



# Grove Farm Solar, Bentley

## Planning, Design and Access Statement

Prepared for



Green Switch Capital Limited

November 2023  
3223-01-PDAS-01



# Document Control

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## **1.0 INTRODUCTION AND BACKGROUND**

### **1.1 Introduction**

1.1.1 This Planning & Design and Access Statement (PDAS) is being submitted in support of a planning application made by Green Switch Capital Limited (referred to hereafter as 'the Applicant') to Babergh District Council for the construction and operation of a photovoltaic solar array, associated infrastructure and landscaping (hereafter referred to as 'the Proposed Development') on land at Grove Farm, Bentley (hereafter referred to as 'the Site'). The location of the Proposed Development is illustrated on Planning Drawing 3223-01-01.

1.1.2 The Proposed Development was subject to an Environmental Impact Assessment (EIA) screening request in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations) and was determined to not require EIA.

1.1.3 This introduction to the PDAS provides the general background to the Proposed Development and details of the Applicant. The PDAS also sets out a description of the Site, its surroundings, and the Proposed Development. This is followed by the need for the Proposed Development. Finally, relevant planning policy and material considerations are discussed and conclusions in respect of the acceptability of the Proposed Development are drawn based on the planning balance.

1.1.4 The Planning Statement is subdivided into a number of Sections namely:

- i) Section 1: Introduction, Background and Scope of Application
- ii) Section 2: Site, Surroundings and Context
- iii) Section 3: Description of Proposed Development
- iv) Section 4: The Need for the Development
- v) Section 5: Planning Policy Context and Appraisal
- vi) Section 6: Summary and Conclusions

1.1.5 The PDAS was compiled and coordinated by AXIS planning and environmental consultancy. A team of specialist consultants have provided expert assessment in respect of the following technical appendices and appraisals:

- i) AXIS – Planning;
- ii) AXIS – Landscape and Visual Impact Assessment;



- iii) AXIS – Transport and Traffic;
- iv) ADAS – Arboriculture;
- v) AOC Archaeology – Archaeology & Cultural Heritage;
- vi) Avian Ecology – Ecology and Nature Conservation;
- vii) Noise and Vibration Consultants – Noise;
- viii) Pager Power – Glint and Glare Assessment;
- ix) Soil Environment Services Ltd – Agricultural Land Classification; and
- x) WaterCo – Flood Risk and Drainage.

## 1.2 Background to the Proposed Development

- 1.2.1 The UK Government declared a Climate Emergency in May 2019. In June 2019 the UK Government became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The Climate Change Act 2008 (2050 Target Amendment) Order 2019 (the Climate Change Act) requires the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels.
- 1.2.2 Significant increases in renewable and low carbon generation, combined with carbon capture and storage will be required to achieve the Government's net zero commitment by 2050, based on current and predicted demand.
- 1.2.3 National Grid's Future Energy Scenarios (FES) 2023 predicts that electricity demand will continue to increase due to increasing population, the transition to electric vehicles, hydrogen production and move away from natural gas for heating. This increased energy demand will need to be met by renewable, low-carbon and carbon negative sources to achieve net zero by 2050. The FES 23 report sets a clear target of up to 70 GW of new solar generation by 2035.
- 1.2.4 In April 2022 the UK Government published the policy paper '*British Energy Security Strategy*<sup>1</sup>', setting out how the UK intends to secure clean and affordable energy for the 'long-term'.
- 1.2.5 The most notable target within this strategy, focused on solar, is for 70 GW of solar energy generation capacity to be available within the UK by 2035. This would be a

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<sup>1</sup> Department for Business, Energy, & Industrial Strategy. (2022). *British Energy Security Strategy*.

- significant increase on the UK's current domestic solar energy production that totals circa 13.7 GW as of February 2022. Over the last five-year period, the UK increased its solar capacity by only an estimated 1.8 GW, highlighting the extraordinary need for a significant increase in solar development if the strategy's targets are to be fulfilled.
- 1.2.6 In March 2023, the UK Government reaffirmed its commitment to delivering new solar development at significant pace across the UK, maintaining the target of delivering up to 70 GW of solar development by 2035. The policy paper '*Powering Up Britain*' further states that:
- 1.2.7 *"Energy security and net zero are two sides of the same coin. We already have the right strategic approach, and we need to double down on delivery. The energy transition in line with net zero is one of the greatest economic opportunities for this country and we are committed to ensuring that the UK takes advantage of its early mover status. Rapid deployment of low carbon electricity will enable a systemic transformation across the economy working with technologies across the system to deliver cheaper, more secure energy. Further, global action to mitigate climate change is essential to long term prosperity – the overall costs and risks of global warming are estimated to be equivalent to losing between 5% and 20% of global GDP each year"*
- 1.2.8 In June 2023, the Government Committee on Climate Change published their 2023 Progress Report titles '*Progress in reducing emissions*'<sup>2</sup>. The report concludes that the UK is '*significantly off track*' in solar deployment to meet the Government target of 70 GW by 2035. Solar deployment is the only renewable energy technology which is '*significantly off track*' in deployment (Figure 7.2 of the CCC Progress Report).
- 1.2.9 The Proposed Development would make a positive contribution to achieving net zero by 2050 by increasing the amount of zero carbon renewable electricity generated and supplied to the National Grid. This would help to further decarbonise the UK's energy production sector.
- 1.2.10 The Proposed Development would make a positive contribution to achieving net zero by 2050 by increasing the amount of zero carbon renewable electricity generated

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<sup>2</sup> Government Climate Change Committee. (2023). *Progress in reducing carbon emissions*.



and supplied to the National Grid. This would help to further decarbonise the UK's energy production sector.

- 1.2.11 Further details in respect of the need for the Proposed Development are set out in Section 4 of this document.

### ***Selection of the Site***

- 1.2.12 The starting point for any renewable energy generation project is identifying a part of the National Grid where there is available grid capacity to connect a renewable energy project. To identify suitable sites for solar farms, two principal criteria must both be satisfied:

- i) Firstly, and most importantly, any solar scheme must be located proximate to an existing substation which has the available capacity to import the required amount of power into the National Grid, either directly into the substation or via a point of connection into the nearby transmission network;
- ii) Secondly, solar schemes must be located close enough to the identified substation or transmission line to remain viable both in terms of cable deployment for the grid connection, and to ensure that minimum transmission losses occur.

- 1.2.13 These principals are supported by the National Policy Statement for Renewable Energy EN-3<sup>3</sup> (EN-3), which at paragraphs 2.10.22 to 2.10.24 states that:

*“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.*

*Larger developments may seek connection to the transmission network if there is available network capacity and/or supportive infrastructure.*

*In either case the connection voltage, availability of network capacity, and the distance from the solar farm to the existing network can have a significant effect on the commercial feasibility of a development proposal.”*

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<sup>3</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1147382/NPS\\_EN-3.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf)



1.2.14 Furthermore, paragraph 2.10.25 of EN-3 states that:

*“To maximise existing grid infrastructure, minimise disruption to existing local community infrastructure or biodiversity and reduce overall costs applicants may choose a site based on nearby available grid export capacity.”*

1.2.15 The Applicant established through discussion with the DNO that there was available capacity in the local transmission network to import renewable energy. Specifically, this capacity relates to an overhead high voltage 132kV power line that crosses the District and connects to the Cliff Quay Grid substation.

1.2.16 The Applicant therefore reviewed the local context identifying policy and environmental constraints to development, before agreeing terms with the landowner at Grove Farm. This landowner is eager to support a solar farm to tackle the climate emergency and energy crisis.

1.2.17 The Applicant has prepared an Alternative Site Assessment (ASA) to review potential alternative development sites to the Site that are of a size and location suitable for a commercial solar development. The ASA demonstrates that there are no better alternative locations within Babergh District for a commercial solar array with a generating capacity of 40 MW to connect into the 132kV power line identified as the point of connection with the National Grid.

1.2.18 The Site is therefore in the best possible location to provide the requisite essential renewable energy, whilst avoiding or minimising environmental harm. In addition, the characteristics of the Site are well suited to accommodating a commercial solar array due to the broadly flat underlying topography and the existing landscape framework of hedgerows and trees that provide opportunities for integration, visual screening, and biodiversity enhancement.

1.2.19 The Alternative Site Assessment is presented in Appendix A of this PDAS.

### **1.3 The Proposal**

1.3.1 The Applicant is proposing to construct and operate a photovoltaic solar array for a period of 40 years, after which the Proposed Development would be decommissioned and the Site returned to its existing condition, unless planning permission is secured for continued operation. The Proposed Development would comprise the following main elements as shown across the General Arrangement



drawings (3223-01-03a and 3223-01-03b) and Landscape Proposals drawings (3223-01-13):

- i) Photovoltaic Solar Panels and associated support frames;
- ii) String inverters
- iii) Transformer Stations;
- iv) Client Substation;
- v) Distribution Network Operator (DNO) Substation;
- vi) Control Building;
- vii) Spares Container;
- viii) Internal access tracks;
- ix) Deer/stock fencing;
- x) Substation fencing; and
- xi) Landscaping.

1.3.2 The solar array would export up to 40 MW of renewable electricity to the National Grid during peak operation.

1.3.3 The point of connection with the National Grid is a high voltage pylon located at grid reference TM123379. The grid connection would connect to this pylon via Horizontal Directional Drill (HDD) beneath the railway line. The Proposed Development includes a small substation to be constructed adjacent to the pylon to facilitate the connection into the transmission network.

## **1.4 The Applicant**

1.4.1 Green Switch Capital Ltd is a UK-based energy developer headquartered in Liverpool.

1.4.2 Green Switch Capital is a renewable energy business that wants to make a difference – helping the UK to reach net zero carbon emissions by 2050 and laying the foundations for an independent energy market that isn't reliant on other countries for power. Green Switch Capital are investing heavily in the latest renewable energy technology to ensure a sustainable future for everyone, with multiple gigawatts in the pipeline.



## 1.5 Design and Access Statement

### *Legislative Requirements*

- 1.5.1 The legal requirement to provide a Design and Access Statement is set out in Article 9 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended). This is hereafter referred to as the “DMPO”.
- 1.5.2 A Design and Access Statement is required for development which is (inter alia) a major development. The Proposed Development meets this criterion, and accordingly this document constitutes a combined Planning Statement and Design and Access Statement.
- 1.5.3 Paragraph 2 of Article 9 requires that a Design and Access Statement must include details of:
- i) the design principles and concepts that have been applied to the development; and
  - ii) how issues relating to access to the development have been dealt with.
- 1.5.4 In achieving this, Paragraph 3 of Article 9 requires that a Design and Access Statement must:
- iii) explain the design principles and concepts that have been applied to the development;
  - iv) demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;
  - v) explain the policy adopted as to access, and how policies relating to access in relevant local development documents have been taken into account;
  - vi) state what, if any, consultation has been undertaken on issues relating to access to the development and what account has been taken of the outcome of any such consultation; and
  - vii) explain how any specific issues which might affect access to the development have been addressed.



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### ***National Planning Policy Guidance***

- 1.5.5 The National Planning Policy Guidance (NPPG) identifies that a Design and Access Statement should be a concise document. The Guidance (ref: Paragraph: 029 Reference ID: 14-029-20140306) identifies that:

*“[Design and Access Statements] provide a framework for applicants to explain how the proposed development is a suitable response to the Site and its setting, and demonstrate that it can be adequately accessed by prospective users. Design and Access Statements can aid decision-making by enabling local planning authorities and third parties to better understand the analysis that has underpinned the design of a development proposal.*

*The level of detail in a Design and Access Statement should be proportionate to the complexity of the application, but should not be long.”*

- 1.5.6 The information necessary to satisfy the requirements of Article 9 of the Town and Country Planning (Development Management Procedure) (England) Order 2015, in respect of Design and Access Statements are provided in Sections 2 and 5 of the PDAS and associated Technical Appendices. The level of detail provided is appropriate and proportionate to the nature and complexity of the scheme.

## **1.6 Planning History**

- 1.6.1 The Application Site has not been subject to any previous planning applications for major development, or renewable energy.

## **1.7 Community Consultation**

- 1.7.1 The Applicant undertook public consultation on the Proposed Development in Autumn/Winter 2022 prior to submission of this planning application.

- 1.7.2 The public consultation was held both online and with a public exhibition at Bentley Village Hall on 29<sup>th</sup> September 2022. The website for the public consultation provided the opportunity for people to submit their comments and is still available online at [www.grovesolarfarm.com](http://www.grovesolarfarm.com). The Parish Council were informed of the proposed development and invited to attend the public consultation.

- 1.7.3 In total, feedback was received from 25 residents via the online portal, with approximately 40 people attending the consultation at the village Hall. In total, 6



people were in support of the Proposed Development, 4 were unsure, 13 were against, and 2 made no comment.

1.7.4 Key themes of the feedback from the public consultation included:

- People are very supportive of solar development, but in the right locations, and that the Proposed Development is too big and in the wrong location;
- That the development was too close to residential properties around the site boundary;
- That solar development is essential and should be built as quickly as possible;
- That fields should be used for growing food and not for energy production;
- That the roads through the village were too busy, particularly at school drop-off and pick-up, and that it wouldn't be safe to take traffic past the primary school or along Church Lane; and
- That there were no benefits to this for the local community.

1.7.5 The Applicant has acted on the feedback received and made a number of key changes to the Proposed Development and the construction strategy, including:

- Changing the layout of the solar arrays to create greater offsets to residential properties along the Site boundaries;
- Improving the landscape proposals to deliver greater visual screening and to provide enhancement to local ecological networks;
- Removing the west of the Site from the development area in order to retain it in productive agricultural use;
- Re-locating the client substation from the originally proposed location near a neighbour's boundary to a position further south near the landowner's boundary; and
- Negotiating an alternative site access from Station Road to avoid taking construction traffic through the village of Bentley, past the Primary School, or along Church Lane.

## 2.0 SITE LOCATION AND CONTEXT

### 2.1 The Site

2.1.1 The location of the Proposed Development (the Site) is shown on Planning Drawing 3223-01-01.

2.1.2 A detailed plan showing the statutory Application Site boundary is presented across Planning Drawings 3223-01-02a to 3223-01-02b.

2.1.3 The Application Site is located to the north of the village of Bentley, within the administrative area of Babergh District. The Application Site includes the land required for:

- the proposed solar array, associated infrastructure and landscaping;
- the Distribution Network Operator (DNO) substation at the point of connection with the National Grid;
- the grid connection between the solar array and the DNO substation; and
- the access tracks from the public highway to the proposed solar array and DNO substation.

2.1.4 The Application Site is referred to as the 'Main Site' when considering the land required for the proposed solar farm and access track from Station Road, and the 'Substation Site' when considering the land required for the DNO substation, grid connection and associated access track.

2.1.5 The total site area is 46.8 hectares.

#### *Main Site*

2.1.6 The Main Site comprises two arable fields located north of the village of Bentley, with access through Grove Farm from Station Road to the west. The fields are separated by a road (Church Road) and are part of the same farm system, managed by a single landowner.

2.1.7 To the north and south of the Main Site is scattered and dispersed rural settlement associated with Bentley Hall to the north, and Bentley to the south. To the east and west of the Main Site is open agricultural land interspersed with blocks of woodland. The Great Eastern Main Line railway forms the easternmost boundary of the Main Site.



- 2.1.8 The Main Site benefits from a strong level of enclosure, with mature hedgerows, woodland and other vegetation within Site boundaries. There are intermittent gaps in this vegetation at field access points or in places where the hedgerows have become top-heavy and gappy. Part of the Site boundary to the north-west is formed by Engry Wood ancient woodland.
- 2.1.9 The topography of the Main Site is relatively flat with a gentle fall from west to east. At the eastern end of the Main Site the landform falls away slightly more sharply towards the railway line to the east. The Main Site generally lies between 35m and 40m above ordnance datum (AOD).

#### *Substation Site*

- 2.1.10 The Substation Site comprises the western edge of two arable fields to the eastern side of the Great Eastern Main Line railway. The Substation Site is connected to the Main Site by a crossing of the railway line, and is accessed via an access track to a road to the north.
- 2.1.11 The Substation Site links to a high voltage pylon in an area of open wooded habitat mosaic to its south, with the pylon being the Point of Connection for the solar farm.
- 2.1.12 The closest residential property to the Substation Site is Maltings House approximately 250m to the east.
- 2.1.13 The Substation Site sits between the Great Eastern Main Line to its west and a parallel line of high voltage pylons which is just to its east. A separate line of electricity pylons sits perpendicular to the Site crossing the access track between the Point of Connection to the south and the road to the north. A public footpath follows the line of these electricity pylons between woodland to the west of the railway line, and Maltings House to the east.
- 2.1.14 The topography of the Substation Site is generally flat along the access track, with the location of the proposed DNO substation sitting within a depression on the eastern side of a narrow valley that separates the Main Site and the Substation Site. The access track is at approximately 36-38m AOD, and the location of the DNO substation within the Substation Site is between approximately 31-33m AOD.





## **2.2 Site Context**

- 2.2.1 The Site is not covered by any statutory landscape, heritage or nature conservation designations. There are also no local (non-statutory) landscape, heritage or nature conservations which cover the Site.
- 2.2.2 The closest landscape designation is the Suffolk Coast and Heaths National Landscape (legally an Area of Outstanding Natural Beauty) which is approximately 1km south of the Main Site and from which there is no intervisibility with the Site.
- 2.2.3 There are no nature conservation designations in close proximity to the Site that could be affected by the Proposed Development. Engry Wood to the north-west boundary of the Site is designated as Ancient Woodland which is an irreplaceable habitat but not a formal nature conservation designation. The Arboricultural Assessment undertaken by the Applicant has also identified a number of potential Ancient and Veteran Trees in proximity to the Site boundary which are also irreplaceable habitats but not nature conservation designations.
- 2.2.4 The closest heritage designations include the Grade II\* listed Church of St Mary to the north of the Main Site, and Grade II\* listed buildings located around Bentley Hall including the Grade I Bentley Hall Barn. The only one of these listed buildings with potential intervisibility with the Site is the Church of St Mary, however there is no intervisibility with the Site from ground level. There are two Grade II listed buildings at Maltings House approximately 250m east of the Substation Site.
- 2.2.5 The Site is not located within Flood Zone but is shown to have some risk of surface water flooding around the Substation Site.
- 2.2.6 There are two public rights of way which cross the Site, one (FP 50) crosses the access track to the Main Site between Station Road and Grove Farm, and one (FP 18) crosses the access track to the Substation Site. There are no public rights of way crossing the proposed solar development of the Main Site, or the proposed DNO Substation at the Substation Site. Church Lane which separates the two fields of the Main Site is a locally designated Quiet Lane.
- 2.2.7 There are no Tree Preservation Orders (TPOs) covering the Site.



## 3.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

### 3.1 Proposed Development

3.1.1 The Applicant is proposing to construct and operate a photovoltaic solar array for a period of 40 years, after which the Proposed Development would be decommissioned and the Site returned to its existing condition, unless planning permission is secured for continued operation. The Proposed Development would comprise the following main elements as shown across the General Arrangement drawings (3223-01-03a and 3223-01-03b) and Landscape Proposals drawings (3223-01-13):

- i) Photovoltaic Solar Panels and associated support frames;
- ii) String inverters
- iii) Transformer Stations;
- iv) Client Substation;
- v) Distribution Network Operator (DNO) Substation;
- vi) Control Building;
- vii) Spares Container;
- viii) Internal access tracks;
- ix) Deer/stock fencing;
- x) Substation fencing; and
- xi) Landscaping

3.1.2 The solar array would export up to 40 MW of renewable electricity to the National Grid during peak operation.

3.1.1 The point of connection with the National Grid is a high voltage pylon located at grid reference TM123379. The grid connection would connect to this pylon via Horizontal Directional Drill (HDD) beneath the railway line. The Proposed Development includes a small substation to be constructed adjacent to the pylon to facilitate the connection into the transmission network.

3.1.2 The Proposed Development is illustrated on the following Planning Drawings and described in the text below:

- i) 3223-01-01 Site Location Plan
- ii) 3223-01-02 Statutory Plan
- iii) 3223-01-03 General Arrangement

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- iv) 3223-01-04 Solar PV Frame, Panels, and String Inverters
  - v) 3223-01-05 Transformer Station
  - vi) 3223-01-06 Control Building
  - vii) 3223-01-07 Spares Container
  - viii) 3223-01-08 Substation Compound Elevations
  - ix) 3223-01-09 Substation Buildings
  - x) 3223-01-10 Substation Compound Fencing
  - xi) 3223-01-11 Site Fencing, Access Track and CCTV
  - xii) 3223-01-12 Typical Cable Trench
  - xiii) 3223-01-13 Landscape Proposals

3.1.3 The Site would be decommissioned at the end of its 40 year operational life and would be restored to full agricultural use following decommissioning.

#### ***Solar Panels & frames***

3.1.4 The Proposed Development comprises the installation of static solar PV panels mounted to a steel and aluminium frame at an angle of approximately 15-20° and facing south. The layout of the solar panels is illustrated on Planning Drawing 3223-01-03a and a typical solar panel frame configuration is illustrated on Planning Drawing 3223-01-04. The lowest edge of the solar panels would be raised approximately 800mm above ground level to enable the area under the panels to be grazed by sheep.

3.1.5 The solar PV support frames would be arranged into rows set approximately 2.5m to 3.5m apart and the maximum height of the panels along the back edge of the array would be up to 3m in height.

3.1.6 The solar PV support frame structures would consist of steel uprights and aluminium or steel cross bars. The steel uprights would comprise hollow c.3mm sheet steel post with a u-shaped cross section.

3.1.7 The posts would be ram driven into the ground using a number of specialist small scale GPS controlled piling machines to a depth of up to approximately 1.2m, depending on ground conditions. The rest of the support frame would then be fitted to the posts to create angled support tables ready for the solar panel installation. If there are areas of archaeological sensitivity, surface mounted solar panel frames would be used to enable preservation of archaeology in-situ.



3.1.8 The solar PV modules would be mounted on to the pre-constructed support frame table. The solar PV modules convert solar irradiance (sunlight) into direct current (DC) electricity. The individual solar PV modules within the Proposed Development would consist of dark blue, dark grey or black photovoltaic cells. PV technologies are developing rapidly and it is not possible to specify the precise panel type, as this will depend on the competitive procurement process and the technology available at the time of construction.

3.1.9 The solar PV modules would be connected in 'strings' and cabling would be secured to the rear of the solar panel and would be protected from grazing livestock by suitable trunking/elevation. From the end of each run the cables would be taken below ground and would be connected to string inverters located at the end of intermittent rows. If there are areas of archaeological sensitivity, surface mounted cable trunking would be used to avoid any impacts on buried archaeology. The string inverters would be located throughout the Proposed Development. The string inverters would in turn connect to the transformer stations which are dispersed within the Proposed Development.

#### ***String Inverters***

3.1.10 String inverters take direct current (DC), as generated by the solar panels, and convert it into alternating current (AC) to enable the on-site generated electricity to be transferred to the on-site DNO Substation and in turn to the National Grid. At this time, it is anticipated that the inverters will be Sungrow SG350HX which are approximately 1.14m wide x 0.87m high x 0.36m deep and attach behind the panel rows, as shown on Planning Drawing 3223-01-04.

3.1.11 Due to rapid advances in technology, it is not possible to specify the precise type of inverter as this will depend on the detailed electrical design and competitive procurement process. However, it is suggested that the final details could be controlled through suitably worded planning conditions requiring the final details to be submitted.

#### ***Transformer Stations***

3.1.12 The development requires the installation of 11 transformer stations, as shown on Planning Drawing 3223-01-03a. The transformers would control and increase the voltage of the electricity generated by the solar panels before it reaches the on-site



DNO Substation and distribution network. The transformer stations comprise individual containers (approximately 6.06m long x 2.44m wide x 2.90m high). The cumulative footprint of the 11 transformer stations would be c.163m<sup>2</sup> and would be supported by strip or slab foundations depending on localised ground conditions. The maximum height, with foundations, would be no greater than 3.2m. The transformer stations would contain the transformers necessary to connect the solar farm to the on-site Client Substation. Planning Drawing 3223-01-05 illustrates a transformer station.

- 3.1.13 At this time, it is anticipated that the transformer station will be a Sungrow MVS3200/4480-LV, however due to rapid advances in technology it is not possible to specify the precise type of transformer as this will depend on the detailed electrical design and competitive procurement process. However, it is suggested that the final details could be controlled through suitably worded planning conditions requiring the final details to be submitted.

#### ***Control Building***

- 3.1.14 The Control Building would contain equipment necessary for monitoring the performance of the solar farm. This would not be permanently manned and would be for visiting maintenance engineers. As such welfare facilities would not be included or required.
- 3.1.15 The Control Building would be located in close proximity to the on-site DNO Substation, as shown on Planning Drawing 3223-01-03a.
- 3.1.16 The design for the Control Building is shown on Planning Drawing 3223-01-06 and it would be finished in a recessive green colour. The overall footprint of the Control Building would be c.13.5m<sup>2</sup> with a maximum height of approximately 3.20m.

#### ***Spares Container***

- 3.1.17 The Spares Container comprises a shipping container that will be used to store spare parts including panels, cabling, and other essential parts. The location of the Spares Container is shown on Planning Drawing 3223-01-03a, and Planning Drawing 3223-01-07 shows the appearance of the shipping container. The overall footprint of the shipping container would be 29.9m<sup>2</sup> with a maximum height of approximately 2.80m.



### ***Substation Compounds***

- 3.1.18 The on-site electricity generation connects to the National Grid via the on-site Customer Substation, which comprises a Customer Substation building, further transformers, a disconnector, and other cabling infrastructure. A plan view layout of the Customer Substation Compound is shown on Planning Drawing 3223-01-03a, and a to scale elevation of the compound infrastructure is shown on Planning Drawing 3223-01-08a.
- 3.1.19 The on-site Customer Substation is connected via a grid connection to an off-site DNO Substation located at the Substation Site at the Point of Connection. The location and arrangement of this second substation is shown on Planning Drawing 3223-01-03b, and an elevation of the compound is shown on Planning Drawing 3223-01-08b.
- 3.1.20 The Customer Substation Compound includes a Customer Substation building as shown on Planning Drawing 3223-01-09a. The DNO Substation Compound includes a DNO Substation building as shown on Planning Drawing 3223-01-09b. The substation buildings house essential operational controls.
- 3.1.21 Both substation compounds will be surfaced with type 1 permeable hardcore aggregate.

### ***Security***

- 3.1.22 Security around the solar arrays would be provided by approximately 2.1m high deer/stock fencing and pole mounted CCTV cameras. The deer / stock fencing is widely used on solar facilities in the UK as it is suited to rural environments, restricts access to the public, and contains livestock used to graze around the panels. The location of the deer / stock fencing is shown on Planning Drawing 3223-01-03b and elevation details are shown on Planning Drawing 3223-01-11.
- 3.1.23 The CCTV poles would have a maximum height of 3m and would generally have one pan-tilt-zoom (PTZ) camera focussed along the boundary of the Site. At certain locations two cameras would be deployed so that they can be targeted on specific locations. All cameras would operate using infra-red technology and as such no lighting would be required. The indicative CCTV is illustrated on Planning Drawing 3223-01-11.



- 3.1.24 In addition to the deer / stock fencing, steel palisade fencing is proposed around the two substation compounds as shown on Planning Drawing 3223-01-03a and 3223-01-03b. Palisade fencing is proposed around the substations to protect the grid infrastructure which is high voltage, open air, and therefore has a potential risk to life. The substation compound fencing is illustrated on Planning Drawing 3223-01-10.

### ***Electrical Cabling***

- 3.1.25 On-site electrical cabling is required to connect the solar panels to the string inverters, to the transformer stations, to the proposed DNO Substation and to the point of connection with the National Grid.
- 3.1.26 Planning Drawing 3223-01-12 provides details of an indicative cable trench. Cable trenches would generally run parallel and adjacent to the on-site access tracks and fence lines. In addition to electrical cabling the trenches may also carry earthing, data and communications cables and will be backfilled with fine sand and excavated materials to the original ground level. Marker posts would be placed on either side to clearly demarcate the location of the cable crossing, if required. Cabling will also be required for power and data transfer associated with the CCTV system described below. This will generally follow the perimeter fence lines where the CCTV cameras would be located at c.200m spacing. If there are areas of archaeological sensitivity, surface mounted cable trunking would be used.

### ***Access Tracks***

- 3.1.27 Access to the Main Site would utilise an existing access track that would require partial resurfacing from Station Road to Grove Farm, and access to the Substation Site would require a new access track off an unnamed road.
- 3.1.28 The access tracks would be formed by excavating 200mm and laying clean Type 1 stone within a geogrid over a geotextile membrane, depending on ground condition. Excavated material would be re-used on Site. The layout of the access tracks is illustrated on Planning Drawing 3223-01-03a and 3223-01-03b, and Planning Drawing 3223-01-11 illustrates an indicative cross section through a typical access track construction.



### ***Micro-siting***

- 3.1.29 Due to the nature of the proposed development the final position of the panels, support frames, cable runs and transformer stations may move slightly in response to the detailed design of the facility and constraints identified during construction. As such a micro-siting allowance of 25m has been requested to assist in mitigating any environmental /physical effects that cannot be identified until the construction stage.

### ***Drainage***

- 3.1.30 The solar panels would allow rainwater to fall between gaps to the ground below the panels where it would percolate to ground. Erosion would be prevented by maintaining the grass sward beneath the panels that would prevent rilling. It is proposed that filter field drains would be included between approximately every fifth row of panels, leading to on-site swales that would retain surface water in extreme events.
- 3.1.31 All new site access tracks would be constructed of permeable stone and would infiltrate to ground. The transformer stations, Switchroom Building, Control Centre and DNO Substation would drain to localised filter drains or swales that would allow percolation to ground.
- 3.1.32 Subsurface field drains would be removed, where required, following decommissioning.

### ***Lighting***

- 3.1.33 Lighting would be limited to the Control Building and Substation buildings. Low level lighting would be positioned above access doors and would only be motion-activated by passive infra-red (PIR) sensors for security/emergency purposes or when switched on by a maintenance engineer. No areas of the Proposed Development would be continuously lit during operation.

### ***Landscaping***

- 3.1.34 The landscape proposals for the Site are shown on Planning Drawing 3223-01-13.
- 3.1.35 The Proposed Development has been designed to as far as practicable retain hedgerows and boundary vegetation, with predicted vegetation removal only around two of the access points, and at the point of connection. To retain vegetation there





is a buffer of minimum 6m between field boundaries and the proposed solar farm fencelines, but with the buffer area increasing in proximity to trees and boundary woodland as informed by the Arboricultural Tree Constraints Plan. This includes a buffer of more than 15m to the Engry Wood Ancient Woodland, and buffers to avoid root protection areas for all ancient and veteran trees in field boundaries.

3.1.36 The historic landscape fabric of the site has been somewhat eroded by the gradual removal of internal field boundaries to the fields of the Main Site, and the loss of hedgerow trees both from removal and from pests and disease. This is identified in the published landscape character assessments at all levels covering the Site, with opportunities identified to:

- generate long-term landscape enhancement through extensive hedge planting schemes, which will provide a positive landscape legacy beyond the life of the development;
- reinforce the historic pattern of field boundaries and recognising these when restoring and planting hedgerows; and
- maintain and increase the stock of hedgerow trees.

3.1.37 The layout of the Proposed Development has been guided by the Suffolk Historic Landscape Characterisation, historic maps of the Site (available to view online via the National Library of Scotland), and by the need to maximise the efficiency of the solar development whilst considering long-term management post-decommissioning. The proposed layout of the solar arrays and hedgerows seek to respond to each of these issues to restore a smaller-scale intimate field pattern in the long-term, improve habitat connectivity, and bring a diversity of hedgerow trees. This is intended to provide a positive legacy to the Proposed Development post decommissioning.

3.1.38 The Proposed Development includes several smaller fields along the northern and southern boundaries of the Main Site to be maintained as wildflower meadows utilising a species-diverse mix similar to Emorsgate EM34 Mixed Diverse Meadows which contains a range of species that are associated with traditional lowland hay meadows.

3.1.39 The grassland within the fenceline of the Proposed Development is expected to be grazed by sheep, but could also be subject to annual mowing. It is expected these areas would not achieve the same levels of species diversity as the field margins



and wildflower meadows outside of the solar fencelines. The species mixes here will therefore be more heavily grass focused for grazing, but would incorporate appropriate herbs and legumes for pollinator and biodiversity benefits.

3.1.40 The proposed hedgerows would utilise native species such as hawthorn, blackthorn, holly, hazel, field maple, elder, dogwood, field roses and hedgerow trees such as oak, elm and hornbeam.

3.1.41 The soft landscape proposals build on the existing landscape features and seek to:

- i) Retain existing vegetation patterns as far as practicable by maintaining a minimum 6m buffer between field boundary hedgerows and woodland, and the stock fencing around the development areas;
- i) Create buffer zones between fencelines and field boundaries for habitat connectivity, either seeding these areas with species-rich grassland mixes or allowing natural regeneration and colonisation by local species;
- ii) Create large-scale species-diverse grassland within parts of the solar farm for wildlife benefit;
- iii) Create woodland areas for landscape integration and visual screening, and to provide ecological benefits;
- iv) Utilise native species trees and shrubs that are characteristic of this part of Suffolk, whilst diversifying the range of native species in the local area to reduce biosecurity threats from pests and disease; and
- v) Retain agricultural activity across the Site by grazing parts of the Site, promoting regenerative agriculture by careful management of livestock levels.

3.1.42 The key elements of the soft landscape proposals are as follows:

- i) Grazing pasture;
- ii) Species-diverse grassland;
- iii) Native species hedgerows; and
- iv) Native species woodland.

3.1.43 It is proposed that the detailed specification and management requirements of the proposed landscaping would be secured by planning condition with agreement from the Local Planning Authority required before commencement.



### ***Grid Connection***

- 3.1.44 The point of connection with the National Grid is a high voltage pylon located at grid reference TM123379. The grid connection would connect to this pylon via trenching and Horizontal Directional Drill (HDD) beneath the railway line. The Proposed Development includes a small substation to be constructed adjacent to the pylon to facilitate the connection into the transmission network.
- 3.1.45 The grid connection would be delivered partly by trenching, and partly by Horizontal Directional Drill (HDD), as shown on Planning Drawing 3223-01-03a and 3223-01-03b. The HDD would be used to avoid impacts to the railway line, and any intervening trees, woodland, and other habitats.
- 3.1.46 The HDD would launch from a launch pit within the Main Site and received by a reception pit south-east of the Substation Site. The launch pit and reception pit would be outside of root protection areas of all trees.
- 3.1.47 The HDD would be at a minimum depth of 3m so as to be below the rhizosphere of the tree and woodland soils (considered to be the 'living' portion of the soil and hence the most valuable portion), and to be below any potential tree roots, thus avoiding any damage to trees.
- 3.1.48 The construction methodology for the HDD works is set out below:
- i) A 3m x 2m x 1.2m pit would be excavated at the launch and reception points. The pit will be fenced off using double clipped Heras fencing.
  - ii) HDD equipment would be transported to the launch pit via low loader lorry.
  - iii) The lorry would be parked within a safe working area for offloading of the drilling rig. The drill will be off loaded by one operator, whilst a second operator acts as a banksman guiding the drill down the lorry ramps. Another two operatives will be present to monitor any other pedestrian or vehicle movement.
  - iv) The drilling rig will be sited at the launch pit.
  - v) The grid connection cable route will be cat scanned prior to works proceeding.
  - vi) The launch pit will be excavated and drill rig situated behind pit. The drill operator will then rotate the drill string to check operation.
  - vii) Water will be added to the mixing system to start mixing the necessary mud mix.

- viii) The drill head tracker engineer will perform background checks for interference and the location hand-set will select the 2 lowest best frequencies to overcome background interference.
- ix) A battery powered sonde is placed in the drill head and calibrated to minimum 3m using the location hand set.
- x) The drill operator pushes the pilot rods into the ground at the pre-agreed drill angle (based on the location of existing utility services).
- xi) The steering engineer will then check the position of the drill head from the locator unit. This process is repeated during the pilot bore to keep the drill on course for the completion of the bore.
- xii) During the pilot operation, drilling fluid will be used to transport spoil, as well as to support and lubricate the bore path. The drilling fluid will be monitored to ensure that there are constant returns to the excavated pits, thus reducing hydraulic pressure within the bore. Due to the need to drill under a railway and water course (the drainage ditch alongside the railway) the drill design has been undertaken to give acceptable cover to the product pipe below the water course as required.
- xiii) The drilling creates a bore in which a product pipe can be installed.
- xiv) The boring technique is a closed system such the material excavated at the head is passed back along the bore by a drill fluid that is designed also to seal the bore. The seal prevents the permeation of the fluid into the surrounding ground such that there is no effect on the character of the surrounding ground. Besides the physical seal that the fluid creates along the bore, it has an operating head within the bore that balances any groundwater pressures within the natural ground.
- xv) Upon completion of the pilot bore the drill head will be removed, and replaced with a back reamer to enlarge the bore, this will be continued in stages until the bore is of an acceptable size to accept the product pipe.
- xvi) The directional drill rig operator will pull the rods back towards the launch pit.
- xvii) The pipes to be installed will then be attached to the final reamer and pulled into the bore.
- xviii) As pipes enter the bore, drilling slurry is displaced and flows back to the exit and then entry pits.
- xix) A tractor and bowser will collect drilling slurry from the exit pit and deposit it into the entry pit for recycling prior to reuse.
- xx) All wet arisings from the operation will be removed and disposed of by tanker.

xxi) The pipes to be installed are then butt welded and strung out away from the exit pit in a straight line.

3.1.49 From the HDD pits to the substation compounds, it is anticipated that open cut trenching would be undertaken to install the rest of the grid connection cable. Cable trench details are illustrated on Planning Drawing 3223-01-12.

## **3.2 Operations**

3.2.1 Once the proposed solar farm is constructed, access to the Site would be limited to routine solar maintenance operations and farm operations. The Proposed Development would not be permanently staffed. Maintenance access to the Site would be by a small van or similar.

3.2.2 Should more major repairs be required, such as the replacement of transformer stations, more staff and specialist equipment (cranes and low loaders) would be required. However, this is not anticipated to be a regular occurrence.

3.2.3 The main operational noise would be associated with the string inverters and transformer stations. The noise impacts associated with these elements are assessed in the separate Noise and Vibration Assessment.

3.2.4 As set out above the main activity during the operational phase of the development would be landscape maintenance operations, and the grazing of a flock of sheep below the solar panels and/or periodic mowing. This would retain most of the Site in productive agricultural use.

## **3.3 Construction**

3.3.1 The following section provides a summary of the key elements of the construction of the Proposed Development. This description is not intended to be prescriptive and the exact construction methods, phasing and programme would be determined by the appointed designers and contractors. However, the following description enables the principal construction phases and methods to be understood.

### ***Programme***

3.3.2 The timing of the construction works would be dependent on the grant of planning permission for the Proposed Development, subsequent contract negotiations and prevailing weather and ground conditions.



3.3.3 The construction period is anticipated to take approximately 32 weeks, including testing and commissioning.

3.3.4 This construction programme would allow for the following key construction-related works to be undertaken:

- Erection of Heras fencing around tree root protection areas;
- Establishment of site compound;
- Construction of site access tracks;
- Erection of deer / stock fencing and gates to site perimeter;
- Installation of solar panels and frames;
- Installation of CCTV poles and cameras;
- Installation of string inverters and transformer stations;
- Installation of cable trenches;
- Installation of control building, switchroom building and DNO substation building;
- Installation of filter drains;
- Grid connection;
- Cultivation and seeding; and
- Hedgerow and woodland planting.

### ***Construction Hours***

3.3.5 Construction activities would take place 6 days per week, during the following hours:

- Monday to Friday 07:30 – 18:00; and
- Saturday 08:30 – 18:00.

3.3.6 Deliveries and noise generating activities would only take place from Monday – Saturday (inclusive) within the following hours:

- Monday to Friday 07:30 – 18:00;
- Saturday 07:30 – 13:00; and
- No deliveries on Sundays with the exception of one-off abnormal loads or large vehicles such as cranes.

3.3.7 Piling would only be undertaken between 09:00 – 17:00 each day Monday – Friday.



### ***Site Access and Car Parking***

- 3.3.8 Construction access to the Main Site would be via the existing access track from Station Road to the west, with a direct crossing of Church Lane to the eastern field of the Main Site. No traffic would be routed along Church Lane.
- 3.3.9 Construction access the Substation Site would be via a proposed access track from an unnamed road, with access in turn from the A137.
- 3.3.10 All construction staff would arrive and park at the temporary construction compound within the development footprint. During periods of maximum construction activity, when manpower requirements would be greatest, staff would be encouraged to car share and/or use minibuses provided by the contractor from a central pickup location away from the site.
- 3.3.11 The Transport Statement submitted with this Application has concluded that the highways network is capable of accommodating the proposed construction activities without improvements, other than minor widening of the site entrance at Station Road to allow vehicles to pass.

### ***Site Compound and Operative Facilities***

- 3.3.12 Temporary compound areas would be formed using heavy duty construction matting to limit the need for excavation. The precise layout of the main construction compounds / laydown area and workers' vehicle parking would be a matter for the main construction contractor, who would not be appointed until after planning permission has been secured. It should be noted that the construction compounds would be covered by permitted development rights under Part 4 Class A: Temporary Buildings and Uses of the General Permitted Development Order (GPDO) 2015.
- 3.3.13 At the end of the construction period the construction compounds would be decommissioned. Stone and matting would be removed, and the areas would be restored.

### ***Construction Plant***

- 3.3.14 Plant on site is likely to comprise of:
- a number of small scale mechanical pile driving rigs for frame supports
  - 360° excavators;

- Dumper trucks and rollers for access tracks;
- Trenching machines;
- Telehandlers, and
- Cranes for transformers.

3.3.15 The numbers and size of this equipment will depend on the works that are being undertaken on site at a given time.

### ***Core Construction Works***

3.3.16 The main construction phases of the project are described below.

#### *Site Preparation and Development of Construction Compounds*

3.3.17 The perimeter of the construction Site would be fenced with the proposed deer/stock fencing. Temporary heras fencing or similar would be used around compounds and other work areas until the perimeter fencing is erected and the Site secured.

3.3.18 The construction compound(s) would be created for the initial Site earthworks phase. The compound would provide temporary Site offices, welfare facilities and material and plant storage areas. Dedicated refuelling areas and chemical and oil storage areas would also be provided within the compound as required and these would be fully bunded to comply with Environment Agency requirements.

#### *Earthworks, Foundations and Piling*

##### Excavations

3.3.19 The excavations for the permanent access tracks and foundations for the Transformer Stations, DNO Substation Building, Control Room and Switchroom Building would be re-used on site or stored adjacent to the excavations for use in restoration following decommissioning.

##### Temporary Excavations

3.3.20 Temporary excavations required for construction would be minimal and would primarily be associated with trench excavations for cable runs. Topsoil and subsoil would be stored separately immediately adjacent to the excavation in stockpiles not exceeding 1m in height. Temporary excavations would be reinstated immediately following construction to restore the previous soil profile. Topsoil would be graded





out to marry the excavations with the existing site levels and the areas would be seeded with a meadow grassland seed mix suitable for sheep grazing as detailed above.

### Foundations

3.3.21 The foundations for the Transformer Stations, DNO Substation Building, Control Room and Switchroom Building would be slab foundations or concrete sleepers, depending on ground conditions.

3.3.22 Foundation slabs and sleepers would be cast in-situ and concrete would be delivered directly to the Site via concrete mixer lorry.

### Piling

3.3.23 As set out above the support posts for the solar panel frame would be ram driven into the ground using a number of specialist small scale GPS controlled piling machines to a depth of approximately 1.2m depending on ground conditions. A typical small scale piling machine used for solar farm construction is illustrated in the image below.

**Image 1: Typical GPS Solar Farm Pile Driver**



3.3.24 In areas of archaeological sensitivity piled supports would be replaced by ground mounted concrete sleepers.

### *Construction Lighting*

- 3.3.25 Lighting during construction would need to be sufficient to satisfy health and safety requirements, whilst ensuring impacts on the surrounding environment, including from sky glow, glare and light spillage, are minimised.
- 3.3.26 Artificial lighting would only be used during the hours of darkness, low levels of natural light or during specific construction tasks to ensure the health, safety and welfare of those on site, including construction staff and visitors.
- 3.3.27 Appropriate lighting would be installed and operated to ensure that:
- access/egress points are clearly visible during operational hours;
  - staff and visitors can move safely around site;
  - site security can be monitored and maintained; and
  - sufficient area lighting is provided for the Site office and laydown areas.
- 3.3.28 This would involve the use of mobile task lighting to provide the lighting necessary to satisfy Health and Safety requirements. Mobile lighting would be mounted on telescopic poles.

### *Construction Environmental Management Plan (CEMP)*

- 3.3.29 A CEMP would be developed for the construction phase of the development. This is likely to comprise an overarching CEMP framework to be applied to all phases of the development and also a series of phase specific CEMP documents which define specific measures to be adopted during the construction of the various components of the scheme.
- 3.3.30 The purpose of the overall CEMP would be to manage and report environmental effects of the project during construction. The CEMP would set out how environmental issues would be managed in accordance with relevant legislation, regulations and best practice guidance. It would be the responsibility of the main contractor to develop and enforce the CEMP. It is suggested that the requirement for a CEMP to be prepared is subject to a planning condition once the detailed design is completed to allow main contractor input.
- 3.3.31 The objectives of the CEMP would be to:



- highlight environmental impacts resulting from the development and identify sensitive receptors within the development site to the construction team;
- reduce and manage environmental impacts through appropriate construction methods;
- reduce and manage environmental impacts through implementing environmental best practice during the construction period;
- undertake ongoing monitoring and assessment during construction to ensure environmental objectives are achieved;
- provide emergency procedures to protect against environmental damage;
- provide an environmental management structure for the construction stage;
- recommend mechanisms to reduce risks of environmental damage occurring; and
- ensure procedures are in place for consultation with EA, Natural England, Local Authority Officers and other stakeholders throughout the works if necessary.

3.3.32 A CEMP for a project of this nature would typically cover the following key elements:

- drainage, water quality and hydrology;
- dust, emissions and odours;
- health and safety/site management;
- waste management;
- traffic management;
- wildlife and natural features; and
- contaminated material.

3.3.33 Prior to the commencement of construction works an environmental walkover would be undertaken to establish any changes in the environmental baseline since the surveys undertaken as part of the planning submission. This walkover would be used to update any of the defined construction procedures as necessary.

3.3.34 The main contractor would also develop a local community liaison strategy. This strategy would detail how the contractor would engage with the local community to inform them of the construction progress and inform them of any works that may give rise to queries or concerns. The strategy would also set out the means to allow the public to raise any concerns with the contractor and mechanisms to resolve any complaints.



3.3.35 The main contractor would take regard of the following guidelines in preparation of the CEMP and during the operation of the Site:

- Environment Agency. Pollution Prevention Guidelines 1: General Guide to the Prevention of Pollution (PPG1);
- Environment Agency. Pollution Prevention Guidelines 2: Above Ground Oil Storage Tanks (PPG2);
- Environment Agency. Pollution Prevention Guidelines 6: Working at Construction and Demolition Sites (PPG6);
- Environment Agency. Pollution Prevention Guidelines 7: Refuelling Facilities (PPG7);
- Environment Agency. Pollution Prevention Guidelines 8: Storage and Disposal of Used Oils (PPG8);
- Environment Agency. Pollution Prevention Guidelines 21: Pollution Incident Response Planning (PPG21);
- CIRIA. Control of water pollution from construction sites C532 (2001); and
- CIRIA. Environmental Good Practice on Site C650 (2005).

### ***Decommissioning***

3.3.36 At the end of the Solar Farm's 40-year life the Proposed Development would be decommissioned and the Site would be returned to solely agricultural use. The landscape improvements such as woodland, trees and hedgerows would remain. Decommissioning would require similar plant to the construction phase and would result in very similar traffic impacts.

3.3.37 All above and below ground infrastructure would be removed from site and would be recycled, if possible. Following decommissioning at the end of the schemes operational life or when panels need to be replaced due to failures/damage solid waste will be created. PV panel disposal is covered by the Waste Electrical and Electronic Equipment (WEEE) Directive. As such, any disposal of panels will need to comply with this directive. PV panels comprise a high proportion of glass along with smaller amounts of plastic, aluminium and other metals. All of these components are readily recyclable, with c.80% of the panel materials able to be recycled at specialist processors. In addition, support frames, fencing, CCTV poles and cabling all contain recyclable materials and stone/concrete can be processed for use as secondary aggregate.

3.3.38 As such, solid waste generated by decommissioning works can be effectively managed by moving waste up the waste hierarchy through recycling for beneficial use. As such significant effects associated with disposal of waste as a result of the proposed development would not occur.



## 4.0 THE NEED FOR THE DEVELOPMENT

### 4.1 Introduction

4.1.1 This section of the Planning Statement considers the strategic need for the Proposed Development based on a review of key Government policy and strategy.

### 4.2 National Energy Policy and Strategy

#### *Climate Change Act 2008 (2050 Target Amendment) Order 2019*

4.2.1 The Climate Change Act 2008<sup>4</sup> set a legally binding target for the UK to achieve an 80% reduction in greenhouse gas emissions by 2050, from the 1990 baseline. However, the UK Government decided that this legally binding target was not ambitious enough to mitigate the nation's activities on climate change. In 2019 the UK Government became the first major economy in the world to pass laws to end its contribution to global warming by 2050, compared to the 1990 baseline.

4.2.2 On 12 June 2019, the Government laid the draft Climate Change Act 2008 (2050 Target Amendment) Order 2019 to amend the Climate Change Act 2008 by introducing a target for at least a 100% reduction of greenhouse gas emissions (compared to 1990 levels) in the UK by 2050. This is otherwise known as the net zero target. The draft order amended the 2050 greenhouse gas emissions reduction target in the Climate Change Act from at least 80% to at least 100% thereby constituting a legally binding commitment to end the UK's contribution to climate change.

4.2.3 At the time the legislation was enacted the UK had already reduced emissions by 42% while growing the economy by 72%. However, the new target requires a significant increase in renewable energy, development of carbon capture and storage technology, construction of new nuclear generation, and a transition to hydrogen and electric for heating and transport.

4.2.4 On 20 April 2021 the UK government announced that it would set in law a more ambitious target of cutting carbon emissions by 78% by 2035 compared to 1990 levels. This was in response to the UK's Sixth Carbon Budget from the Climate

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<sup>4</sup> <https://www.legislation.gov.uk/ukdsi/2019/9780111187654>

Change Committee (see below) and signals the Government's acceptance of the recommendations and commitment to carbon emission reductions.

4.2.5 It is clear from the Government's legally binding commitment to net zero by 2050 and recent announcement that significant new investment will be required in renewable energy projects across the UK to deliver these ambitious objectives.

4.2.6 The Proposed Development would help deliver on the Government's legally binding target and would support the green economy. This should be given considerable weight in the planning balance when considering possible policy tensions. Recent volatility in the UK energy markets has highlighted the importance of the UK generating its own domestic supply of clean low carbon electricity and reducing reliance on imported fossil fuels.

#### ***Sixth Carbon Budget (2021)***

4.2.7 In April 2018 the Sixth Carbon Budget, required under the Climate Change Act, was published. On 20 April 2021 the UK government announced that it would adopt the recommendations and enshrine them in law, and the legislation was set out to parliament on 21 April 2021. The Sixth Carbon Budget provides advice on the volume of greenhouse gases that the UK can emit during the period 2033-2037. This would involve setting the most ambitious climate change target in the world of a reduction of 78% by 2035. One of the four key steps to achieving this target is the expansion of low-carbon energy supplies (such as the Proposed Development), with UK electricity production achieving zero carbon emissions by 2035. This is a dramatic step-change and will logically require more emphasis on renewable energy as part of a suite of measures to achieve this target.

#### ***Net Zero Strategy: Build Back Greener***

4.2.8 The Government published the 'Net-Zero Strategy: Build Back Greener<sup>5</sup>' in October 2021. The Strategy sets out policies and proposals for decarbonising all sectors of the UK economy to meet the net-zero target and keep us on track for future carbon budgets.

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<sup>5</sup> <https://www.gov.uk/government/publications/net-zero-strategy>

4.2.9 In terms of policies and proposals for power, Chapter 3i 'Reducing Emissions across the Economy - Power' sets out on pages 94 and 95 that, subject to security of supply, government's commitment to a fully decarbonised power system will be brought forward to 2035. It also seeks to accelerate deployment of low-cost renewable generation, such as wind and solar, and to ensure that the planning system supports the deployment of low carbon energy infrastructure.

4.2.10 Decarbonising the power sector forms the foundation of a productive net zero economy and needs to meet a 40-60% increase in demand by 2035. The strategy also identifies that this will regenerate communities and create new employment opportunities right around the UK (paragraph 20, page 99)

4.2.11 The strategy recognises that decarbonising gas heating is likely to take longer than decarbonising the electricity system and as such heat pumps and a high electrification scenario, as per National Grid's future energy, is the most likely scenario to 2035. Paragraph 18 on page 141 states that:

*'The increased deployment of heat pumps will be accompanied by investment in the infrastructure we need to meet increased electricity demand, including the generation of low carbon electricity and additional grid capacity'.*

4.2.12 This acknowledgement increases the weight that should be given to the wider environmental benefits of renewable energy and the security of supply that would be delivered by the Proposed Development.

***British Energy Security Strategy (2022)***

4.2.13 The British Energy Security Strategy<sup>6</sup> was published on the 7th April 2022 in response to rising global energy prices, provoked by surging demand after the Covid-19 pandemic as well as Russia's invasion of Ukraine. The strategy will be central to weaning Britain off expensive fossil fuels, which are subject to volatile gas prices set by international markets the UK is unable to control. The strategy aims to boost sources of homegrown energy for greater energy security in the long-term.

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<sup>6</sup> <https://www.gov.uk/government/publications/british-energy-security-strategy>



- 4.2.14 The strategy signals a significant investment in new nuclear power and significant increases in hydrogen production and usage. In addition, significant increases in the deployment of wind and solar generation are included in the strategy.
- 4.2.15 The ambitions for a significant increase in new nuclear and hydrogen production/usage are long term planks in the energy strategy, with new nuclear and a significant shift to hydrogen usage for transport, heating and other usage likely to take a number of decades to come to fruition.
- 4.2.16 However, the significant increases in renewable energy generation are deliverable now and the British Energy Security Strategy sets out ambitious renewable energy targets for offshore wind and solar in the short to medium term.
- 4.2.17 There is currently approximately 14 GW of solar generation capacity in the UK and the British Energy Security Strategy aims to increase this five-fold to 70 GW by 2035. Over the last five-year period, the UK increased its solar capacity by an estimated 1.8 GW, highlighting the need for a significant increase in solar development if the strategy's targets are to be fulfilled. This equates to delivery of 4.7 GW of solar generation per year until 2035 to ensure British Energy Security. As a comparison, this is the equivalent to delivering approximately 313 solar farms of an equivalent size to the Proposed Development, per year, for the next 12 years.
- 4.2.18 The Strategy offers clear support for solar development that is co-located with other functions to maximise the efficiency of land use – this includes agriculture and storage.

***Skidmore Net Zero Review (2023)***

- 4.2.19 The findings of an independent review of Net Zero targets and development progress was published February 2023, having been commissioned by the Secretary of State for the Department for Business, Energy & Industrial Strategy in September 2022.
- 4.2.20 The report<sup>7</sup> outlines that net zero provides a plethora of 'historic opportunities' and benefits both to individuals and the economy more broadly, emphasising the importance of net zero in an international context.

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<sup>7</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1128689/mission-zero-independent-review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128689/mission-zero-independent-review.pdf)



- 4.2.21 The review found that the UK is currently not on track to achieve the goal of net zero by 2050 and “*could do more to reap economic benefits of green growth*”. The review provides 129 recommendations “*all to seize opportunities from creating a green economy*”.
- 4.2.22 One of the core themes of the review is the need to accelerate the deployment of renewables, with a call to boost solar energy. Compounded with the previously identified suitability of solar energy to provide power to the UK grid, the Proposed Development represents the type of opportunity that the Skidmore Net Zero Review outlines.
- 4.2.23 The government has accepted the findings of the review and have stated the intent to take forward most of the recommendations, indicating the significance of this review within the Government’s contemporary approach to renewable energy development.

***Powering Up Britain (2023)***

- 4.2.24 The “Powering up Britain<sup>8</sup>” policy papers were published in March 2023, setting out how the government will enhance the UK’s energy security, seize the economic opportunities of the transition, and deliver on net zero commitments.
- 4.2.25 Much of the paper is dedicated to outlining strategies for decarbonisation and reducing emissions, and the numerous opportunities for growth within the economy and within industry that this process can create. The UK government hopes to be a driver behind international collaboration and continue as a world leader in the drive towards net zero.
- 4.2.26 A key message within the policy documents is that taking these opportunities requires a bold approach; “the transition to net zero will require action across the whole economy fuelled by rapid deployment of low carbon electricity” (emphasis added).

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<sup>8</sup> <https://www.gov.uk/government/publications/powering-up-britain>

- 4.2.27 Significance is placed on accelerating the deployment of renewables, with the stated goal “to quintuple our solar power by 2035”, with the “need to maximise deployment of both ground and rooftop solar to achieve our overall target”.
- 4.2.28 The Proposed Development would represent a major step towards realising these set goals and aide in the UK remaining at the forefront of renewable energy development.

***Climate Change Committee 2023 Progress Report: Progress in reducing UK emissions***

- 4.2.29 The Climate Change Committee (CCC) published their annual report in June 2023, titled ‘Progress in reducing UK emissions’. The report is highly critical of UK progress towards reaching Net Zero noting in particular a lack of urgency, a lack of coherent strategy, and that planning policy is not fit for purpose in supporting Net Zero.
- 4.2.30 The CCC states that: ‘It is critical that the UK re-establishes its climate leadership with a clearer strategy to develop Net Zero industries and technologies in the UK and capture the economic benefits of Net Zero, with actions that create demand-pull for the critical technologies that will shape the UK’s progress over the next decade.’
- 4.2.31 A key element in delivering Net Zero growth and energy security is the provision of renewable energy to ensure a low carbon electricity network that is net zero by 2035, and reduces our reliance on international fossil fuels. The CCC consider that the UK is still lacking a credible overall strategy for delivering its objective of decarbonising the energy sector by 2035.
- 4.2.32 Table 1 of the CCC Report identifies that Solar PV is the only key indicator against which the UK is ‘*significantly off-track*’ in delivery to deliver net zero energy supply. The CCC Report states that ‘*In 2022, 0.7 GW of solar was deployed. The deployment of solar capacity is significantly off track to meet the Government’s target of 70 GW by 2035. An average annual deployment rate of 4.3 GW is required to deliver 70 GW of solar by 2035.*’
- 4.2.33 The deployment of all other renewable energy technologies is off-track, but it is only solar PV that is significantly off-track. The CCC Report considers that ‘The planning system must have an overarching requirement that all planning decisions must be taken giving full regard to the imperative of Net Zero.’

4.2.34 The deployment of Solar PV is absolutely critical to the meeting of the UK commitments to Net Zero and a resilient secure British energy network.

4.2.35 The Proposed Development is deliverable in the short-term and would make a significant contribution towards decarbonising the energy sector.

***National Planning Policy Framework (2021)***

4.2.36 Support for renewable energy is clearly set out within the NPPF<sup>9</sup> through its presumption in favour of sustainable development. Paragraph 152 of the NPPF states that:

*'The planning system should support the transition to a low carbon future in a changing climate... It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources...; and support renewable and low carbon energy and associated infrastructure.'*

4.2.37 Paragraph 155 of the NPPF states that:

*'To help increase the use and supply of renewable and low carbon energy and heat, plans should:*

- a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);*
- b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and*
- c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.'*

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<sup>9</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1005759/NPPF\\_July\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf)



- 4.2.38 Paragraph 158 of the NPPF identifies that when determining planning applications for renewable and low carbon development, local planning authorities should:

*'not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and approve the application if its impacts are (or can be made) acceptable.'*

- 4.2.39 The NPPF supports the increased deployment of renewable and low carbon energy schemes, and that the planning system should support such development, unless their impacts would be unacceptable in environmental terms.

#### ***National Planning Practice Guidance***

- 4.2.40 On 6th March 2014, the National Planning Practice Guidance (NPPG) web-based resource was launched. The 'renewable and low carbon energy'<sup>10</sup> section of the NPPG at paragraph 001 states that:

*'Increasing the amount of energy from renewable and low carbon technologies will help to make sure the UK has a secure energy supply, reduce greenhouse gas emissions to slow down climate change and stimulate investment in new jobs and businesses. Planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable.' (emphasis added)*

- 4.2.41 The NPPG supports the increased deployment of renewable and low carbon energy schemes, and that the planning system should support such development, unless their impacts would be unacceptable in environmental terms.

#### ***National Policy Statements***

- 4.2.42 An updated Overarching National Policy Statement (NPS) for Energy (EN-1) was published as final in November 2023 and is now awaiting formal designation by Government. The NPS states that:

*Electricity meets a significant proportion of our overall energy needs and our reliance on it will increase as we transition our energy system to deliver our net zero target.*

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<sup>10</sup> <https://www.gov.uk/guidance/renewable-and-low-carbon-energy>

*We need to ensure that there is sufficient electricity to always meet demand; with a margin to accommodate unexpectedly high demand and to mitigate risks such as unexpected plant closures and extreme weather events. (Paragraph 3.3.1)*

*Wind and solar are the lowest cost ways of generating electricity, helping reduce costs and providing a clean and secure source of electricity supply (as they are not reliant on fuel for generation). Our analysis shows that a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar. (Paragraph 3.3.20)*

- 4.2.43 NPS EN-1 designates the generation of nationally significant low carbon energy as ‘**Critical National Priority (CNP) Infrastructure**’, which includes solar. Paragraph 3.3.63 of the NPS states that:

*‘Subject to any legal requirements, the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, **will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy**. Government strongly supports the delivery of CNP Infrastructure and it should be progressed as quickly as possible.’ [emphasis added]*

- 4.2.44 Government state at Paragraph 4.2.15 of the NPS that for CNP Infrastructure where residual impacts “*remain after the mitigation hierarchy has been applied, these **residual impacts are unlikely to outweigh the urgent need for this type of infrastructure**. Therefore, in all but the most exceptional circumstances, it is unlikely that consent will be refused on the basis of these residual impacts. The exception to this presumption of consent are residual impacts onshore and offshore which present an unacceptable risk to, or unacceptable interference with, human health and public safety, defence, irreplaceable habitats or unacceptable risk to the achievement of net zero.*” [emphasis added]

- 4.2.45 Paragraph 4.2.16 of the NPS then goes on to state that:

*“As a result, the Secretary of State will take as the starting point for decision-making that such infrastructure is to be treated as if it has met any tests which are set out within the NPSs, or any other planning policy, which requires a clear outweighing of harm, exceptionality or very special circumstances.”*

- 4.2.46 Paragraph 4.2.17 states that:



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*“This means that the Secretary of State will **take as a starting point that CNP Infrastructure will meet the following, non-exhaustive, list of tests:***

- *where development within a Green Belt requires very special circumstances to justify development;*
- *where development within or outside a Site of Special Scientific Interest (SSSI) requires the benefits (including need) of the development in the location proposed to clearly outweigh both the likely impact on features of the site that make it a SSSI, and any broader impacts on the national network of SSSIs.*
- *where development in nationally designated landscapes requires exceptional circumstances to be demonstrated; and*
- *where substantial harm to or loss of significance to heritage assets should be exceptional or wholly exceptional.”*

4.2.47 Whilst the Proposed Development has a generation capacity of 40MW and therefore does not fall within the Planning Act 2008 regime, the above extracts from the recently published NPS demonstrate the Government’s position on the urgent and critical need to deliver renewable energy generation technology, even in locations where there was previously a presumption against development such as Green Belt or nationally designated landscapes.

4.2.48 The NPS is an important and relevant material consideration for this planning application, and it is considered that the same ‘tilted balance’ should be applied to Town and Country Planning Applications, in that the **critical need** for these schemes should outweigh any residual harm in all but the ‘most exceptional circumstances’.

#### ***Future Energy Scenarios (2023)***

4.2.49 National Grid ESO is the electricity system operator for Great Britain. It owns and operates the electricity transmission infrastructure and must ensure that the power demand is balanced with the supply of electricity across the whole of the UK, on a second by second, real time basis. By way of example, if there is a sudden dip in energy production that coincides with a period of high demand, there is a risk that faults could occur on the transmission or distribution networks causing extensive power outages and /or damage to the network.

4.2.50 To ensure that National Grid ESO can plan for long term changes to the energy market and to respond to Government policy and strategy, annual reports are produced to consider future energy scenarios.

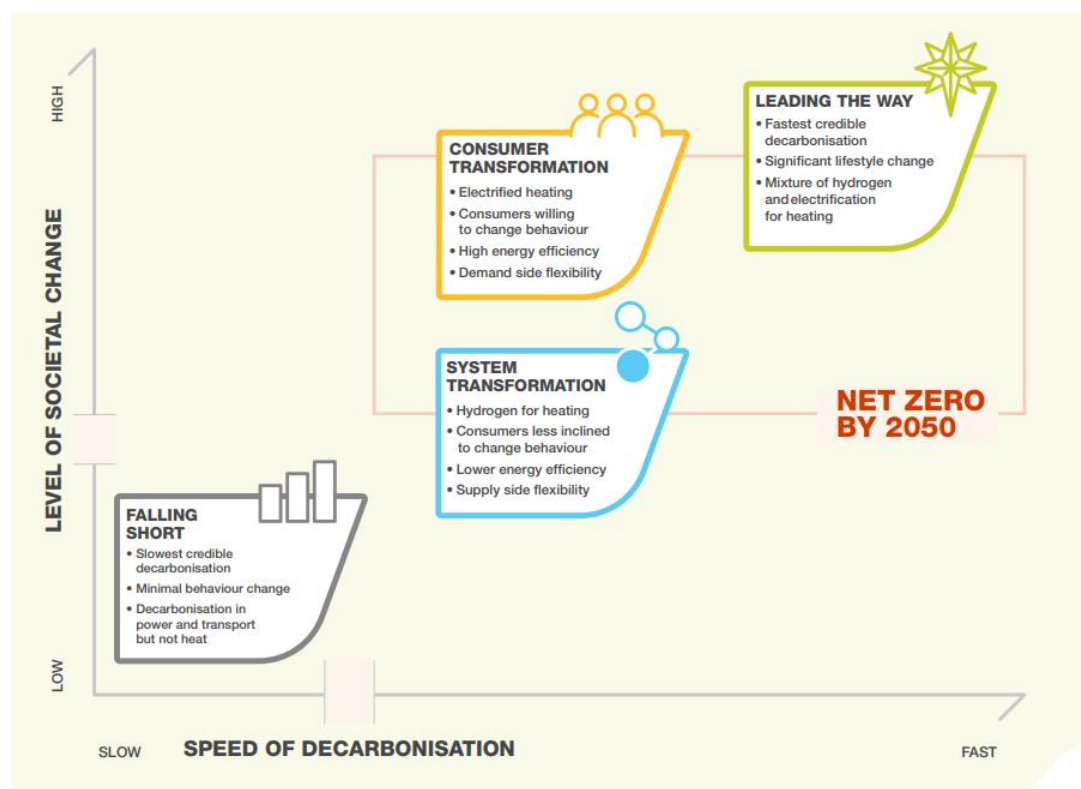
4.2.51 The latest version of the 'Future Energy Scenarios' (FES) document was published in July 2023. The FES considers four possible scenarios based around two drivers: the speed of decarbonisation and the level of societal change.

4.2.52 The four scenarios are:

- i) Falling short
- ii) Consumer Transformation
- iii) System Transformation
- iv) Leading the Way

4.2.53 They are illustrated in Image 2 below.

**Image 2: Future Energy Scenarios: Scenario Matrix**



4.2.54 All scenarios:

- i) are UK wide. The scenarios include regional variations in how the energy landscape could develop, where evidence is available;



- ii) take a whole system view. They explore a future where the different parts of the energy market work together in new ways to maximise efficiency and value for consumers;
  - iii) include a mix of technologies, but show different levels of adoption; and
  - iv) model progress from today to 2050.
- 4.2.55 Consumer Transformation and System Transformation both hit the target of zero emissions in 2050, and Leading the Way achieves the target slightly earlier in 2047. Falling Short would not achieve net zero, with a reduction of 73% compared to the level in 1990.
- 4.2.56 In respect of electricity supply, net zero will require significantly higher levels of electricity generation (approximately 2.8 times more capacity than today). In 2050, it is envisaged that four technologies will produce over 90% of electricity generation: wind, solar, nuclear, and Bioenergy and carbon capture and storage (BECCS). Over the past decade, growth in renewable generation has led to a significant fall in the carbon intensity of electricity supplies in Great Britain. As renewable technologies continue to become cheaper, and more investment is made this trend is expected to continue.
- 4.2.57 In addition to requiring more capacity for electricity generation, it is envisaged that there will be greater decentralisation compared to today, representing up to 42% of generation capacity by 2050. Decentralisation refers to how close production and management of energy is to the end consumer, with closer links between energy supply and demand. The Proposed Development would be a decentralised energy source supplying the local transmission network.
- 4.2.58 In respect of renewable energy, the FES sets out that there is strong policy support for continued growth of wind and solar to drive decarbonisation. Solar capacity projections have increased significantly in the last year which is supported by growth in flexible electricity demand for electrolysis.
- 4.2.59 The FES Data Workbook which accompanies the FES report provides the detailed annual breakdown of solar capacity in gigawatts (GW) for each year up to 2050. The information is summarised below for this year and projects forward to 2030, 2040 and 2050.

**Table 1: NG ESO Solar Capacity by Scenario (GW)**

	2023 (GW)	2030 (GW)	2040 (GW)	2050 (GW)
<b>Consumer Transformation</b>	14.0	30.8	56.4	78.7
<b>System Transformation</b>	14.0	24.8	42.6	56.9
<b>Leading the Way</b>	14.0	41.4	71.3	91.2
<b>Falling Short</b>	14.0	18.7	30.7	42.7

4.2.60 Under all scenarios an increase in solar capacity is required between now and 2030, with further increases after that. Even under the Falling Short scenario an increase of 4.7 GW of capacity is required between now and 2030, but this increases to 10.8 GW for System Transformation, 16.8 GW for Consumer Transformation and 27.4 GW for Leading the Way. Given the legally binding commitment to zero carbon the higher figures are considered more appropriate to use as a reference, especially as Falling Short does not achieve zero carbon.

4.2.61 The Proposed Development, in combination with other large scale solar projects that are starting to come forward through the planning and NSIP processes, are essential to the acceleration of the deployment of solar PV development in the UK. This will enable the UK to achieve its 2030 requirements, en-route to achieving net zero by 2050.

### 4.3 Local Need

4.3.1 Locally, Babergh District Council has made a commitment to try and reach net zero in their own operations by 2030. Whilst this commitment does not extend to a target for achieving net zero across the Borough by 2030, it demonstrates the Council's awareness of the global climate emergency, and that the Council is willing to act to tackle climate change.

4.3.2 Government data for electricity use within Babergh District shows that in 2021 (latest available data) the Borough used a total of 353.2 GWh (gigawatt hours) of electricity, based on sales of electricity made to domestic and non-domestic customers<sup>11</sup>.

<sup>11</sup> <https://www.gov.uk/government/statistics/regional-and-local-authority-electricity-consumption-statistics>

- 4.3.3 The Government has also collated data on the renewable electricity generation of each local authority area in the UK<sup>12</sup>. This demonstrates that in the same year (2021), Babergh District generated only 19.1 GWh of electricity from renewable sources, or approximately 5.4% of the Borough's total electricity need.
- 4.3.4 Considering the above data, Babergh District's deficit in renewable electricity generation as of 2021 was 334.1 GWh. If Babergh District Council are serious about their commitment to tackling climate change and supporting net zero targets then this significant deficit needs to be reduced as quickly as possible.
- 4.3.5 There are national requirements to achieve net zero in energy by 2035, and whilst these do not extend to statutory local requirements for each Local Authority to reach net zero in its own renewable energy generation and usage, it is important to consider that unlike with fossil fuel generating facilities, renewable energy facilities need a greater level of distribution across the National Grid transmission network due to the land required to achieve similar generation capacities.
- 4.3.6 With reference to FES 2023, it is reasonable to assume that over time Babergh District's reliance on electricity as an energy source will increase as the use of fossil fuels are phased out for heating and transport. Therefore, whilst the above data is based on the District's recent position, the actual demand for electricity will significantly increase over the next few decades, and this electricity will need to come from renewable sources.
- 4.3.7 Assuming that solar arrays generate approximately 1,083 MWh per annum for each MW of installed capacity<sup>13</sup>, the Proposed Development would contribute approximately 43.3 GWh of renewable energy per annum, meeting approximately 12.2% of Babergh District's need and bringing the theoretical total generation from renewable facilities to approximately 17.6%.
- 4.3.8 If Babergh District was to meet the remainder of its renewable energy deficit in solar development this would be the equivalent of approximately 7 solar farms of the same scale as the Proposed Development.

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<sup>12</sup> <https://www.gov.uk/government/statistics/regional-renewable-statistics>

<sup>13</sup> Assumes 1,083 MWh per annum for each MW of installed capacity. Calculated using the internal algorithms of the simulation software PVsyst (Version 7.2).

4.3.9 The reasonable alternatives to solar in renewable energy generation for the District are:

- Onshore wind;
- Offshore wind;
- Sewage gas;
- Municipal solid waste;
- Animal biomass; and
- Plant biomass.

4.3.10 Clearly the only source from the above list other than solar which could be scaled-up significantly to meet the District's electricity need through renewable energy is onshore or offshore wind. This would not be without its own landscape and visual impacts, as wind turbines are prominent features in the landscape that are often widely visible from a significant area. In addition, issues with onshore wind such as shadow flicker make it unsuitable for siting close to many residential areas, and therefore the potential locations within the District where it could be sited are significantly more limited than solar, regardless of the de-facto moratorium on onshore wind set out in the NPPF. It is therefore likely that for Babergh District to increase renewable energy generation, they will need to focus heavily on solar generation.

4.3.11 The Applicant has secured a grid connection offer from National Grid for a 40 MW solar farm to the local transmission network. The availability of this grid connection and the immediate deliverability of the Proposed Development in the context of the urgent local, regional and national need should be given very substantial weight in the planning balance.

4.3.12 The Proposed Development would typically generate around 43.3 GWh of renewable electricity per annum. With reference to the subnational electricity consumption statistics for Great Britain, the mean domestic consumption per household in Rochford District is 4,424 kWh<sup>14</sup> (approximately 20% above the national average).

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<sup>14</sup> <https://www.gov.uk/government/statistics/regional-and-local-authority-electricity-consumption-statistics>

The Proposed Development would therefore theoretically supply up to 9,786 houses in the District, equivalent to approximately 28% of existing houses<sup>15</sup>.

#### **4.4 Conclusion**

4.4.1 There is no Government policy that requires, as a matter of general principle, applicants to demonstrate that there is a need for their renewable energy development. However, it is widely recognised that the need for a particular scheme may be a material planning consideration to be weighed in the planning balance against possible policy tension. This position is further reinforced by the recently published National Policy Statements for Energy which identify solar as Critical National Priority Infrastructure.

4.4.2 It is explicit from the above considerations that at a strategic level there is significant policy support for renewable energy development. The Government has a target to deliver 70 GW of solar energy generation by 2035, compared to approximately 14 GW of installed capacity at present, and there is a clear expectation that solar power will provide a significant contribution to the achievement of the legally binding net zero target by 2050 and the UK electricity system achieving zero carbon emissions by 2035, as set out in the Sixth Carbon Budget and Net Zero Strategy.

4.4.3 It is also clear that to achieve the net zero target by 2050, and a decarbonised electricity system by 2035 action is required now to deliver the planning consents necessary for these mid and long-term goals. Whilst 2050 is almost 30 years away, National Grid ESO forecast that significant solar PV development will be required to remain on the correct trajectory for achieving net zero by 2050. Even these measures may not be ambitious enough considering the most recent announcements by the UK government. The Proposed Development would make a notable contribution to achieving the anticipated requirement for solar PV in advance of 2035 and this should be given considerable weight in the decision-making process.

4.4.4 In conclusion, there is a demonstrable need for the Proposed Development and the significant environmental, economic and social benefits it would deliver.

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<sup>15</sup> <https://www.gov.uk/government/statistics/regional-renewable-statistics>

4.4.5 A full consideration of other relevant planning policy and other material considerations is provided within Section 5 below.



## **5.0 ENVIRONMENTAL CONSIDERATIONS**

### **5.1 Introduction**

5.1.1 Technical assessments have been undertaken to understand the potential impacts of the Proposed Development in relation to landscape and visual, ecology, cultural heritage and archaeology, flood risk and drainage, noise and vibration, traffic and transportation, arboriculture, glint and glare and agricultural land. The findings of these assessments are summarised below and provided at Appendices B-K to this Planning, Design and Access Statement.

### **5.2 Landscape and Visual Impact**

5.2.1 A Landscape and Visual Impact Assessment (LVIA) has been prepared and is submitted as Appendix B to this PDAS, along with its supporting appendices. The conclusions of the assessment are provided below.

5.2.2 The landscape and visual effects of the Proposed Development have been assessed in accordance with good practice guidance set out in the third edition of Guidelines for Landscape and Visual Impact Assessment. The assessment has been undertaken over a study area extending up to approximately 1km from the Site, and is supported by visualisation material, including ZTV mapping and photomontages.

5.2.3 The landscape character of the study area has been reviewed at various scales from a national level down to a parish level.

5.2.4 The landscape of the study area is characterised by its predominantly flat topography either side of a narrow valley, with arable fields interspersed with areas of woodland and mature hedgerows and hedgerow trees that create a sense of enclosure and wooded backdrop to views. Settlement is dispersed along narrow winding lanes with individual or small groups of vernacular and occasionally listed buildings. Remnant parkland in the north of the study area is associated with the grounds of Bentley Park, Bentley Hall and Bentley Manor. There has been a decline in hedgerow cover across the central part of the study area (which includes the Site) which has reduced the small-scale pasture of the historic landscape and resulted in a larger-scale open arable field pattern. The landscape is generally tranquil but with a reduction in proximity to the railway line and overhead pylons.



- 5.2.5 Views within the study area are mostly intermittent and sequential along roads and footpaths through gaps in hedgerows. There are no long-distance views across the study area, with views contained across arable fields towards wooded backdrops.
- 5.2.6 There are few local visual landmarks in the study area due to the extent of enclosure. There do not appear to be any designed vistas towards locally important buildings that would also include the Site. The Site is not within any important views identified at a district or parish level in the Neighbourhood Plan.
- 5.2.7 The LVIA has found that there would be short-term minor to negligible adverse effects on the landscape fabric of the Main Site in relation to loss of farmland and removal of short sections of hedgerow. In the long-term the effect on landscape fabric would remain minor adverse through the change in land use from farmland, but the effect on hedgerows and hedgerow trees would transition to major to moderate beneficial as the proposed planting establishes. This would accord with published landscape guidelines to restore these elements of landscape fabric.
- 5.2.8 At the Substation Site, there would be short-term major to moderate effects on landscape fabric due to the removal of two trees which would affect the woodland mosaic to the south of the Substation Site. There would also be moderate to minor adverse effects in relation to a change in landform at the Substation Site. In the long-term the effect would remain moderate adverse as a result of the loss of the trees during construction, but the effect would reduce from the short-term as proposed replacement planting and additional planting around the DNO substation establishes and provides a degree of enhancement to this area. The effect on landform would remain moderate to minor adverse.
- 5.2.9 In relation to landscape character, the Proposed Development would result in short-term landscape effects ranging from major/moderate adverse to moderate adverse. This would be as a result of the change in land use across part of the Site from arable field to solar electricity generation, and the introduction of solar panels, associated infrastructure, perimeter fencing and new boundary planting. Solar developments are perceived as being of a utilitarian appearance and therefore the increase in the perception of utilitarian development would have a degrading influence at a localised level.
- 5.2.10 In the medium- and long-term the proposed planting would provide a greater level of landscape integration and visual screening such that the Proposed Development



- would sit within an established landscape framework and would be of very limited visibility. The landscape effects would reduce to moderate/minor adverse and minor adverse.
- 5.2.11 The landscape effects resultant from the solar development are temporary, but over a long period of time. At the point of decommissioning the Proposed Development can be removed and the landscape restored, albeit with the permanent beneficial change resulting from the proposed landscaping.
- 5.2.12 The visual effects resulting from the Proposed Development would be experienced over a highly localised area in very close proximity to the Proposed Development. This is as a result of the pattern of landform and mature vegetation in the landscape, such that clear visibility of the solar arrays and associated infrastructure would be relatively restricted due to their low height.
- 5.2.13 The greatest level of effects will be experienced from intermittent locations in close proximity to the Site boundary. For the Main Site this includes upper floors of several residential properties along the northern and southern boundaries, as well as gaps in hedgerow vegetation along parts of Church Lane, Potash Lane, and the bridleway (FP 65) to the west. For the Substation Site this includes upper floors of Maltings House and the public footpath north of the proposed DNO substation (FP 18).
- 5.2.14 Away from the Site boundary the extent of mature vegetation and the underlying landform generally provide effective screening of the Site, as demonstrated by the number of viewpoints within the study area where there is no or very limited visibility of the Proposed Development.
- 5.2.15 Overall, in the long-term there would be no unacceptable adverse landscape or visual effects resulting from the Proposed Development.

### **5.3 Ecology and Nature Conservation**

- 5.3.1 An Ecological Assessment Report (EAR) has been prepared and is submitted as Appendix C of this PDAS, along with its supporting appendices. The conclusions of the assessment are summarised below.
- 5.3.2 Consideration of ecological impacts and subsequent effects arising from the Proposed Development has been undertaken with reference to the Chartered

Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018).

### ***Ecology Surveys***

- 5.3.3 An extended habitat survey was undertaken on 28th February and 1st March 2023 by K. Ward MSc, a suitably experienced and qualified ecologist. The survey followed UK industry standard UKHab Methodology with reference to the CIEEM, guidance (2017). The DNO substation area and associated access routes was subject to survey at a later date of 23rd May 2023 by R. Kilshaw, a suitably experienced and qualified ecologist.
- 5.3.4 Breeding Bird Surveys were undertaken in April, May, and June 2022 by Mr J. Hanlon BSc (Hons), an experienced ornithologist. The survey area comprised the main solar array area as shown within the Breeding Bird Survey Report at Appendix 2 of the EAR.
- 5.3.5 Wintering Bird Surveys were undertaken between October 2022 and April 2023 by Mr J Hanlon BSc (Hons), with a total of six visits made adopting the 'look-see' methodology. The survey area comprised the main solar array area plus a 250m buffer where access allowed, as shown within the Wintering Bird Survey Report at Appendix 3 of the EAR.

### ***Designated Sites***

- 5.3.6 The Site does not form part of any statutory designated site for nature conservation. The closest designated site is the Freston and Cutler's Wood with Holbrook Park SSSI approximately 2km to the east. The closest internationally designated sites are associated with the Stour Estuary approximately 4.1km to the south.
- 5.3.7 Overall, nine statutory designated sites are located within 5km of the Site and two internationally designated sites located within 10km.
- 5.3.8 All the statutory sites are designated for notable habitats of interest other than the Stour Estuary SSSI which is designated for 13 notable wintering bird species, and Bobbitshole Blestead SSSI which is designated for geological reasons (and is therefore discounted). The Stour and Orwell Estuaries SPA and Ramsar is designated for notable wintering and breeding bird assemblages which could potentially utilise the arable habitats present within the Survey Area.

- 5.3.9 Wintering bird surveys undertaken in support of the Proposed Development indicate that the Site showed very low usage by target wintering bird species, with no use by species for which the Stour and Orwell Estuaries SPA and Ramsar is designated for. It is therefore considered that the loss of arable habitats within the Site will not adversely impact wintering bird species associated with the Stour and Orwell Estuaries SPA and Ramsar site.
- 5.3.10 Therefore, due to the absence of any functional linkage to the Stour and Orwell Estuaries SPA and Ramsar, and considering the physical separation of the site from any statutory designated sites and best practice measures to be employed, no direct or indirect effects are anticipated to statutory designated sites as a result of the Proposed Development. Subsequently there is no pathway for likely significant effect (LSE) on the Stour Estuary SPA.
- 5.3.11 Overall, nineteen non-statutory designated sites are present within 2km of the Site, with Engry Woods County Nature Reserve (CNR) located adjacent to the Site's northern boundary.
- 5.3.12 Prior to the onset of construction suitable protection measures will be implemented to ensure no encroachment to adjacent habitats.
- 5.3.13 Taking into account the physical protection measures implemented to protect Engry Woods CNR, as well as the physical separation from other sites and best practice measures to be implemented, adverse impacts are not anticipated to non-statutory designated sites as a result of the Proposed Development.
- 5.3.14 A managed rewilding area has been proposed into which Engry Woods would be allowed to naturally expand, expanding availability of woodland edge habitats.

### ***Habitats***

- 5.3.15 The arboricultural survey identified two veteran trees, two ancient trees and four notable trees within or immediately adjacent to the Site. Additionally, Engry Woods ancient woodland is located adjacent the northern boundary of the Site.
- 5.3.16 The Proposed development layout avoids impacts to field boundaries and adjacent habitats, and includes suitable offsets to avoid impacts to all ancient woodland, ancient, veteran and notable trees.

- 5.3.17 The Survey Area is dominated by arable fields with a small area of modified grassland and a number of hedgerows and line of trees. The dominant arable fields and small area of modified grassland are considered to be of low ecological value. The hedgerows, line of trees provide higher biodiversity value at a local scale.
- 5.3.18 The Proposed Development has been designed to minimise hedgerow removal as far as practicable, however the removal of approximately 5m of hedgerow on Church Road will be required to facilitate the creation of a new Site access.
- 5.3.19 To further protect off-site habitat, standard measures to ensure runoff control and pollution prevention (such as dust mitigation measures) will be implemented; these measures will safeguard habitats within the Proposed Development and wider area. These will be detailed within a CEMP to be secured by condition.
- 5.3.20 The Proposed Development includes extensive landscaping proposals with large areas of species diverse grassland, low-intensity grazing pasture, a rewilding area to expand the Engry Woods edge habitat and woodland and hedgerow creation. It is anticipated that these created habitats will be of a greater value to biodiversity and support a greater abundance and diversity of species than the low value agricultural habitats currently present.

### ***Protected and Notable Species***

#### ***Breeding Birds***

- 5.3.21 Breeding bird species were typically associated with field boundary features which be largely retained and protected throughout construction and operation of the Proposed Development. A small section of hedgerow approximately 5m in width is required to be removed to permit access from Church Lane.
- 5.3.22 The Proposed Development includes extensive hedgerow planting which, along with the proposed managed natural expansion of Engry Woods, will provide additional nesting habitat for a range of breeding bird species. Hedgerow species will be selected to include a range of fruit bearing species, which alongside other habitat creation proposals considered likely to increase invertebrate diversity will provide enhanced foraging for a range of common bird species.
- 5.3.23 A single territory each of skylark and yellow wagtail was noted within the Site. Both species are ground nesting species requiring open ground and have the potential to



be adversely affected by the more enclosed conditions created through the placement of solar arrays.

- 5.3.24 Overall, given extensive landscape proposals, low numbers of ground nesting species and minimal vegetation clearance required, it is considered that the proposed development is likely to be beneficial to most breeding bird species.

#### *Non-Breeding Birds*

- 5.3.25 Low numbers of non-breeding waterbirds were observed within the Site and therefore the loss of arable land which is abundant in the wider area is considered unlikely to have an adverse effect on local non-breeding bird populations of any species.

#### *Bats*

- 5.3.26 No buildings were located within the Site; however several trees located within the field boundaries were assessed to have high bat roost potential, along with trees in the adjacent Engry woodland which were also assessed to offer bat roost potential. The trees within the hedgerow boundary and the adjacent woodlands are unaffected by the Proposed Development and will be retained and protected during construction. With the exception of minor hedgerow removal of approximately 5m required along Church Road to facilitate Site access, all existing hedgerows will be retained and protected during construction.
- 5.3.27 Any lighting used during construction of the Proposed development will be directed away from trees offering bat roost potential to ensure no disturbance to bats potentially utilising these trees.
- 5.3.28 Two trees are currently proposed to be affected by the development adjacent to the point of connection, however these trees were not found to have bat roost potential. Suitable checks for roosting bats will be undertaken in advance of any pruning works/tree removal. If bats are confirmed to be roosting within any tree to be impacted, the data gathered would be used to support a licence application to Natural England to destroy/disturb the bat roost.
- 5.3.29 Overall, no impacts to roosting bats are anticipated as a result of the Proposed Development.

- 5.3.30 Arable and pastoral grassland habitat present within the site offer low suitable foraging and commuting habitat, however field boundary features and adjacent woodland habitats offer greater potential.
- 5.3.31 With the exception of minor hedgerow removal measuring approximately 5m in width required to facilitate Site access from Church Road, hedgerows and the line of trees within the Survey Area will be retained. It is therefore considered that there would be no loss of foraging opportunities or disruption to bat commuting routes.
- 5.3.32 The Proposed Development includes extensive habitat creation of benefit to foraging and commuting bats, including the creation of permanent grassland and meadow areas, hedgerow creation and the managed extension of woodland edge habitats at Engry Woods. It is considered that the scheme would result in enhanced foraging and commuting habitat for bats.
- 5.3.33 Overall, no adverse impacts to foraging or commuting bats are anticipated as a result of the Proposed Development.

#### *Badger*

- 5.3.34 No setts were identified within or immediately adjacent to the Site. Evidence of badger activity in the form of snuffle holes were recorded on Site, indicating that badgers are present and are likely to visit and move through the Site.
- 5.3.35 Based on the evidence gathered during the extended habitat survey, construction of the Proposed Development will not result in disturbance or destruction of any badger sett or obstruct access to setts. Once constructed, the Proposed Development will not sever potential commuting routes used by badgers, with linear features such as hedgerows and ditches to be retained and protected as part of the proposed development. Gaps or mammal gates will be installed at suitable intervals and locations along the perimeter fence line to allow badgers and other small mammals free movement into and out of the Site, providing enhanced opportunities for foraging and refuge within what will be a relatively protected and undisturbed area. This will ensure continued habitat connectivity to the wider environment.
- 5.3.36 Due to the highly mobile nature of badgers, a pre-construction badger check is recommended to confirm the continued absence of badger setts within and adjacent to the Proposed Development area before commencement of works. If a sett is

found, suitable advice will be sought from the project ecologist to ensure necessary protection, avoidance or mitigation measures are in place before works proceed.

- 5.3.37 Taking into account the above measures, no impacts to badger are anticipated as a result of the Proposed Development.

#### *Hazel Dormouse*

- 5.3.38 While hedgerows are relatively species poor, hazel dormouse are known to be present in the adjacent Engry Woods CNR and so it is considered likely that hazel dormouse are present within hedgerows bounding the Site. With the exception of minor removal of approximately 5m of hedgerow required to facilitate Site access from Church Lane, all hedgerows will be retained and protected throughout construction and operation of the Proposed Development. As a precautionary measure, Reasonable Avoidance Measures (RAMs) will be implemented during the construction phase to safeguard individual animals during works.

- 5.3.39 Extensive hedgerow creation is proposed within the Site which would serve to enhance the Site for hazel dormouse. Hedgerows would be planted with species of value to hazel dormouse including hazel, honeysuckle, hawthorn and dog rose. Tree species will include oak and sweet chestnut.

- 5.3.40 Additionally, Engry Woods will be allowed to naturally expand through managed rewilding to expand woodland edge habitat available to dormouse populations within the woods.

- 5.3.41 Taking into account the above measures, no adverse impacts to dormouse are anticipated as a result of the Proposed Development.

#### *Amphibians and Reptiles*

- 5.3.42 No ponds are present within the Site; however, a review of OS maps and aerial images identified twelve ponds located within 250m of the Site.

- 5.3.43 The arable farmland within the Site offers negligible opportunities for amphibians (foraging/ hibernation) and reptiles, however, field boundary features, such as hedgerows, line of trees, field margins and adjacent woodland provide suitable foraging habitat and cover for amphibians and reptiles.

- 5.3.44 Construction of the solar farm requires very low levels of direct land take (typically less than 5% footprint on the ground) for the infrastructure which will be located entirely in sub-optimal arable habitats. More suitable habitats, including hedgerows will be retained and protected throughout works with only minor removal required. As a precautionary measure, Reasonable Avoidance Measures (RAMs) will be implemented prior to and during the construction phase to safeguard amphibians and reptiles during works.
- 5.3.45 Following construction, it is considered that the proposed landscape design would provide enhanced habitat for amphibians and reptiles through the creation of extensive hedgerows, woodland edge, meadow grassland and permanent low-intensity grazing pasture. The Proposed Development would not obstruct the movement of amphibians or reptiles through the landscape with the land between and beneath the panels remaining available for use as shelter.
- 5.3.46 Taking into account the above measures no adverse effects to Great Crested Newts, other amphibians, or reptiles are anticipated as a result of the Proposed development.

#### *Other Species*

- 5.3.47 The Site may potentially support brown hare and European hedgehog.
- 5.3.48 The habitats in the Site are typical of habitats in the wider environment, and therefore the loss of suitable arable foraging habitat as a result of the Proposed Development is not considered to negatively impact local populations of these species.
- 5.3.49 In addition, meadow grassland will be created that is considered to provide higher value habitat for brown hare. Hedgehog would benefit from the creation of hedgerow within in the site and the managed natural expansion of Enry Woods.

#### ***Biodiversity Net Gain***

- 5.3.50 A biodiversity net gain (BNG) assessment has been undertaken in line with current best practice guidance, using the DEFRA Biodiversity Metric 4.0. The Biodiversity Metric is presented at Appendix 4 of the EAR.
- 5.3.51 The baseline habitats across the Site are generally of low distinctiveness with higher value habitats retained.



5.3.52 In relation to the national BNG target of +10%, the Proposed Development achieves a BNG of +106.54% for area-based habitat units, and +102.65% for linear-derived units.

### ***Conclusion***

5.3.53 The Proposed Development would not result in any unacceptable impacts on designated sites for nature conservation, habitats, or protected species but would result in a substantial biodiversity net gain across the Site.

## **5.4 Cultural Heritage and Archaeology**

5.4.1 A Heritage Impact Assessment (HIA) has been prepared and is submitted as Appendix D of this PDAS, along with its supporting appendices. The conclusions of the assessment are summarised below.

5.4.2 Although numerous finds from all periods have been recovered across the 1km Study Area, there is a concentration recorded in the eastern part of the Study Area, in proximity to Alton Water. As such there is a potential for stray finds of all periods to survive within the Site.

5.4.3 This assessment has identified a Low potential for prehistoric, Roman, early-medieval and medieval archaeological features and buried remains to be present within the Site. Due to the aforementioned volume of prehistoric finds recorded within the 1km Study Area, there is judged to be a High potential for prehistoric finds to be recovered across the Site. There is considered to be a Medium potential for Roman finds to be recovered across the Site and a Low potential for recovering finds of a medieval date.

5.4.4 Based on cartographic evidence, the Site is considered to have been in agricultural use during the post-medieval and modern periods, at least from 1838. As such there is judged to be a High potential for post-medieval and modern agricultural remains to survive within the Site. There is judged to be a Low potential for all other remains to be present.

5.4.5 The NPPF states that a local planning authority should require developers to 'record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact' (DLUHC 2023, Para 205). As such, it is advised that mitigation measures should take



into account the relatively minimal impact of the Proposed Development. The Proposed Development would spread the weight of the panels evenly across the array's footprint. The predicted impacts on archaeological remains resulting from the Proposed Development therefore stands in marked contrast to other forms of greenfield development, such as mineral extraction, which is wholly destructive, and housing developments, which are largely, if not wholly, destructive.

- 5.4.6 In line with national and local planning policy and given the limited potential for archaeological remains to survive on the Site, it is recommended that a programme of archaeological works may be required across the Site in advance of construction by planning condition. This will enable a better understanding of the archaeological potential of the Site, the extent of any previous plough damage and the characterisation and dating of any surviving buried archaeological remains. In the case that significant archaeological remains were encountered further archaeological mitigation, including avoidance by design of the Proposed Development may be required. Any archaeological works will be agreed with Suffolk County Council Archaeological Service (SCCAS), who provide archaeological advice to Babergh District Council and the Babergh Heritage Service Team at Babergh District Council prior to mitigation being undertaken.
- 5.4.7 Site visits undertaken for this assessment suggest that the Proposed Development would not be clearly visible from most of the designated heritage assets and buildings of local significance within the surrounding area and, consequently there would be no effects upon their setting.
- 5.4.8 Potential Low effects upon the settings of the Grade II\* Listed Church of St Mary and Maltings House have been identified in the HIA.
- 5.4.9 Neutral effects upon the settings of the Grade I Listed Bentley Hall Barn, and the Grade II\* Listed Bentley Hall and its adjacent Meeting Hall Stables have been identified in the HIA.
- 5.4.10 Six buildings of local significance have also been assessed to have potential effects upon their settings. These include a Neutral effect upon the settings of Little House, Bentley House, Glebe Cottage and Uplands Farmhouse, a potential Low effect upon the setting on Falstaff manor and a potential Medium effect upon the setting of Red Cottages and Potash Cottages. For all of the above these effects will cause levels of harm considered to be less than substantial.

- 5.4.11 The assessment concludes that the Proposed Development is likely to cause less than substantial harm to the settings heritage assets in terms of the NPPF.
- 5.4.12 An Archaeological Geophysical Survey Report has also been prepared in support of the planning application and is contained within Appendix E of this PDAS.
- 5.4.13 The archaeological geophysical survey has not identified any substantial remains of a definitive archaeological nature.

## **5.5 Flood Risk and Drainage**

- 5.5.1 A Flood Risk Assessment and Drainage Strategy has been prepared and is submitted as Appendix F of this PDAS, along with its supporting appendices. The conclusions of the assessment are summarised below.
- 5.5.2 The EA 'Flood Map for Planning' shows that the majority of the site, including the location of the proposed solar arrays and grid connection compound, is located within Flood Zone 1 - an area outside of the extreme flood extent, considered to have a less than 0.1% annual probability of flooding from rivers or the sea. A small area in the eastern extent of the site is located within Flood Zone 3 – an area considered to be at flood risk with a 1% (1 in 100) or greater annual probability of flooding. However, all developable areas of the site are located within Flood Zone 1.
- 5.5.3 It can be concluded that the risk of flooding from all sources to the majority of the site is very low. A small area within the northern extent of the solar farm site is shown at surface water risk. However, the solar arrays will be situated on ram mounted posts (ensuring that water can pass underneath the panels freely) with no inverters or equipment susceptible to flood damage located within the surface water flood extent. Therefore, no site-specific mitigation measures for the solar arrays are considered necessary.
- 5.5.4 The location of the proposed grid connection compound is shown at risk of surface water flooding. Online EA flood depth mapping shows that flood depths during the low risk (0.1% annual probability) event are generally low and less than 150mm. Flood depths of up to 600mm are estimated in an isolated topographical low point. The flood risk will be mitigated by levelling the site (removing isolated low points) and raising the height of any equipment and buildings within the grid connection compound a minimum of 300mm above surrounding ground levels.



- 5.5.5 The proposed solar arrays will not significantly alter the existing surface water regime. Swales or filter drains will be placed at regular intervals (every 5th row) between the rows of solar panels to intercept overland flow, encourage infiltration and act as a form of erosion control. The access road and compounds will comprise permeable material allowing surface water to infiltrate into the ground.
- 5.5.6 To further ensure erosion control, a planting regime comprising hedgerows, woodlands, pasture and grassland is also proposed.
- 5.5.7 The Proposed Development would therefore not result in unacceptable impacts to flood risk or surface water run-off.

## 5.6 Noise and Vibration

- 5.6.1 A Noise and Vibration Assessment has been prepared and is submitted as Appendix G of this PDAS, along with its supporting appendices. The conclusions of the assessment are summarised below.
- 5.6.2 The proposed solar photovoltaic (PV) farm installation, has been assessed in terms of noise impact during maximum operational conditions. This report has been undertaken to provide technical support to the planning application for the development.
- 5.6.3 The results of baseline noise monitoring over a weekend monitoring period at five locations (in areas representing typical background sound levels) indicate that the representative background sound levels vary between 32dB to 35dB  $L_{A90}$  (with ambient  $L_{Aeq}$  levels ranging between 44dB to 46dB) during the daytime and 30dB to 33dB  $L_{A90}$  (with ambient  $L_{Aeq}$  levels ranging between 39dB to 44dB) during the sunrise period.
- 5.6.4 In order to ensure protection of amenity and to maintain levels that are well below sleep disturbance absolute criteria, it has been proposed that during daytime and sunrise periods the rating level should not exceed the representative background sound level +3dB at noise sensitive receptors (NSRs).
- 5.6.5 The predicted noise contribution from the application site using ISO9613-2 methodology and CadnaA noise modelling software shows noise levels from the Site to range between 24dB and 32dB  $L_{Aeq15mins}$  during maximum site operations at NSRs.

- 5.6.6 The results show that the noise contribution from maximum site operations at NSRs would not produce any adverse impacts.
- 5.6.7 According to BS4142: 2014+A1:2019 the resultant assessment during daytime and sunrise operating periods would conclude that noise from the site would result in a low impact at NSRs.
- 5.6.8 For sunrise periods, the absolute noise levels generated by the solar farm are well below sleep disturbance criteria (i.e. WHO guidelines of an external level of 40dB  $L_{Aeq,8hrs}$  and internal bedroom guidance levels of 30dB  $L_{Aeq,8hrs}$  according to BS8233:2014). Predicted levels within bedrooms with an open window would be between 9dB and 17dB  $L_{Aeq}$ . This level is significantly lower than WHO guidance and limits provided within BS8233: 2014 for sleeping conditions within bedrooms (i.e. 30dB  $L_{Aeq,8hrs}$ ).
- 5.6.9 The results show that the site noise contribution at NSRs during sunrise operating periods would be well below typical residual sound levels of 39dB to 44dB  $L_{Aeq}$  established during the baseline study survey.
- 5.6.10 The assessment concludes that the site has been designed to operate such that it complies with all appropriate and relevant noise standards and guidance.

## 5.7 Traffic and Transport

- 5.7.1 A Transport Statement (TS) has been prepared and is submitted as Appendix H of this PDAS, along with its supporting appendices. The conclusions of the assessment are summarised below.
- 5.7.2 Analysis of accident data indicates that 4no. accidents have occurred within the vicinity of the Site during the assessed period, 3 of which resulted in 'slight' injury and 1 which resulted in 'severe' injury. Therefore, the existing accident record does not present a material concern in the context of the Proposed Development.
- 5.7.3 A robust construction routing and access plan has been provided which sets out the approach to receiving construction related HGV traffic at the site. The plan provides details of the proposed access arrangements, which include junction geometries, visibility splays and swept path analysis.
- 5.7.4 The visibility of each access junction has been provided in accordance with the preapplication advice provided by the LHA and it is considered that sufficient visibility

- will be provided to accommodate all manoeuvres safely. Swept path analysis demonstrates that each access will be able to accommodate the largest vehicle that will require access to the site (an 18m long low loader).
- 5.7.5 Solar farms such as the one proposed require only minimal maintenance over their operational life. Operational traffic will be limited to occasional visits to undertake any checks, maintenance and adjustments to infrastructure as required. This is likely to be limited to no more than 1 or 2 no. visits per month in a van or similar vehicle.
- 5.7.6 The traffic generating potential of the Proposed Development during the construction phase has been estimated for the main solar site and the proposed substation separately.
- 5.7.7 During the peak construction period for the main site (weeks 1 – 8) the Proposed Development could be expected to generate approximately 6 two-way trips per hour on average during weekdays. This equates to 1 additional vehicle movement every 10 minutes.
- 5.7.8 During the peak construction period for the substation (weeks 24 – 26) the Proposed Development could be expected to generate approximately 2 two-way trips per hour on average during weekdays. This equates to 1 additional vehicle movement every 30 minutes.
- 5.7.9 Overall, it is considered that the peak traffic generating potential of the Proposed Development during the construction phase will not result in any material impact on the free flow of traffic or highway safety in the surrounding highway network. It should also be reiterated here that this level of trip generation is temporary in nature and any trips to the Site, once operational, would be limited to the occasional LGV for maintenance purposes, on average once a month and de minimus in nature.
- 5.7.10 Paragraph 111 of the NPPF states that:
- “Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe”.*
- 5.7.11 Based on the evidence presented in this TS, no unacceptable impact would be created by the Proposed Development.

## **5.8 Arboriculture**

- 5.8.1 An Arboricultural Impact Assessment (AIA) has been prepared and is submitted as Appendix I to this PDAS. The conclusions of this assessment are summarised as follows.
- 5.8.2 The tree surveys identified a total of 164 features consisting of 121 individual trees, 32 groups of trees, ten hedgerows and one woodland which have the potential to be impacted upon by the proposed development of the site. In line with the recommendations contained within Table 1 of BS5837:2012, 21 features were awarded a high-quality A grade status, 53 features were awarded a moderate-quality B grade, 79 were awarded a low-quality C grade and 11 features were awarded a very low-quality U grade and recommend for removal.
- 5.8.3 A search of Babergh Mid Suffolk District Council's interactive mapping on 30th May 2023 established that the site does not sit within a Conservation Area (CA), and it also confirmed that there are two Tree Preservation Orders (TPOs) within the village of Potash (TPO refs: BT244/T1 and BT379/G1). Neither of these TPOs shall be impacted upon by the Proposed Development.
- 5.8.4 Additionally, the search also confirmed that there is an ancient woodland located to the north-east of the wider site, known as Engry Wood. The site boundary has been offset from the ancient woodland and has a buffer zone within the agricultural field to the east, therefore the development will not impact this ancient woodland.
- 5.8.5 An A grade tree (T23) and B grade tree (T22) shall require removal for the purposes of the installation of the overhead pylon cable between the DNO Substation and the pylon. The removal of these two trees cannot be avoided due to their close position adjacent to the pylon.
- 5.8.6 All other trees would be retained on Site, with protective measures adopted during the construction process to avoid impacts.
- 5.8.7 The landscape proposals detail three areas where woodland belts will be planted. The locations include an area surrounding the pylon, a strip of land along Potash Lane adjacent to the site entrance, and an area which will connect two existing woodland blocks in the north-west aspect of the wider site. These proposals will assist in screening the development from public vantage points and increasing tree cover within the site. In addition to this, the proposals will actively manage the buffer

zone of the ancient woodland, allowing it to naturally rewild to increase the woodland edge, and will also plant within existing hedgerow gaps to increase screening.

5.8.8 The adoption of these proposals will sufficiently compensate for the removal of features T22 and T23.

5.8.9 The proposed development of the site can be successfully achieved without causing undue harm to those trees identified for retention.

## **5.9 Glint and Glare**

5.9.1 A Glint and Glare Assessment has been prepared and is submitted as Appendix J to this PDAS.

5.9.2 The Glint and Glare Assessment concludes that due to the existing screening and / or proposed screening in the landscape, there would be no significant glint and glare impacts that require mitigation or further consideration.

5.9.3 There are there no unacceptable glint and glare impacts predicted as a result of the Proposed Development.

## **5.10 Agricultural Land**

5.10.1 An Agricultural Land Classification (ALC) survey has been prepared and is submitted as Appendix K to this PDAS.

5.10.2 The ALC survey identified that soil droughtiness is the key limiting factor across the Site. The survey found that the Site comprises Grades 2, 3a and 3b agricultural land, and is predominantly Best and Most Versatile Land.

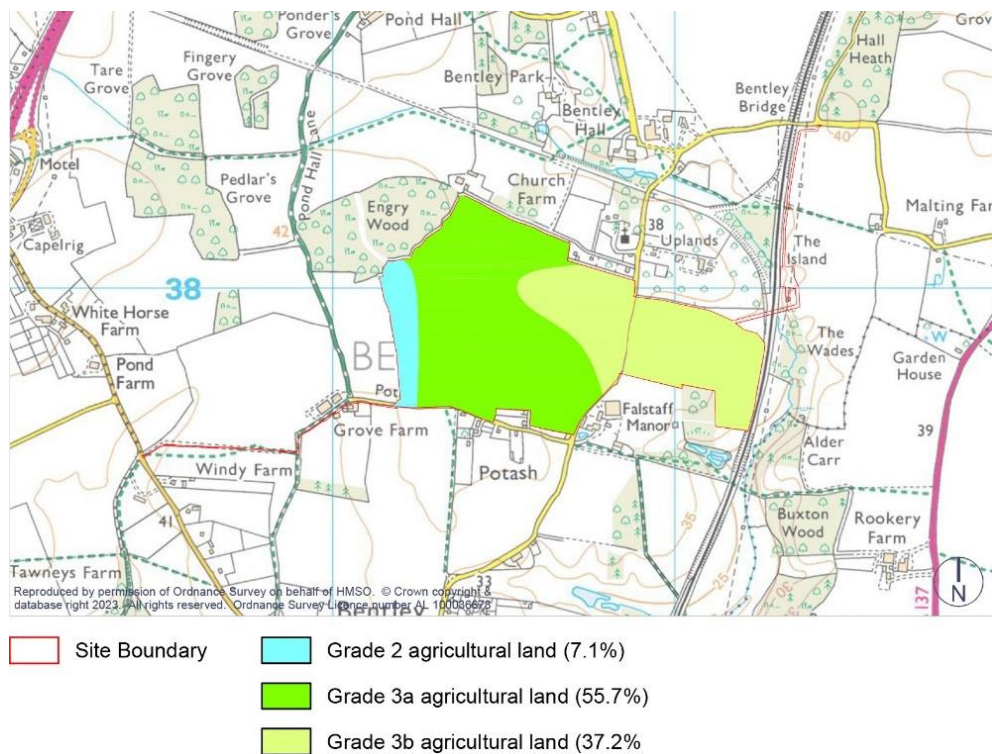
5.10.3 The ALC Survey was undertaken for the full extent of the two fields in which the solar development is located. Following this survey, the Applicant chose to reduce the footprint of the Proposed Development in the west of the Site to remove part of the Grade 2 agricultural land such that it could remain in productive use. This also tied-in with the proposed landscape strategy of reinstating historic field boundaries.

5.10.4 The updated agricultural land classification for the Site is shown on Image 3 below:





**Image 3: Agricultural Land Classification of the Application Site**



- 5.10.5 Image 3 shows that the Site comprises 7.1% Grade 2 agricultural land, 55.7% Grade 3a, and 37.2% Grade 3b. The Site therefore remains partially Best and Most Versatile Land.
- 5.10.6 The impact of the Proposed Development on agricultural productivity and food security is discussed further in the policy appraisal in Section 6 below.

## **6.0 PLANNING POLICY CONTEXT AND APPRAISAL**

### **6.1 Introduction**

6.1.1 This section undertakes an appraisal of the Proposed Development in the context of the current planning policy framework.

### **6.2 Local Development Plan**

6.2.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 (PCPA) requires applications to be determined in accordance with the Development Plan unless material considerations indicate otherwise. At the time of drafting, the relevant adopted Local Development Plan documents in Babergh District relating to the Site and the Proposed Development comprise the following:

- Babergh and Mid Suffolk Joint Local Plan Part 1 (adopted November 2023); and
- Bentley Neighbourhood Plan 2018-2037 (adopted November 2022).

6.2.2 With reference to the Babergh and Mid Suffolk Live Policies table published in November 2023, the saved policies of the Core Strategy 2014 and Local Plan 2006 are not judged to be relevant to the determination of this application.

6.2.3 The Site lies within a mineral safeguarding area, however, due to the temporary and reversible nature of the Proposed Development there would be no permanent sterilisation of any mineral reserve. As such, the Suffolk Minerals and Waste Plan is not considered to be relevant to the determination of this application.

### **6.3 Material Considerations**

6.3.1 There is no strict definition of what constitutes a 'material consideration' in planning legislation, although case law indicates that any consideration, which relates to the use or development of land is capable of being a material consideration in the determination of a planning application.

6.3.2 Such considerations can include the National Planning Policy Framework (NPPF), emerging planning policies, Government policy & strategy, and Supplementary Planning Documents (SPDs).



6.3.3 The following documents are considered to be material considerations in respect of the Proposed Development:

- Climate Change Act 2008 (2050 Target Amendment) Order 2019;
- National Policy Statements for Energy (November 2023);
- British Energy Security Strategy 2022;
- Powering Up Britain 2023;
- National Planning Policy Framework;
- National Planning Practice Guidance;
- National Grid Future Energy Scenarios 2023.

6.3.4 Support provided by the above policy documents in terms of the need for renewable energy / solar development is covered in Section 4.0 of this Planning Statement and is not repeated here.

6.3.5 The most recent Government policy on Renewable Energy development including solar is contained within the National Policy Statements (NPS) for Energy (both EN-1 and EN-3), which were published as final in November 2023. The NPSs recognise the critical and urgent need to deliver solar development, and that this need should outweigh the harm resulting from development in all but the '*most exceptional circumstances*'. The NPS are summarised at Section 4.2.42 of this PDAS, and are considered to be an important and material consideration for this application.

## 6.4 Planning Policy Appraisal

6.4.1 The following appraisal considers the policies and guidance which are considered directly material to the determination of the proposal for which planning permission is being sought.

6.4.2 The effects of the Proposed Development on various environmental considerations have been assessed in the Appendices submitted with this PDAS and are summarised in Section 5.0 above. Where necessary, appropriate mitigation has been embedded within the design to mitigate any potential impacts. The policy analysis presented in this section of the PDAS should be read alongside the assessments in the appendices.



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### ***Babergh and Mid Suffolk Joint Local Plan Part 1***

6.4.3 The following list of policies are considered to be of most relevance to the determination of the Application:

- Policy on the Principle of Development:
  - **Policy LP25** Energy Sources, Storage and Distribution
- Policy on Environmental Protection and Amenity:
  - **Policy LP15** Environmental Protection and Conservation
- Policy on Design:
  - **Policy LP24** Design and Residential Amenity
- Policy on protecting the Environment:
  - **Policy SP09** Enhancement and Management of the Environment
  - **Policy LP16** Biodiversity and Geodiversity
  - **Policy LP17** Landscape
  - **Policy LP19** The Historic Environment

#### *Policy on the Principle of Development*

6.4.4 Policy LP25 of the Joint Local Plan relates specifically to renewable and low carbon energy developments. The policy is aimed at encouraging and facilitating the development of renewable energy in Babergh and Mid Suffolk Districts.

6.4.5 The supporting text for the policy notes that the Joint Local Plan “*supports proposals for renewable and low carbon energy development providing that any identified potential harm on Special Protection Areas, Special Areas of Conservation, Sites of Special Scientific Interest, AONB designations or Local Wildlife Designations can be effectively mitigated.*”

6.4.6 The Proposed Development would not result in adverse harm to any of the designated areas identified above. The starting point should therefore be that the principle of the Proposed Development is supported at the Site, and that the benefits of the Site’s location in avoiding harm to any of the above spatial designations weighs heavily in favour of the Proposed Development.

6.4.7 Policy LP25 states that:

1. *Renewable and low carbon, decentralised and community energy generating proposals will be supported subject to:*

*a. The impact on (but not limited to) landscape, highway safety, ecology, heritage, residential amenity, drainage, airfield safeguarding and the local community have been fully taken into consideration and where appropriate, effectively mitigated;*

*b. Where renewable or low carbon energy designs are to be incorporated within a development, an integrated approach being taken, using technology that is suitable for the location and designed to maximise operational efficiency without compromising amenity;*

*c. The impact of on and off-site power generation infrastructure being acceptable, having regard to other policies in this plan;*

*d. The provision of mitigation, enhancement and compensation measures when necessary; and*

*e. Approval of connection rights, and capacity in the UK power network, to be demonstrated as part of the planning application (where applicable).*

*2. The relevant LPA will normally use conditions attached to planning consents for energy development schemes to ensure the site is restored when energy generation ceases or becomes non-functioning for a period of six months.*

*3. Where proposals for renewable and low carbon energy impact on nature conservation sites, the Areas of Outstanding Natural Beauty, or the setting of heritage assets (including conservation areas), the applicant must be able to convincingly demonstrate that potential harm resultant from development can be effectively mitigated and that there are no alternative sites available within the District or for community initiatives within the area which it is intended to serve. This includes providing underground power lines and cabling.*

6.4.8 Policy LP25(1a) requires the impacts of the Proposed Development on landscape, highway safety, ecology, heritage, residential amenity, drainage, airfield safeguarding and the local community to have been taken fully into consideration, and mitigated where appropriate. As set out in Section 5 of this PDAS, assessments have been prepared for:



- **landscape** – a Landscape and Visual Impact Assessment has been submitted as Appendix B;
- **highway safety** – a Transport Statement has been submitted as Appendix H;
- **ecology** – a Ecological Assessment Report has been submitted as Appendix C;
- **heritage** – a Heritage Impact Assessment has been submitted as Appendix D;
- **residential amenity** – a Noise and Vibration Assessment has been submitted as Appendix G, and a Glint and Glare Assessment as Appendix J;
- **drainage** – a Flood Risk Assessment and Drainage Strategy has been submitted as Appendix F;
- **airfield safeguarding** – this is considered by the Glint and Glare Assessment at Appendix J; and
- **local community** – details of public consultation with the local community is set out in Section 1.7 of this PDAS.

6.4.9 The above assessments demonstrate the measures taken to fully consider the potential impacts of the Proposed Development, and to ensure effective mitigation to avoid and reduce effects.

6.4.10 The assessments demonstrate that there would be short-term major to moderate adverse landscape and visual effects from locations around the Site boundary, but that there would be no other substantial adverse effects, including for highways, ecology, heritage, residential amenity, drainage, and airports. The LVIA also demonstrates that the proposed mitigation shown on Planning Drawing 3223-01-13 would be effective in the medium-to long-term in mitigating the effects of the Proposed Development. The medium- to long-term landscape and visual effects would reduce generally to minor to negligible adverse. The limited extent of landscape and visual effects is due to the existing landscape framework around the Site which includes mature hedgerows and woodland that are effective in curtailing the Site visibility.

6.4.11 The Application has therefore fully considered the matters raised in Policy LP25(1a) and incorporated effective mitigation where appropriate. The Proposed Development is therefore compliant with Policy LP25(1a).

- 6.4.12 Policy LP25(1b) is considered to relate to the incorporation of renewable energy as part of residential, commercial or industrial development and is therefore not relevant to the Proposed Development.
- 6.4.13 Policy LP25(1c) relates to the impacts of the 'associated infrastructure' with a renewable energy development. The associated infrastructure is an inherent part of what is being applied for and is shown on the drawings submitted for planning approval, and has also been assessed comprehensively within each of the relevant technical assessments in the appendices to this PDAS. The conclusions of each of these assessments is that there would be no medium- to long-term impacts resulting from the Proposed Development which would be unacceptable. The Proposed Development therefore complies with Policy LP25(1d)
- 6.4.14 Policy LP25(1d) requires the provision of mitigation, enhancement, and compensation measures where necessary. The proposed mitigation for the Proposed Development is detailed in the technical assessments in the appendices to this PDAS. In addition the mitigation is an inherent part of the planning drawings submitted for approval. The Proposed Development therefore complies with Policy LP25(1d).
- 6.4.15 Policy LP25(1e) requires approval of connection rights and capacity in the UK power network to be demonstrated as part of the planning application. The Proposed Development has a secured grid connection with UK Power Networks. The Proposed Development is therefore compliant with Policy LP25(1e).
- 6.4.16 Policy LP25(2) states that the LPA will normally use a planning condition to ensure a Site is restored should energy generation cease for a period of six months. The Proposed Development is for forty years at which point it would be decommissioned, however the Applicant would be happy to review and agree a planning condition to the effect required by Policy LP25(2). The Proposed Development would therefore comply with Policy LP25(2).
- 6.4.17 Policy LP25(3) requires Applicants to be able to convincingly demonstrate that potential harm resultant from a development can be effectively mitigated, and that there are no alternative sites available in the District. It has already been set out in relation to Policy LP25(1) that the potential harm has been effectively mitigated. In relation to demonstrating there are no suitable alternative sites, the Applicant has

- prepared an Alternative Site Assessment (ASA) which is submitted as Appendix A to this PDAS.
- 6.4.18 Policy LP25(3) requires an Applicant to demonstrate there are ***no alternative sites available within the District***, however, this is not considered a feasible approach due to the nature of renewable energy generation connections which have a specific requirement to be proximate to a part of the National Grid with capacity to accept a connection. Therefore, the ASA only considers alternative locations within the District that could utilise the same point of connection as the Proposed Development. This approach is considered reasonable and proportionate, and in the Applicant's opinion is in accordance with the intent of Policy LP25(3).
- 6.4.19 The ASA takes a methodical and transparent approach to the identification of alternative sites and provides a review of potential alternative development sites to the Application Site that are of a size and location suitable for a commercial solar development.
- 6.4.20 The ASA demonstrates that there are no better alternative locations within Babergh District for a commercial solar array with a generating capacity of 40 MW to connect into the 132kV power line identified as the point of connection with the National Grid.
- 6.4.21 The Application Site is therefore in the best possible location to provide the requisite essential renewable energy, whilst avoiding or minimising environmental harm. In addition, the characteristics of the Application Site are well suited to accommodating a commercial solar array due to the broadly flat underlying topography and the existing landscape framework of hedgerows and trees that provide opportunities for integration, visual screening, and biodiversity enhancement.
- 6.4.22 The Proposed Development therefore complies with Policy LP25(3).
- 6.4.23 Overall, the Proposed Development is judged to comply with all parts of Policy LP25 and would make a significant contribution to renewable energy generation in the District with associated benefits to reducing carbon emissions and climate change, and increasing energy security for green growth. As with almost all renewable energy development on greenfield sites there is a level of harm resulting from the Proposed Development, but this harm has been reduced through effective mitigation led by the Landscape Strategy annotated on Planning Drawing 3223-01-13. The environmental impacts of the Proposed Development have been fully considered and have been



demonstrated to be very limited in geographical extent due to the characteristics of the Site.

- 6.4.24 The Proposed Development complies with Policy LP25 and therefore the principle of development should be accepted by Babergh District, and the starting point for determination should be that the Proposed Development is supported.

*Policy on Environmental Protection and Amenity*

- 6.4.25 Policy LP15 Environmental Protection and Conservation requires development to make an efficient and effective use of land by where possible avoiding areas of best and most versatile land. The Applicant has undertaken an agricultural land classification survey which established the Site is predominantly BMV land (grade 3a). This survey is summarised at Section 5.10 of this PDAS and available in full at Appendix K.
- 6.4.26 Since the submission of an original pre-application enquiry and then subsequently an EIA Screening Request, the Applicant has reduced the Site footprint to avoid and reduce to a minimum the impacts on Grade 2 agricultural land, which was the highest grade of land found at the Site. This involved removing approximately 6 hectares of the west of the Site from the Application such that it could remain in productive agricultural use.
- 6.4.27 The ASA submitted at Appendix A of this PDAS also sets out that there is no better alternative to the Site that would not also be Best and Most Versatile Land.
- 6.4.28 The Applicant has therefore taken positive measures to seek to avoid the development of BMV land, and where the development of BMV land has been found to be necessary, has taken the positive step of limiting the impact on the higher quality Grade 2 land.
- 6.4.29 In relation to the effective use of land it should also be reiterated that the Proposed Development is not permanent, and at the end of the operational life of the solar farm it would be decommissioned, and the land could be returned to productive agricultural use. There is evidence that resting soils over a long period in this way can be beneficial to future productivity of the land post-decommissioning.
- 6.4.30 The biggest threats to UK Food Security are considered by DEFRA to be:



- The impacts of climate change which are resulting in more frequent flooding and droughts, as well as unpredictable weather patterns that are affecting harvests year-on-year. Weather patterns are only expected to get more unpredictable as the impacts of climate change worsen.
- The availability of workforce to work in the agricultural sector, notably at harvest.

6.4.31 The Proposed Development would contribute to the UK national target of achieving Net Zero, which in turn is part of the strategy of mitigating the effects of climate change.

6.4.32 There are currently no restrictions in the planning system preventing farming enterprises from transitioning land from arable cultivation to pasture, as set out in s55(2)(e) of the Town and Country Planning Act 1990. Similarly, there are no restrictions on landowners taking arable land out of production and resting soils as grassland, or even leaving it fallow.

6.4.33 There is no current Government policy or initiative that requires land to be retained in productive arable use, including if it is Best and Most Versatile land. Government policy is only that development should ideally avoid the loss of BMV land, which is taken to mean that the land could not realistically be productively farmed for arable use again in the future (for example following the development of housing).

6.4.34 Whilst the Proposed Development would result in the temporary loss of approximately 27 hectares of BMV land it would not be a permanent loss, and the Applicant is proposing to graze sheep between the solar arrays to retain a level of agricultural productivity.

6.4.35 The Proposed Development is judged to be an efficient use of land through its significant renewable energy generation, its continued agricultural use as grazing pasture, and its significant biodiversity net gain of +106.54% for area-based habitat units. Collectively these are judged to outweigh the temporary loss of a relatively small area of arable farmland.

6.4.36 The Proposed Development is therefore considered to comply with Policy LP15 with regards the effective use of land.

6.4.37 Policy LP15 also requires development to avoid, mitigate and reduce to a minimum all forms of pollution including impacts on amenity. In relation to the Proposed



Development this is considered to be its potential noise impacts, visual impacts, and glint and glare impacts.

6.4.38 The technical appendices to this PDAS include an assessment of the Proposed Development's noise impacts, visual impacts, and glint and flare impacts. These assessments conclude that the Proposed Development would not result in any unacceptable effects on amenity, or visual impacts that are of such magnitude that they would significantly affect residential visual amenity. The Proposed Development incorporates mitigation to reduce its impacts, and therefore complies with Policy LP15 in regards the impacts of pollution and environmental amenity.

6.4.39 The Proposed Development is therefore judged to comply with Policy LP15.

#### *Policy on Design*

6.4.40 Policy LP24 Design and Residential Amenity sets out design requirements for all new development proposals. This includes responding to existing character and context, creating character and interest, and designing for health and amenity.

6.4.41 The Proposed Development has had regard to the published landscape character assessments and design guidance at a national, regional, county, district and neighbourhood level and has sought to deliver identified landscape opportunities. This included opportunities to provide increased hedgerow cover and restore a historic landscape pattern of small-scale enclosure and meadows, with hedgerow trees. Locally, the published assessments identify significant populations of Stag Beetles and Dormouse in woodlands and hedgerows and there are opportunities to extent meadow habitats along with hedgerow corridors to increase habitat connectivity and support a more biodiverse ecosystem.

6.4.42 The landscape strategy is annotated on Planning Drawing 3223-01-13 and seeks to restore a smaller-scale field pattern that was historically more traditional within this landscape, thus responding to existing character and context whilst looking to create an improved landscape character both during the Proposed Development's operational period, and for future generations following decommissioning.

6.4.43 The landscape strategy balances the technical and functional requirements of the development with measures to avoid and mitigate effects, and also delivers on opportunities to provide enhancement to the woodland edge habitats at Engry Wood,

and the provision of meadows of species-diverse grassland in proximity to residential edges to the north and south.

- 6.4.44 Overall, the Proposed Development is considered to take a positive approach to design that delivers a robust landscape strategy that will deliver lasting benefits post-decommissioning. The Proposed Development is considered to comply with Policy LP24.

*Policy on protecting the Environment:*

- 6.4.45 Read together, Policies SP09, LP16, LP17 and LP19 seek to protect and enhance the environment of Babergh and Mid Suffolk Districts with particular consideration to landscape character, biodiversity and nature conservation, and the historic environment.
- 6.4.46 Policy SP09 Enhancement and Management of the Environment requires development to support and contribute to the conservation, enhancement and management of the natural and local environment and networks of green infrastructure, including: landscape, biodiversity, geodiversity and the historic environment and historic landscape.
- 6.4.47 Policy LP16 Biodiversity and Geodiversity requires all development to follow the biodiversity and mitigation hierarchy, protect designated sites and irreplaceable habitats, conserve and protect any protected species and habitats, plan positively for the creation of local networks of biodiversity and wildlife corridors, and deliver a minimum 10% biodiversity net gain.
- 6.4.48 Policy LP17 Landscape requires development to conserve and enhance landscape character, in particular by integrating with the existing landscape character, being sensitive to landscape and visual impacts, and preparing an LVIA to identify ways of avoiding, reducing and mitigating adverse effects.
- 6.4.49 Policy LP19 The Historic Environment requires Applicants to submit a heritage statement that sets out the significance of any heritage asset that is affected along with the potential impact of the Proposed Development. Policy LP19 also requires an Applicant to undertake appropriate desk-based assessment and possible field evaluation where there is potential to affect archaeology.

- 6.4.50 The Proposed Development has some tension with regards the above policies on landscape protection and the historic environment. The technical appendices submitted as part of this PDAS include an Ecological Assessment Report, a Landscape and Visual Impact Assessment, and a Heritage Impact Assessment.
- 6.4.51 The Ecological Assessment Report concludes that the Proposed Development would not result in any unacceptable impacts on designated sites for nature conservation, habitats, or protected species but would result in a substantial biodiversity net gain of more than 100% for area-based habitats across the Site, and more than 100% for linear-based habitats such as hedgerows.
- 6.4.52 The Proposed Development therefore complies with Policy LP16.
- 6.4.53 The conclusion of the LVIA is that there would be short-term adverse visual impacts relating to views available at intermittent locations from along the Site boundary, and adverse landscape impacts on the character of the landscape at the Site level and in the close area around the Site. This level of residual landscape and visual effect around a Site boundary is common to almost any form of development; what is important is that the mitigation provided as part of the Proposed Development (shown on Planning Drawing 3223-01-13) would be effective in mitigating and reducing the medium- and long-term effects. The medium- and long-term effects would be very limited.
- 6.4.54 The Proposed Development would therefore have some tension with Policy LP17 in the short-term, but this tension would reduce substantially in the medium- to long-term (between approximately five to ten years) as mitigation establishes. Following decommissioning the Proposed Development should leave a lasting benefit in relation to the additional hedgerows and hedgerow trees planted, and the creation of a smaller-scale landscape pattern in keeping with the historic landscape characterisation. Over its lifetime the Proposed Development is considered to conserve and enhance landscape character. The Applicant has met the requirements of Policy LP17 by undertaking a LVIA to identify mitigation and opportunities for enhancement. Overall, the Proposed Development would not conflict with Policy LP17.
- 6.4.55 The conclusion of the Heritage Impact Assessment is that the Proposed Development would result in '*less than substantial harm*' to the settings of heritage assets, and that this would be less than substantial harm at the lower end of such a

- scale. This considers both statutory designated and locally designated heritage assets.
- 6.4.56 In relation to the closest designated heritage asset, the Grade II\* listed Church of St Mary, a visit to the Site confirmed that the church is surrounded by dense planting. Further vegetation including mature hedgerows and trees line most of the northern boundary of the Site with Church Road itself, which bisects the Site, also being bordered on both sides by tall hedgerows.
- 6.4.57 Although it is acknowledged that the Proposed Development will convert an arable area of land that is near to the church into a more industrial character it is not assessed that current views from the west, south and east of the Site make a significant contribution to the setting of the church due to its relative invisibility within an area of mature trees. It is noted, however, that the survey was undertaken in September whilst there was still a high degree of vegetation cover and that the church may be more visible in winter months (though, given the density of the tree coverage in the area this is assessed to be limited). An LVIA viewpoint (PDAS Appendix B, LVIA Figure 11d(i)), undertaken in winter months with less vegetation cover, did indicate that from one location along Potash Lane on the southern edge of the main Site the church tower could be observed. The LVIA assessment notes that it is *“just visible along the skyline, however this appears to be incidental rather than a designed view towards the church tower. The vegetation cover along Potash Lane and trees around the church itself restrict the general visibility towards the church tower. The view is glimpsed in the context of walking along the route, and not a natural stopping point”* (PDAS Appendix B-5: VP4). The LVIA assessment considers that this would be a ‘moderate adverse effect’ (in LVIA terms) which would, over time due to the development of screening vegetation as illustrated on LVIA Figure 11d(iii), be reduced to a minor to negligible adverse effect (in LVIA terms).
- 6.4.58 The current Church of St Mary dates from the 12th century and its significance lies primarily in its exceptional historic and architectural interest, but some significance is also derived from the landscape setting in which it is experienced. The church is set within the hamlet of Bentley, to the north of the village of Bentley and near to Bentley Hall and its associated buildings and designed landscape. It is set at the centre of its churchyard which is bordered on all sides by mature trees and vegetation. The church’s location within the hamlet does not allow it to be seen from across the landscape due to the degree of vegetation cover within the hamlet and

across the wider nearby landscape including numerous areas of dense woodland. Consequently, the church has an intimate setting within an enclosed and vegetated plot. The churchyard, monuments and enclosed plot of land contribute to the aesthetic value by creating a space within which the architectural detailing and materials can be appreciated, as well as enhancing the experience of the church as a sanctuary and enclosed retreat from the wider environment. From no part of the churchyard or from within Church of St Mary (excepting likely views from atop the tower itself), given intervening topography, vegetation and other landscape features, is there any view of the Site. The evaluation of the anticipated level of harm that may be caused by the Proposed Development thus relates to potential impacts upon the way in which the asset is understood and experienced in views towards it from the wider landscape. These views, as stated above, appear to be very limited and only possible in winter months when there is reduced vegetation cover.

6.4.59 In views towards the church (hidden within an area of dense vegetation) from the west, south and east the Proposed Development will represent a change in land use from the current open agricultural setting to a solar array; albeit one that is also open. The change in land use would mean that the wider setting of the church, insofar as it relates to views of the church in winter months (limited as they may be), would not be preserved and in this context, it is considered that there will be an, at worst, Low effect upon the setting of the Church of St Mary. This Low effect would cause a level of harm that is considered to be 'less than substantial' in NPPF terms. The less than substantial harm will require to be weighed against the public benefits of the Proposed Development in line with Paragraph 202 of the NPPF.

6.4.60 Paragraph 202 of the NPPF states that where a development will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal. The public benefits of the Proposed Development include its renewable energy generation, contribution to tackling climate change, contribution to British Energy Security and delivery of green growth, and its substantial biodiversity net gain. The public benefits are considered to be individually and collectively significant and should attach significant weight. These significant public benefits are considered to outweigh the less than substantial harm (at the lower end of the scale) to the setting of heritage assets in this instance and the test at Paragraph 202 of the NPPF is considered to have been met.

- 6.4.61 An Archaeological Geophysical Survey Report has also been prepared in support of the planning application and is contained within Appendix E of this PDAS.
- 6.4.62 The archaeological geophysical survey has not identified any substantial remains of a definitive archaeological nature. Should any currently unknown heritage assets be discovered during post-determination archaeological surveys then mitigation strategies will include either the omission of areas of solar panels and cabling to avoid direct impacts, or the use of no dig installation techniques to preserve any assets in situ.
- 6.4.63 There has been considerable development in ‘no dig’ solutions in the construction of solar farm developments. Planning drawing 3223-01-04 includes details of the use of concrete sleepers to support panels in archaeologically sensitive areas of the site, if these are identified. In addition, there are a range of solutions for cabling above ground in sensitive areas and the use of above ground roads (i.e. no excavation). These solutions are becoming increasingly established in locations such as landfills, where the integrity of the capping system needs to be maintained.
- 6.4.64 Images 4 and 5 provide illustrations of typical no dig solutions employed on other sites. These would be used where required to preserve archaeological features in situ if they are identified by pre-determination geophysical surveys or post determination excavation.

**Image 4: Typical ‘No Dig’ Solar Panel Installation**





**Image 5: Typical 'No Dig' Solar Panel and Cabling Installation**



6.4.65 The Proposed Development would therefore have some tension with Policy LP19 in that it would affect the setting of a heritage asset; albeit this effect would be low impact and result in 'less than substantial harm' (in terms of the NPPF). Overall however, the Applicant has met the requirements of Policy LP19 in preparing a HIA to assess the impacts of the Proposed Development. This has included a desk-based archaeological assessment and geophysical survey field evaluation. The Applicant has set out how archaeological assets would be preserved in-situ should any hitherto unknown archaeology be discovered during construction or by any post-determination archaeological investigation. Overall, the Proposed Development is judged not to conflict with Policy LP19.

*Other Policies of the Joint Local Plan Part 1*

6.4.66 The Proposed Development clearly accords with all other development plan policies including Policy LP27 on Flood Risk and Drainage, Policy LP29 on Access and Traffic, Policy LP23 on Sustainable Construction and Design, and Policy SP10 Climate Change.

***Bentley Neighbourhood Plan 2018-2037***

6.4.67 The following list of policies are considered to be of most relevance to the determination of the Application:

- Policy BEN 3 – Development Design
- Policy BEN 4 – Flooding and Sustainable Drainage
- Policy BEN 7 – Protecting Bentley’s Landscape Character
- Policy BEN 8 – Protecting Habitats and Wildlife Corridors
- Policy BEN 10 – Dark Skies and Street Lighting
- Policy BEN 11 – Heritage Assets
- Policy BEN 12 – Buildings of Local Significance

#### *Policy BEN 3 Development Design*

6.4.68 Policy BEN 3 reflects many of the same points raised by Policy LP24 of the Joint Local Plan Part 1, but does however recognise several additional specific requirements to Bentley that should be considered by development. This includes that development should:

- i) demonstrate how it meets the general design principles set out at Paragraph 6.5 and Appendix A of the Plan;
- ii) reflect the qualities and character of the setting of the village as identified in the Bentley Landscape Appraisal;
- iii) ensure there is no detrimental impact on the key features of important views (as identified on the Policies Map); and
- iv) avoid increasing traffic along a designated Quiet Lane.

6.4.69 i) The Applicant has completed the checklist included at Appendix A of the Neighbourhood Plan, in so far as it has been possible to set out in relation to the Proposed Development. This checklist is included at Appendix L of this PDAS.

6.4.70 ii) The LVIA submitted as Appendix B of this PDAS includes a review of the Bentley Landscape Appraisal and uses this to inform the assessment of landscape and visual impact. The design of the Proposed Development has therefore given due consideration to the Bentley Landscape Appraisal and sought to limit the introduction of ‘changes to avoid’, many of which relate to proposed housing.

6.4.71 iii) The Proposed Development would not be seen in any of the Important Views identified on the Policies Map of the Neighbourhood Plan. These views are almost exclusively from around the settlement edge of Bentley in the south of the Parish, and do not include the Site.



6.4.72 iv) Church Lane is a designated Quiet Lane, however the Proposed Development would not result in any substantial change in traffic either during construction or once operational, as set out in the supporting Transport Statement at Appendix H of this PDAS.

6.4.73 Overall, the Proposed Development would not conflict with Policy BEN 3 of the Neighbourhood Plan.

*Policy BEN 4 – Flooding and Sustainable Drainage*

6.4.74 Policy BEN 4 requires details of a sustainable surface water drainage strategy to be provided. Appendix F of this PDAS provides a Flood Risk Assessment and Drainage Strategy that satisfies the policy requirements.

*Policy BEN 7 – Protecting Bentley’s Landscape Character*

6.4.75 Policy BEN 7 reflects the requirements of Policy LP17 of the Joint Local Plan Part 1 but provides further specific requirements for development in Bentley. The further requirements reflect those covered by Policy BEN 3 and the Design Checklist. The Applicant has prepared a LVIA which is submitted at Appendix B of this PDAS that sets out the impacts of the Proposed Development and mitigation which is secured by Planning Drawing 3223-01-13 and would be further secured by planning conditions. The Applicant has also completed the checklist included at Appendix A of the Neighbourhood Plan, in so far as it has been possible to set out in relation to the Proposed Development. This checklist is included at Appendix L of this PDAS.

6.4.76 Overall, the Proposed Development does not conflict with Policy BEN 7.

*Policy BEN 8 – Protecting Habitats and Wildlife Corridors*

6.4.77 Policy BEN 8 reflects the requirements of Policy LP16 of the Joint Local Plan Part 1. The Applicant has prepared an EAR submitted at Appendix C of this PDAS which sets out that the Proposed Development would be in accordance with Policy BEN 8. The EAR concludes that the Proposed Development would not result in any unacceptable impacts on designated sites for nature conservation, habitats, or protected species but would result in a substantial biodiversity net gain of more than 100% for area-based habitats across the Site, and more than 100% for linear-based habitats such as hedgerows.

### *Policy BEN 10 – Dark Skies and Street Lighting*

- 6.4.78 Policy BEN 10 requires new development to protect dark skies and avoid light pollution. The Proposed Development would not be lit, and would only include emergency lighting at key buildings that would be motion-operated. The CCTV requirements with the Proposed development would be infra-red and would not require lighting. The Proposed Development would therefore comply with Policy BEN 10.

### *Policy BEN 11 – Heritage Assets*

- 6.4.79 Policy BEN 11 reflects the requirements of Policy LP19 of the Joint Local Plan Part 1, but with an emphasis on the Village's heritage assets. The Applicant has submitted a Heritage Impact Assessment at Appendix D of this PDAS that provides a desk-based archaeological assessment, and an assessment of impact to the setting of designated and local heritage assets. The Proposed Development therefore complies with Policy BEN 11.

### *Policy BEN 12 – Buildings of Local Significance*

- 6.4.80 Policy BEN 12 requires the retention and protection of buildings of local significance, which have been considered as part of the Heritage Impact Assessment. The Proposed Development therefore complies with Policy BEN 12.

## **7.0 SUMMARY AND CONCLUSIONS**

- 7.1.1 The Proposed Development comprises the construction and operation of a photovoltaic solar array, associated infrastructure and landscaping on land at Grove Farm, Bentley.
- 7.1.2 The Proposed Development would assist in delivering the need for renewable energy development in the context of the legally binding net zero target established by the Climate Change Act 2008 (2050 Target Amendment) Order 2019 and the very ambitious sub-target for decarbonising the electricity system by 2035. National Grid ESO's Future Energy Scenarios (and associated data) make it very clear that the development of solar PV and other renewable energy sources needs to be accelerated to achieve this net zero target by 2035, and the Government's Climate Change Committee noted in their 2023 report that deployment of solar is the only area in which the UK is currently 'significantly off track' to meet needs.

- 7.1.3 The Applicant has secured a grid connection offer from National Grid for a 40 MW solar farm to the local transmission network. The availability of this grid connection and the immediate deliverability of the Proposed Development in the context of the urgent local, regional and national need should be given significant weight in the planning balance.
- 7.1.4 The Proposed Development would typically generate around 43.3 GWh of renewable electricity per annum and would therefore theoretically supply up to 9,786 houses in Babergh District, equivalent to approximately 28% of existing houses.
- 7.1.5 The Proposed Development is financially and technically viable and can be brought forward well in advance of 2035 to start delivering the reductions in CO<sub>2</sub> envisaged by legislation and national and local policy & strategy.
- 7.1.6 The Proposed Development represents sustainable development and meets the requirements of Policy LP25 of the recently adopted Babergh and Mid Suffolk Joint Local Plan Part 1 and therefore the starting point should be that the Council provide support for the application. The Applicant has set out that the Proposed Development is in broad accordance with the Local Development Plan.
- 7.1.7 There is a degree of policy tension in respect of landscape and visual impact, and harm to the setting of heritage assets, where no further steps can be taken to reduce the residual effects. These residual effects remain relatively limited in magnitude and geographical extent due to the extent of mature vegetation that provides existing screening of the Site, as well as the sympathetic design approach presented as part of the landscape strategy annotated on Planning Drawing 3223-01-13.
- 7.1.8 The most recent Government policy on Renewable Energy development including solar is contained within the National Policy Statements (NPS) for Energy (both EN- 1 and EN-3), which were published as final in November 2023. The NPSs recognise the critical and urgent need to deliver solar development, and that this need should outweigh the harm resulting from development in all but the '*most exceptional circumstances*'. The NPS are summarised at Section 4.2.42 of this PDAS, and are considered to be an important and material consideration for this application.
- 7.1.9 Overall, the residual impacts of the Proposed Development are judged to be acceptable in both the short-, medium- and long-term. The level of policy tension as



a result of adverse harm is limited, and considered to be significantly outweighed by the potential benefits of the Proposed Development.

- 7.1.10 In accordance with Section 38(6) of the Planning and Compulsory Purchase Act 2004 it is therefore assessed that the planning balance should weigh significantly in favour of the Proposed Development, and planning permission be granted.



# PDAS Appendix A – Alternative Site Assessment



# PDAS Appendix B – Landscape and Visual Impact Assessment





# PDAS Appendix C – Ecological Assessment Report



# PDAS Appendix D – Heritage Impact Assessment



# PDAS Appendix E – Archaeological Geophysical Survey Report



# **PDAS Appendix F – Flood Risk Assessment and Drainage Strategy**



# PDAS Appendix G – Noise and Vibration Assessment



# PDAS Appendix H – Transport Statement



# PDAS Appendix I – Arboricultural Impact Assessment



# PDAS Appendix J – Glint and Glare Assessment





# PDAS Appendix K – Agricultural Land Classification



# **PDAS Appendix L – Bentley**

## **Neighbourhood Plan Design Checklist**



