradients, hedging and rivers but also perimeter security measures such as fencing, electronic security, CCTV and lighting, with the measures proposed on a site-specific basis. Applicants should assess the visual impact of these security measures, as well as the impacts on local residents, including for example issues relating to intrusion from CCTV and light pollution in the vicinity of the site. Applicants should consider the need to minimise the impact on the landscape and the visual impact of security measures.'*
- Capacity of a site: '*for the purposes of Section 15 of the Planning Act 2008, the maximum combined capacity of the installed inverters (measured in alternating current (AC)) should be used for the purposes of determining solar site capacity. The installed generating capacity of a solar farm will decline over time in correlation with the reduction in panel array efficiency. There is a range of sources of degradation that developers need to consider when deciding on a solar panel technology to be used.*

Applicants may account for this by overplanting solar panel arrays. AC installed export capacity should not be seen as an appropriate tool to constrain the impacts of a solar farm. Applicants should use other measurements, such as panel size, total area and percentage of ground cover to set the maximum extent of development when determining the planning impacts of an application.';

- *Layout design and appearance: 'applicants will consider several factors when considering the design and layout of sites, including, proximity to available grid capacity to accommodate the scale of generation, orientation, topography, previous land – use and ability to mitigate environmental impacts and flood risk.'*
- *Project lifetimes: 'Applicants should consider the design life of solar panel efficiency over time when determining the period for which consent is required. An upper limit of 40 years is typical, although applicants may seek consent without a time-period or for differing time-periods of operation. Time limited consent, where granted, is described as temporary because there is a finite period for which it exists, after which the project would cease to have consent and therefore must seek to extend the period of consent or be decommissioned and removed.*
- *Decommissioning: 'Solar panels can be decommissioned relatively easily and cheaply. The nature and extent of decommissioning of a site can vary. Generally, it is expected that the panel arrays and mounting structures will be decommissioned, and underground cabling dug out to ensure that prior use of the site can continue. Applicants should set out what would be decommissioned and removed from the site at the end of the operational life of the generating station, considering instances where it may be less harmful for the ecology of the site to keep or retain certain types of infrastructure, for example underground cabling, and where there may be socio-economic benefits in retaining site infrastructure after the operational life, such as retaining pathways through the site or a site substation.'*
- *Flexibility in the project details; 'In many cases, not all aspects of the proposal may have been settled in precise detail at the point of application. Such aspects may include: the type, number and dimensions of the panels; layout and spacing; the type of inverter or transformer; and whether storage will be installed (with the option to install further panels as a substitute). Applicants should set out a range of options based on different panel numbers, types and layout, with and without storage.*

4.8 Through an iterative considered approach to site identification and site design that inherently mitigates potential impacts wherever possible, the Applicant has ensured the Proposal is consistent with the NPSs, EN-1 and EN-3, in their draft updates and subsequently published versions.

REFERENCES

Department for Energy Security & Net Zero (DESNZ), 2023, National Policy Statement for Renewable Energy Infrastructure (EN-3), HMSO, UK.

SEI CHAPTER 4 - EXISTING CONDITIONS

This page is intentionally blank

INTRODUCTION

4.1 This chapter of the ES set out the existing physical environment of the development site boundary and its setting in the wider context, together with a summary of the solar energy developments in the area.

4.2 The baseline is considered to have remained the same except for the consenting of two energy projects close to the northern parcel of land near to the Converter Station Substation and a pre-application NSIP proposal for a larger solar scheme to the west and south-west:

- the Pivot Power Battery Energy Storage Site (BESS) (consented, ABC planning reference PA/2022/2544);
- the Sellindge Grid Stability Facility (consented ABC planning application PA/2022/2950); and
- the pre-application NSIP Stonestreet Green Solar.

4.3 The Pivot Power BESS scheme was considered in terms of potential cumulative impacts in the submitted ES, although an earlier design iteration to that consented. Whilst there have been amendments to the arrangement of the plant within the scheme, none of the modifications change the existing assessments in any way.

4.4 The existing operating Sellinge Solar Farm has been considered in the existing baseline.

4.5 The three schemes have been considered within the respective chapters of this SEI.

PAST, PRESENT AND FUTURE LAND USE

Agricultural Land Classification

Agricultural Land Survey Introduction and Policy Guidance

4.6 An Agricultural Land Classification (ALC) Assessment was prepared by Daniel Baird Soil Consultancy Ltd, as presented in Chapter 4 of the ES. It provides an assessment of the quality and versatility of agricultural land at the proposed development site.

4.7 When surveyed in August 2021 agricultural land at the site was in a mix of arable cultivation and pasture grazed by sheep. The land use continues unchanged.

4.8 In November 2023 updates were published to the National Policy Statements for Energy (EN1) and Renewable Energy (EN3). EN3 specifically includes an update with respect to ALC (from paragraph 2.10.29):

'While land type should not be a predominating factor in determining the

suitability of the site location applicants should, where possible, utilise suitable previously developed land, brownfield land, contaminated land and industrial land. Where the proposed use of any agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land avoiding the use of "Best and Most Versatile" agricultural land where possible. 'Best and Most Versatile agricultural land is defined as land in grades 1, 2 and 3a of the Agricultural Land Classification.'

Whilst the development of ground mounted solar arrays is not prohibited on Best and Most Versatile agricultural land , or sites designated for their natural beauty, or recognised for ecological or archaeological importance, the impacts of such are expected to be considered[...].

It is recognised that at this scale, it is likely that applicants' developments will use some agricultural land. Applicants should explain their choice of site, noting the preference for development to be on suitable brownfield, industrial and low and medium grade agricultural land.

Where sited on agricultural land, consideration may be given as to whether the proposal allows for continued agricultural use and/or can be co-located with other functions (for example, onshore wind generation, storage, hydrogen electrolysers) to maximise the efficiency of land use.

The Agricultural Land Classification (ALC) is the only approved system for grading agricultural quality in England and Wales and, if necessary, field surveys should be used to establish the ALC grades in accordance with the current, or any successor to it, grading criteria and identify the soil types to inform soil management at the construction, operation, and decommissioning phases in line with the Defra Construction Code.

Applicants are encouraged to develop and implement a Soil Resources and Management Plan which could help to use and manage soils sustainably and minimise adverse impacts on soil health and potential land contamination. This should be in line with the ambition set out in the Environmental Improvement Plan to bring at least 40% of England's agricultural soils into sustainable management by 2028 and increase this up to 60% by 2030.

4.9 The detailed ALC survey of the site as reported in the ES Chapter 4 found agricultural land in ALC Grades 3a and 3b with area estimates given in **Table 4.1**.

Table 4.1 - *ALC Grade Distribution within Surveyed Area*

ALC Grade	Area (ha)	%
3a	14.9	14.6
3b	87.0	85.4
Total	101.9	100.0

4.10 As such, the area progressed for solar development is thus predominantly not BMV land. Designated sites and areas identified through geophysical scans of potentially greater archaeological activity have been avoided (ES Chapter 3 and Chapter 12). Ecological considerations are fully assessed in ES Chapter 10.

4.11 As stated in the ES Chapter 4, for the East Stour Solar Farm proposal, the developer intends to manage the grass through grazing with livestock, as per the practice at the existing adjoining solar farm. This livestock grazing will maintain the land in agricultural production while the solar PV generation is in place.

4.12 Therefore, the development proposed does not result in loss of agricultural land resource and agricultural production, though restricted, can continue through the duration of the solar PV development.

4.13 EDF-R consider management of the land a principal responsibility during their occupation of site. Soils management is an important component to these responsibilities and a Soils Management Plan will be agreed with ABC and can be controlled by planning condition.

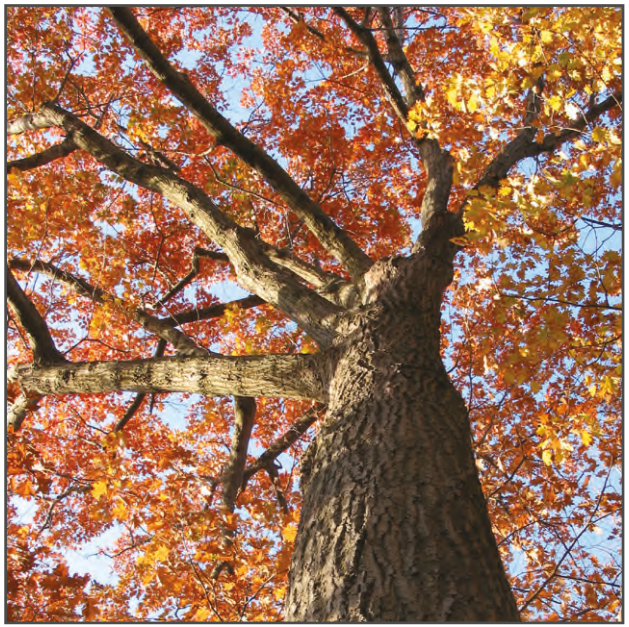
4.14 Through an iterative considered approach to site identification and site design that inherently mitigates potential impacts wherever possible, the Applicant has ensured the Proposal is consistent with the NPSs, EN-1 and EN-3, in their draft updates and subsequently published versions.

REFERENCES

Department for Energy Security & Net Zero (DESNZ), 2023, National Policy Statement for Renewable Energy Infrastructure (EN-3), HMSO, UK.

SEI CHAPTER 5 - ENVIRONMENTAL IMPACT ASSESSMENT

This page is intentionally blank



THE ENVIRONMENTAL IMPACT ASSESSMENT

SEI

5.1 As described in SEI Chapter 1 - Introduction, this SEI supports the planning application for the East Stour Solar Farm. The supplementary information addresses comments received during the consultation process (**SEI Appendix 1.1**) together with consideration of any potential cumulative impacts associated with the three neighbouring applications yet to be built and so not in the existing baseline:

- the Pivot Power Battery Energy Storage Site (BESS) (Consented, ABC planning reference PA/2022/2544);
- the Sellindge Grid Stability Facility (GSF) (Consented, ABC planning application PA/2022/2950 - also referred to within that application as the Synchronous Condenser Plant (SCP) with ancillary infrastructure, access, landscaping and other incidental works)); and
- the pre-application NSIP Stonestreet Green Solar.

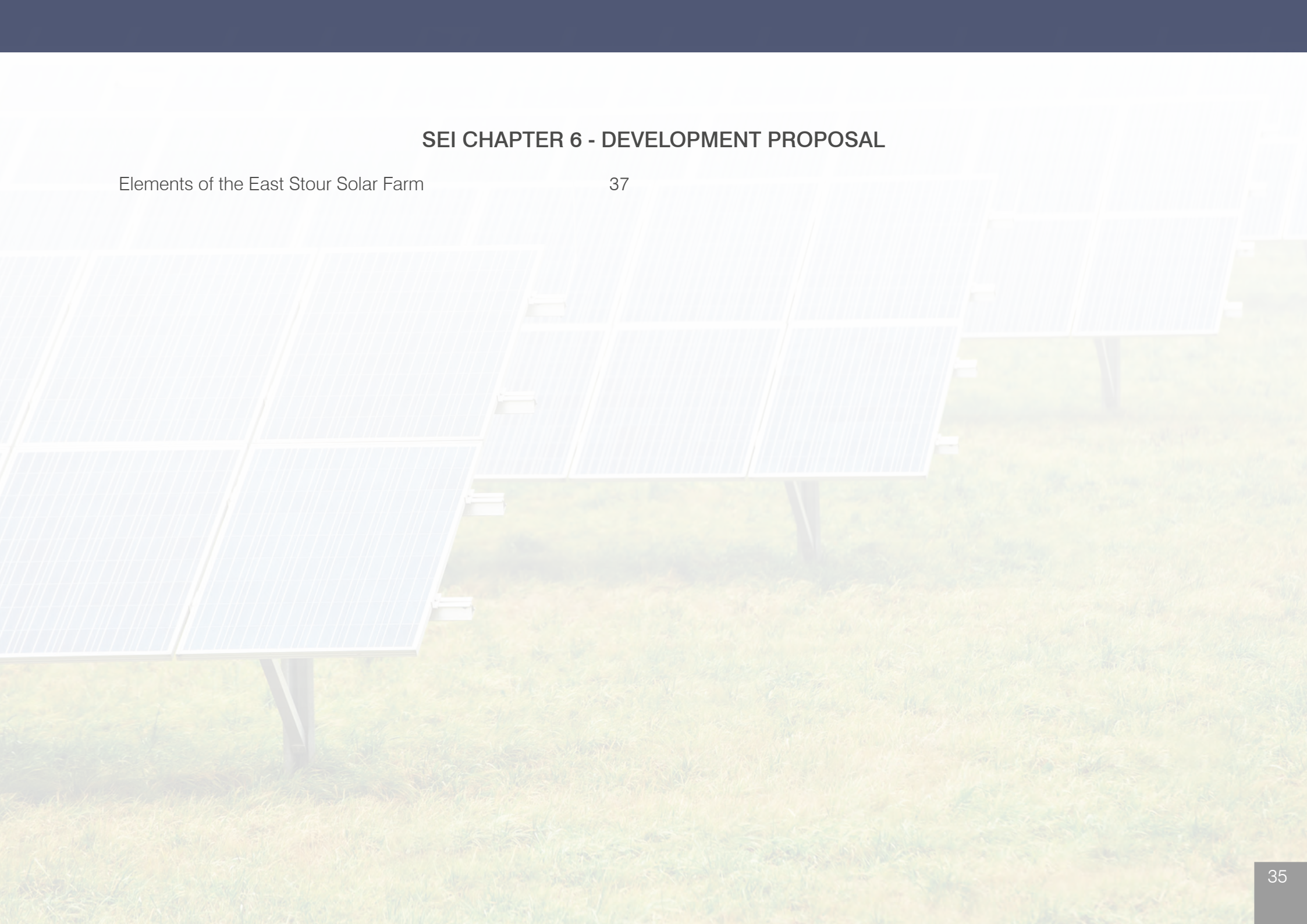
5.2 The SEI LVIA chapter (SEI Chapter 11) has also considered the Otterpool Park Garden Town. Given the separation (~2.5km) and principally residential nature, this development has not been considered in other SEI Chapters.

5.3 The respective locations of the above proposals are identified on **SEI Figure 1.1, SEI Volume 3**.

5.4 The assessments as reported within the volumes of the ES stand, supplemented by the additional information provided by this SEI.

This page is intentionally blank

SEI CHAPTER 6 - DEVELOPMENT PROPOSAL



This page is intentionally blank

ELEMENTS OF THE EAST STOUR SOLAR FARM

6.1 The elements of the East Stour Solar Farm are as described in the corresponding chapter of the ES.

6.2 No amendments have been made during the planning process save the adjustment of the application red line boundary to exclude areas not required for the purposes of the proposal (**SEI Figure 1.1, SEI Volume 3**) and the updating of the planting and mitigation plan provided as **SEI Figure 11.8a**, replacing the corresponding Figure in the ES Volume 3.

This page is intentionally blank

SEI CHAPTER 7 - CONSTRUCTION, OPERATION AND DECOMMISSIONING

This page is intentionally blank

INTRODUCTION

7.1 This chapter of the ES describes the construction, operation and decommissioning phases of the proposed East Stour Solar Farm.

7.2 Potential impacts associated with the respective phases of the development are addressed individually within the respective ES assessment and SEI chapters.

7.3 No amendments to the site layout or components to the solar farm have been made subsequent to submission.

7.4 Updated figures for ABC domestic electricity consumption and government GHG Conversion Factors have been published and the related calculations have been updated within this SEI chapter, as summarised in **SEI Chapter 1**.

Predicted Electricity Generation

7.5 As stated at **SEI Chapter 1 - Introduction** it is predicted that the solar farm at this site would have a potential annual yield of approximately 69 600MWh (as reported in the ES).

7.6 In terms of household electricity usage this would be sufficient to offset the equivalent annual energy needs of 17 000 (to 3 S.F.) average Ashford Borough homes, using published consumption data (DBEIS, 2022).

Emissions

7.7 It has been predicted that the proposed solar farm will generate an annual average of approximately 69 600 000kWh (net) of electricity (to 3 S.F.).

7.8 The generation of this electricity will offset electricity generated from other non-renewable sources. UK Government Greenhouse Gas Conversion Factors (DESNZ, 2023) for company reporting of annual carbon emissions include the average carbon emissions for UK electricity generation.

7.9 On this basis the electricity produced by the East Stour Solar Farm will offset approximately **14 300 000kgCO_2/ annum or 14 300 tonnes CO_2 per annum** (to 3 S.F.). This is less than report in the ES as more renewables have been installed since submission and the UK's reliance on fossil fueled electricity generation has been accordingly be reduced.

7.10 As stated in the ES, this project therefore provides a material contribution to the net zero target by 2050 at both National (through the Climate Change Act) and Local level. Whilst Ashford Borough elected not to declare a 'Climate Emergency', the Council has elected to commit to carbon neutrality by 2030.

REFERENCES

Department for Business, Enterprise and Industrial Strategy (DBEIS), 2022, Sub-National Electricity Consumption Statistics, retrieved from: https://www.gov.uk/government/collections/sub-national-electricity-consumption-data [Accessed 01/11/23].

Department for Energy Security and Net Zero (DESNZ), 2023, UK Government GHG Conversion Factors for Company Reporting, HMSO, UK [Accessed 01/11/23].

SEI CHAPTER 8 - TRAFFIC AND ACCESS

This page is intentionally blank

INTRODUCTION

8.1 This chapter of the ES considers the impacts of the East Stour Solar Farm on the local roads infrastructure, particularly during the construction process.

8.2 Subsequent to the submission of the planning application, details of the Pivot Power BESS have been available as well as those associated with the adjoining consented Synchronous Condenser and the nearby the forthcoming Stonestreet Green Solar DCO application.

8.3 The assessment is considered extant except for cumulative considerations detailed below.

CUMULATIVE ASSESSMENT

8.4 It is not anticipated that the Stonestreet Green Solar proposal will use Church Lane as an access route during construction and so no cumulative impacts have been considered in relation to this project.

8.5 There is the possibility for the construction periods of the Pivot Power BESS and/or the adjoining SWECO Synchronous Condenser site to coincide with the construction of the East Stour Solar scheme. As such there is potential for cumulative impacts along the northern section of Church Lane between the A20 and the railway bridge.

8.6 ES **Chapter 8** identifies a potential maximum traffic flow of 12 additional HGV movements per day (occurring in months 3 and 5 of the 9-month construction period of the East Stour Proposal). This traffic will pass through the northern section of Church Lane between the A20 and the railway line to the south along the length of road also used to access the Conversion Station Substation and HS1 railway substation.

8.7 The Pivot Power application in their Design and Access Statement (paragraph 4.2.10) anticipate daily average construction movements of three HGV two-way movements.

8.8 The SWECO Synchronous Generator application suggests in their Framework Construction Traffic Management Plan document (March 2023), a maximum peak movements of 25 concrete deliveries in one day.

8.9 Should all three projects experience peak traffic flows during the same period, HGV construction traffic movements along the stretch of Church Lane between the A20 and railway line could total 40 HGV movements. Whilst no baseline traffic counts have been provided by any of the developers along this stretch of Church Lane, it is anticipated that the increase in HGV traffic flows are likely to be 'significant' when considered against existing flows (assuming a 30% increase threshold

of 'significance'). However, this stretch of Church Lane has been built to accommodate HGV deliveries to the Conversion Substation as well as the HS1 substation and the carriageway is sufficiently wide as to accommodate HGVs passing.

AVOIDANCE AND MITIGATION

8.10 As discussed within the corresponding ES Chapter, a key impact avoidance principal during construction and decommissioning considers deliveries to be restricted, wherever possible, to off-peak weekdays to reduce impacts on local road users. Off-peak is considered to be between 09:00 and 15:00. The same restriction has been stated within the Pivot Power BESS and Sellindge GSF applications.

8.11 To avoid construction traffic travelling through the nearby villages, all construction vehicles will be required to use the access route identified from the A20 and HGVs will be required to approach from the identified route from Junction 10a of the M20. No construction traffic be it HGV, LGV or PSV will be permitted south of the Church Lane highway crossing. The same restriction has been stated within the Pivot Power BESS and Sellindge GSF applications.

8.12 As such, all proposed avoidance and mitigation measures remain as proposed within the ES.

RESIDUAL IMPACTS

8.13 Cumulative construction traffic movements along Church Lane to the site entrances of the SWECO Synchronous Condenser and the Pivot Power BESS (between the A20 and the railway line over Church Lane), are likely, should all proceed at the same time, to be more than 30% of the average daily HGV total vehicular movements at these locations, and so assessed as potentially significant.

8.14 Measures are proposed for the construction period (and similarly for decommissioning) to mitigate potential impacts and disruption to local traffic as far as possible. These impacts are, however, likely to remain significant although limited to Church Lane. These impacts are short lived and can be managed through Construction Traffic Management Plans, controlled through Planning Condition.

SEI CHAPTER 9 - GEOLOGY, HYDROLOGY & HYDROGEOLOGY

This page is intentionally blank

INTRODUCTION

9.1 Following on from the Environmental Statement chapter on Geology, Hydrology and Hydrogeology prepared for the East Stour Solar Farm Site1 (22/00668/AS), one further application has been subsequently consented in the locality of this scheme, as well as details being published for a pre-application NSIP solar scheme. These are required for inclusion within the cumulative impact assessment for the site (this is in addition to the BESS scheme assessed in the previous report). These sites are shown in **Plate 9.1**.

9.2 These include the Sellindge GSF (also referred to as a condenser) (PA/2022/2950) to the north east of the site and a further solar scheme (Stonestreet Green Solar) to the west of the site which is a pre-application NSIP scheme.

9.3 The GSF will connect to an existing substation further to the east and includes areas of new hardstanding, to accommodate the condenser, associated plant and equipment. This site has now received planning consent under the Town and Country Planning Act, along with the BESS scheme.

9.4 Stonestreet Green Solar comprises the construction of a renewable energy generating project on approximately 189 hectares of land located to the south and west of East Stour solar farm. This will involve solar arrays and onsite energy storage, alongside associated infrastructure and underground cable connection.

9.5 It is noted in terms of the hydrological environment (and thus a cause for these applications to be assessed collectively), that all of the sites, at least in part, drain to the East Stour River.

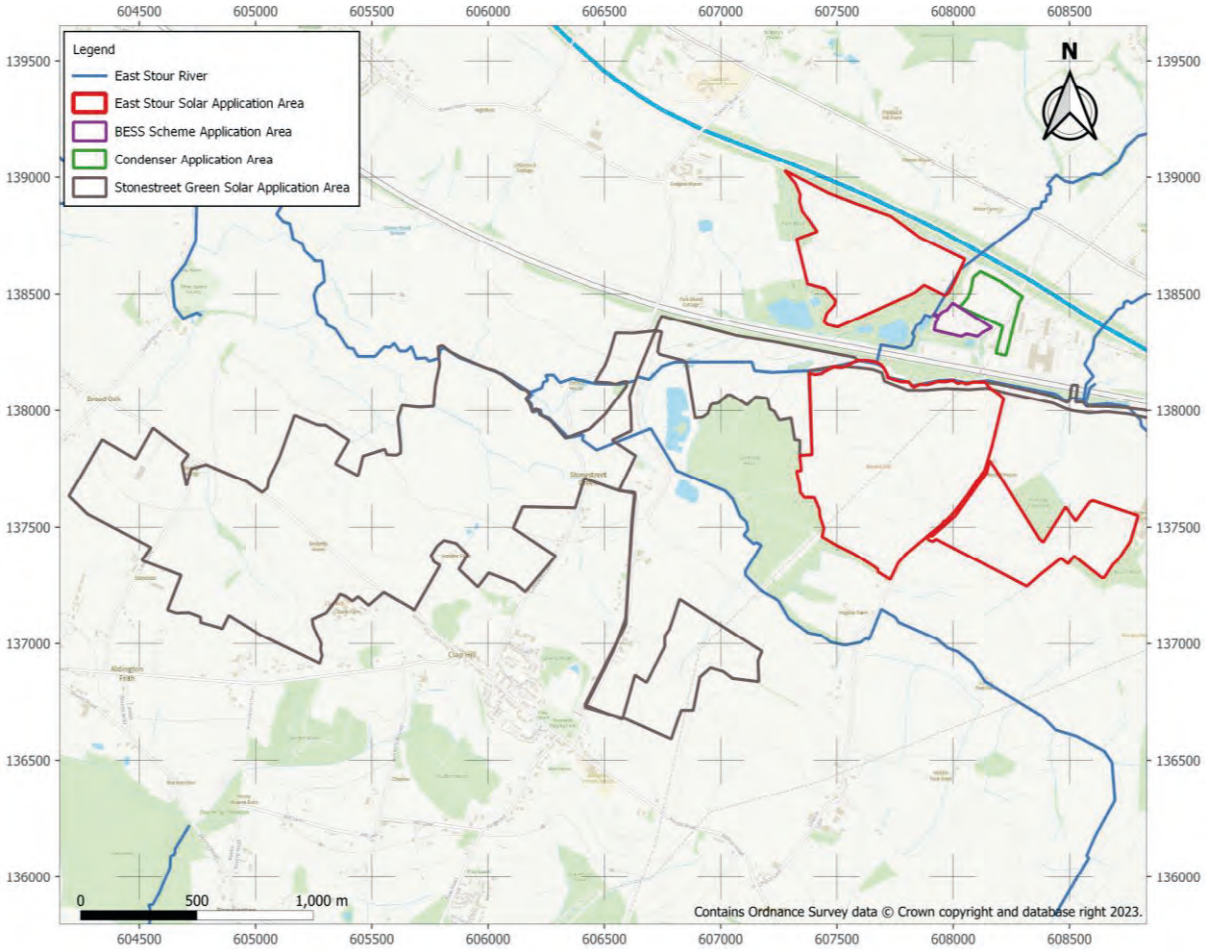


Plate 9.1 - *Cumulative impact assessment sites, including the BESS area*

CUMULATIVE IMPACT ASSESSMENT

Food risk

9.6 A surface water drainage design and FRA has been provided for the condenser application (PA/2022/2950), which shows that drainage is to be discharged from the site, to a tributary of the East Stour River to which the solar site naturally drains. In-line with Kent County Council guidance for new developments, runoff rates are to be constrained here to 2l/s, which will improve upon current greenfield run-off rates for extreme rainfall events.

9.7 A Preliminary Environmental Information Report (PEIR) was produced for the Stonestreet Green Solar site in June 2023. This includes a Chapter 9 relating to the water environment. This includes a preliminary flood risk assessment and flood risk strategy and proposals for further modelling of impacts and agreements with the Environment Agency to ensure no significant impact on flood risk as part of the

DCO application. An outline drainage strategy was not included with the PEIR, this is being developed as part of the DCO application and will include a series of swales, dry retention basins and channels to control surface water run-off rates. There is likely to be some increase to impermeable area within the site, associated mainly with the onsite energy storage, however assuming this is accounted for, and that site drainage is designed to appropriate standards (in-line with Kent CC guidance), it is not expected that the site will significantly increase runoff to the East Stour River, either during construction or operation. The PEIR concludes that there will be no significant adverse cumulative impacts due to the Stonestreet Green and East Stour solar sites.

9.8 For the East Stour solar farm application, upon the provision of unconnected swales and no significant hardstanding areas within the development, as per the conclusions of the ES, no significant increase in runoff is expected to the East Stour tributary.

9.9 In summary, it is expected that there will be adequate surface water management plans in place during construction for these application sites, to attenuate and manage surface water runoff such that there is no increase in runoff to the East Stour tributary from any of the sites. Thus, even if construction occurs simultaneously provided appropriate SuDS measures are implemented in a timely manner there will be no cumulative detrimental effects to flood risk.

9.10 Furthermore, according to the design statements and expected embedded design measures at the sites, discharge to the East Stour River should be reduced for higher order events. Thus there is not expected to be any significant cumulative effect from these sites to increase flood risk during operation either.

Water quality

9.11 During operation of the GSF site, water quality has been considered within the drainage design, to adequately treat runoff, according to the specific hazard indices of structures and processes within the development. This includes use of two attenuation basins, which are shown to provide mitigation to any pollutants which may be entrained in runoff from the site.

9.12 For the Stonestreet Green solar site, the PEIR commits to inclusion of embedded mitigation measures (such as pollution prevention and SuDS), within design, according to standard best practice. This will be carried out so that adverse affects, will be reduced, offset or avoided.

9.13 No water quality impacts are expected during operation of the East Stour solar farm site, with swales used to capture and treat any excess runoff from the panelling (which itself if expected to be low risk).

9.14 If construction of the proposed GSF facility and Stonestreet Green Solar, take place at the same time as the proposed East Stour Solar Farm site; there could be significantly increased construction activity in the area, which could mobilise sediment and increase the risk of pollution to watercourses and groundwater. Similarly, there would be an increased risk of spillage of construction materials/fuels.

9.15 The proposed GSF, will involve foundation work for hardstanding areas and the construction of an internal road network. It is expected that a surface water management plan

will be in place during construction to ensure there are no adverse significant effects to water quality.

9.16 On the whole, the solar sites generally involve low level and unintrusive construction activities, with piling activities anticipated for solar frames, rather than large amounts of earthworks. The Stonestreet Solar site includes an underground cable route within the proposals, which is likely to involve a moderate amount of soil disturbance through trenching. It is assumed however that adequate mitigation is provided during construction to stabilise and store excavated earth, to prevent any erosion of material to the East Stour River.

9.17 During construction and operation, it is concluded that each development would only have a negligible effect in terms of changes in water quality and as such, there is not likely to be any significant cumulative effect.

CONCLUSION

9.18 The potential impacts for each or the two additional sites have been assessed in turn, along with the previous assessment of the BESS site, according to their likely impacts upon water quality and flood risk. It is concluded that there is no significant cumulative effect posed to local hydrology or hydrogeology.

SEI CHAPTER 10 - ECOLOGY