

# Priory Farm Solar Array

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## Proposed Development of a Photovoltaic Solar Array on Land at Priory Farm to the East of Great Wymondley, North Hertfordshire

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### Planning and Design & Access Statement

NOVEMBER 2021



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## **FOREWORD**

This document is the Planning and Design & Access Statement (PDAS) in respect of an application for full planning permission for the construction and operation of a photovoltaic solar array on land at Priory Farm to the north and east of the village of Great Wymondley, North Hertfordshire (hereafter referred to as the 'Proposed Development').

This planning application has been prepared in accordance with the provisions of the Town and Country Planning Act 1990 (as amended) and all other relevant subordinate legislation. The Proposed Development was subject to an 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.

The application has been produced cognisant of the requirements set out within the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended); specifically, Article 7 which sets out the requirements for applications for planning permission. The application is also cognisant of the local validation requirements specified by North Hertfordshire District Council.

The planning application documents comprise the following:

### **Documents Forming Part of the Application**

- Planning Application Forms, Certificates and Notices
- Planning Application Drawings
- Planning and Design & Access Statement
- Agricultural Land Assessment
- Landscape and Visual Impact Assessment
- Heritage Assessment
- Flood Risk Assessment
- Preliminary Ecological Appraisal
- Glint & Glare Assessment
- Noise and Vibration Assessment
- Transport Statement

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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 AGR 4 Solar Limited (referred to hereafter as 'the Applicant') to North Hertfordshire District Council for the construction and operation of a photovoltaic solar array (hereafter referred to as 'the Proposed Development') on land at Priory Farm, to the east of Great Wymondley, Hertfordshire (hereafter referred to as 'the Site'). The location of the Proposed Development is illustrated on Planning Drawing 3004-01-01.

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 (see Appendix A).

1.1.3 This introduction to the PDAS provides the general background to the Proposed Development and details of the Applicant. Section 2 of the PDAS sets out a description of the Site and its surroundings. Section 3 provides a description of the proposed development proposals. 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. The PDAS is supported by a series of technical appendices that enable an understanding of the environmental effects of the Proposed Development. These technical appendices have been used to inform the policy appraisal in Section 5.

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

- Section 1: Introduction, Background and Scope of Application
- Section 2: Site, Surroundings and
- Section 3: Description OF Proposed Development
- Section 4: The Need for the Development
- Section 5: Planning Policy Context and Appraisal
- Section 6: Summary and Conclusions

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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:

- Axis – Planning, Landscape and Visual Impact Assessment, Transport and Traffic;
- Richard Stock – Agricultural Land Classification;
- Avian Ecology Ltd – Ecology and Nature Conservation;
- Noise and Vibration Consultants (NVC) – Noise;
- AOC Archaeology – Archaeology & Historic Environment;
- Weetwood – Flood Risk and Drainage, and
- Pager Power – Glint and Glare Assessment.

## 1.2 Background to the Proposed Development

1.2.1 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<sup>1</sup>. 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 Energy Trends: UK electricity<sup>2</sup> provides the latest details in respect of electricity demand and supply in the UK. Final energy consumption in the second quarter of 2021 was up 33 per cent from last year's record lows when Covid-19 restrictions constrained travel and other activities. Overall energy production fell 27 per cent as maintenance activities curtailed output and this resulted in several supply challenges.

1.2.3 Renewable generation fell on the same period last year due to less favourable conditions in 2021, particularly for wind. Windy conditions last year led to record renewable generation and the still weather this year decreased wind generation by 14 per cent. Fossil fuel generation increased by 36 per cent as gas was used to make good the shortfall. Fossil fuel generation's share rose to 43.4 per cent, its

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<sup>1</sup> <https://lordslibrary.parliament.uk/climate-change-targets-the-road-to-net-zero/>

<sup>2</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1021952/Energy\\_Trends\\_September\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1021952/Energy_Trends_September_2021.pdf)

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highest share since the second quarter of 2019. Low carbon generation's share dropped to 53.1 per cent.

- 1.2.4 Growth in renewable generation capacity remained modest, up 1.4 per cent on the same period last year. Growth in renewable capacity has slowed since the start of 2020. This slowdown in renewable generation needs to be urgently reversed to achieve Net Zero by 2050, particularly as demand increases post Covid-19 pandemic and as the country transitions to electric vehicles and heating.
- 1.2.5 Significant increases in renewable and low carbon generation, combined with carbon capture and storage will be required to achieve the Governments net zero commitment by 2050, based on current and predicted demand.
- 1.2.6 National Grid's Future Energy Scenarios (FES) 2021<sup>3</sup> 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 21 report predicts that between 34 GW and 77 GW of new wind and solar generation could be required to meet demand by 2030.
- 1.2.7 The Proposed Development would contribute 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 and achieve National Grid's target of a Net Zero electricity system by 2030.
- 1.2.8 Further details in respect of the need for the Proposed Development are set out in Section 4 of this document in the context of National and Local planning policy and strategy.

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

- 1.2.9 The Applicant has undertaken an extensive Site search exercise to identify potential locations for solar farms across the UK. The Site search exercise focussed on areas in proximity to National Grid Substations with capacity to

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<sup>3</sup> <https://www.nationalgrideso.com/document/202851/download>

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connect large scale Solar PV arrays. Wymondley Substation was identified as a primary search location due to available capacity and necessary land areas.

### **1.3 The Proposal**

1.3.1 The Applicant is proposing to construct and operate a photovoltaic solar array with associated battery storage and ancillary development for a period of 40 years, after which the Site would be decommissioned unless planning permission is secured for continued operation. The Proposed Development includes a grid connection cable to National Grid's Wymondley Substation. The development would comprise the following main elements and is illustrated on Planning Drawing 3004-01-03:

- c.150,000 Photovoltaic Solar Panels and associated support frames;
- 22 No. Inverter/Transformer Stations;
- 22 No. Battery Storage Containers;
- 1 No. Storage Containers;
- 1 No. Switchgear Building;
- 1No. Control Room Building;
- Grid Connection Cable to National Grid's Wymondley Substation;
- c.2.1km of new/resurfaced internal access tracks (3m wide and constructed using Type 1 stone);
- 2 No. improved existing access points off Graveley Lane;
- Ditch culverts for track crossings;
- 7.8km deer/stock fencing;
- c.40 No. 4m High CCTV cameras;
- c. 20,370 m<sup>2</sup> Woodland Planting, and
- c. 2,040m hedgerow planting (new and gapping up of existing).

1.3.2 The solar array would export up to 49.995MWe of renewable electricity to the National Grid during peak operation.

### **1.4 The Applicant**

1.4.1 AGR Solar 4 Limited is a subsidiary of AGR Power Limited (AGR). AGR is a UK energy developer, which has specialised in delivering low carbon energy infrastructure in partnership with private landowners since 2011.



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## 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:
- (a) the design principles and concepts that have been applied to the development;
  - and
  - (b) 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:
- (a) explain the design principles and concepts that have been applied to the development;
  - (b) demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;
  - (c) explain the policy adopted as to access, and how policies relating to access in relevant local development documents have been taken into account;
  - (d) 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
  - (e) 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.

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## **2.0 SITE LOCATION AND CONTEXT**

### **2.1 Site Location & Surrounding Context**

- 2.1.1 The Site is in two parts as shown on Planning Drawing 3004-01-001. The route of the grid connection is illustrated on Planning Drawing 3004-01-002 and follows existing public highways to National Grid's Wymondley Substation. In total the area of the Site is circa 88 hectares (84.7 hectares excluding the grid connection and off-site planting). The Site comprises arable farmland with hedges, woodland blocks and hedgerow trees. These features are characteristic of the wider local landscape.
- 2.1.2 The northern part of the Site is located to the northeast of Great Wymondley. The Site boundary has been pulled back from Willian Road, compared to the pre-application boundary, to minimise possible visual effects on users of the Hertfordshire Way and properties on Willian Road. The northern and eastern boundary of this part of the Site is defined by hedgerows and woodland that separate the Site from the Hertfordshire Way. These features limit views into the Site from this public right of way and locations to the north and east of the Site. The western boundary is formed by an arable field, an existing woodland block and existing tall hedgerows between the woodland block and Graveley Lane. The woodland block and hedgerow limit views of the Site from the west. However, there are views of the Site from the initial section of the Hertfordshire Way from Willian Road as it crosses the open arable field to the west of the Site.
- 2.1.3 The southern boundary of this part of the Site is defined by Graveley Lane. Visibility into the northern part of the Site from Graveley Lane varies depending on the intactness of the roadside hedges and the height of the roadside embankment. The central third of the Site boundary being more open than the lengths to the east and west. These sections of Graveley Lane are more enclosed by earth banks and existing hedgerows respectively.
- 2.1.4 Graveley Lane is also the northern boundary of the southern part of the Site. Views from Graveley Lane to the south are restricted by rising roadside banks with vegetation to the east, but are more open to the west, due to the absence of roadside hedgerows. The western Site boundary is formed by intact existing hedgerows with hedgerow trees. Arable fields are located between the Site and Priory Lane. Wymondley Priory is located c.300m to the west of the Site and is separated from the Site by arable fields with hedgerows and trees that limit

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- intervisibility. The A1(M) marks the eastern boundary of the Site and there are intermittent views into the Site where roadside vegetation is absent. To the east of the A1(M) is the settlement of Graveley. Visibility of the Site from the east of the A1(M) is limited by landform and vegetation.
- 2.1.5 The southern boundary of the Site is formed by an intact hedgerow with hedgerow trees. To the south of this boundary feature there is a large arable field between the Site and Stevenage Road. Views of the Site from Stevenage Road are limited by the rising ground of the intervening arable field and the southern boundary hedgerow forming the skyline.
- 2.1.6 The Site is served by existing farm access tracks from Graveley Road, which would be upgraded for use in construction and maintenance.
- 2.1.7 There is a National Grid gas pipeline that passes through the southern part of the Site and offsets are provided to ensure cathodic protection of the pipeline. Access would be maintained for maintenance of the pipeline, if required.
- 2.1.8 The proposed grid connection route is illustrated on Planning Drawing 3004-01-002 and would be located within the carriageway or verge along Graveley Lane, Priory Lane, Stevenage Road, Blakemore End Road and Stevenage Road to the National Grid Substation at Wymondley.
- 2.1.9 There are no Public Rights of Way (PROW) across the Site, the closest being the Hertfordshire Way which is located along the northern boundary of the northern parcel of land. The bridleway that follows the north-eastern Site boundary (Wymondley 001) forms part of National Cycle Network (NCN) 12. Whilst marked on OS mapping the section of the Hertfordshire Way linking the bridleway (Wymondley 001) to Willian Road is not recorded on the online version of Hertfordshire's definitive map.
- 2.1.10 The Site is not subject to any landscape designations. The closest landscape designation is the Chilterns AONB, which is located over 5km to the west of the Site. The built-up area of Hitchin separates the Site and designated landscape. Further details are provided in Appendix B: Landscape and Visual Assessment.
- 2.1.11 The nearest conservation area is Great Wymondley. There are a number of listed buildings within Great Wymondley. However, there would be limited, if any, intervisibility between these heritage assets and the Site. Further details are provided in Appendix in Appendix C: Heritage Assessment.

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- 2.1.12 There is a listed building (the grade II listed Conduit Head at Priory Farm) located c. 70m to the west of the Site. This heritage feature also forms part of the Wymondley Priory Scheduled Monument (SM), the main part of which is located c. 300m to the west and is separated from the Site by an arable field and associated field boundaries. Within the Priory there is a Grade I listed building and the associated Tithe Barn is Grade II\*. There are also two further Grade II listed buildings within the SM complex and one more immediately adjacent. Further details are provided in Appendix in Appendix C: Heritage Assessment.
- 2.1.13 The Site of Great Wymondley Castle (also a SAM) is to the south of Graveley Road on the eastern side of Great Wymondley, which is approximately 260m from the Site at its nearest point. There is also evidence of a Roman Settlement between the northern part of the Site and Great Wymondley. Further details are provided in Appendix in Appendix C: Heritage Assessment.
- 2.1.14 There are no ecological designations on the Site. The Site is within the Impact Risk Zones for Oughtonhead Lane SSSI (c.4.3km), Wain Wood SSSI (c.4.4km) and Knebworth Woods SSSI (c.4.4km). However, the Proposed Development does not fall under the type of development that would require consultation with Natural England for these designations. There are Local Nature Reserves which are a similar distance or closer: Purwell Meadows (c.1.5km), Norton Common (c.4km), Weston Hill (c.4km) and Oughtonhead Common (c.4.5km)
- 2.1.15 The Site is entirely located within flood zone 1 ('low risk' of river or sea flooding). There are small areas with a low, medium and high risk of surface water flooding within the Site.
- 2.1.16 The Site is located within an extensive area of Green Belt that separates Hitchin from Stevenage.
- 2.1.17 The Site comprises Grade 2 and 3a best and most versatile agricultural land.

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### **3.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT**

#### **3.1 Proposed Development**

3.1.1 The Applicant is proposing to the construct and operate a photovoltaic solar array and ancillary development for a period of up to 40 years, after which the Site would be decommissioned unless planning permission is secured for continued operation. The development is illustrated on Planning Drawing 3004-01-03 and would comprise the following main elements:

- c.150,000 Photovoltaic Solar Panels and associated support frames;
- 22 No. Inverter/Transformer Stations;
- 22 No. Battery Storage Containers;
- 1 No. Storage Containers;
- 1 No. Switchgear Building;
- 1No. Control Room Building;
- Grid Connection Cable to National Grid's Wymondley Substation;
- c.2.1km of new/resurfaced internal access tracks (3m wide and constructed using Type 1 stone);
- 2 No. improved existing access points off Graveley Lane;
- Ditch culverts for track crossings;
- 7.8km deer/stock fencing;
- c.40 No. 4m High CCTV cameras;
- c. 20,370 m<sup>2</sup> Woodland Planting, and
- c. 2,040m hedgerow planting (new and gapping up of existing).

3.1.2 The solar array would export up to 49.995MWe of renewable electricity to the National Grid during peak operation and planning permission is being sought for a period of 40 years.

3.1.3 In addition to the general arrangement shown on Planning Drawing 3004-01-03 the Proposed Development is illustrated on the following Planning Drawings and described in the text below:

- 3004-01-01 Site Location Plan
- 3004-01-02 Statutory Plan
- 3004-01-03 General Arrangement Plan

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- 3004-01-04 Illustrative PV Frame & Panels
  - 3004-01-05 Indicative Inverter / Transformer Station
  - 3004-01-06 Storage Building
  - 3004-01-07 Control Building
  - 3004-01-08 Switchgear Building
  - 3004-01-09 Battery Storage Container
  - 3004-01-10 Indicative Deer / Stock Fencing, Access Track & CCTV
  - 3004-01-11 Typical Cable Trench
  - 3004-01-12 Landscape Proposals

3.1.4 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***

3.1.5 The Solar Farm comprises the installation of approximately 160,000 static solar PV panels mounted to a steel and aluminium frame at an angle of approximately 20° to 25° and facing south. The indicative layout of the solar panels is illustrated on Planning Drawing 3004-01-03 and a typical solar panel frame configuration is illustrated on Planning Drawing 3004-01-04. 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.

3.1.6 The solar PV support frames would be arranged into rows set approximately 5m apart and the maximum height of the panels along the back edge of the array would be approximately 3m.

3.1.7 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. A typical post cross section is illustrated on Planning Drawing 3004-01-04. The physical footprint of the post would be approximately 9.2cm<sup>2</sup> and it is estimated that approximately 32,000 posts will be required for the Proposed Development. As such, the total area of ground penetrating activity associated with the support frame posts would be approximately 30m<sup>2</sup> (c.0.004% of the total Site total Site area, excluding grid connection and off-site planting).

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- 3.1.8 The posts 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. The rest of the support frame would then be fitted to the posts to create angled support tables ready for the solar panel installation.
- 3.1.9 In areas of archaeological sensitivity surface mounted solar panel frames would be used to enable preservation of archaeology in situ. This is illustrated on Planning Drawing 3004-01-04 and would avoid below ground impact on any buried archaeology.
- 3.1.10 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.
- 3.1.11 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 the Inverter-Transformer Stations. These would be located throughout the Proposed Development adjacent to the internal access tracks. In areas of archaeological sensitivity surface mounted cable trunking would be used to avoid any impacts on buried archaeology.

#### ***Inverter – Transformer Stations***

- 3.1.12 The Inverter-Transformer Stations would be contained within a modified ISO shipping container or similar (approximately 12.19m long x 2.44m wide x 2.59m high), The footprint of each Inverter-Transformer Station would be c. 30m<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 3m. The Inverter-Transformer Stations would contain the inverters, transformers and circuit breakers necessary to connect the solar farm to the on-Site Switchgear Building. Planning Drawing 3004-01-05 illustrates a typical configuration for an Inverter-Transformer Stations. The total footprint occupied by the Inverter-Transformer Stations would be c. 660m<sup>2</sup>.



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### *Inverters*

- 3.1.13 The development requires the installation of up to twenty-two inverters. The inverters within each station 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 Switchgear Building and National Grid's 400kV Wymondley Substation. It is not possible to specify the precise type of inverter station as this will depend on a 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*

- 3.1.14 The development requires the installation of up to twenty-two inverters. as illustrated on Planning Drawings 3004-01-03 and 3004-01-05. The transformers would control and increase the voltage of the electricity generated by the solar panels before it reaches the on-Site Switchgear Building and distribution network.
- 3.1.15 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

### *Circuit Breaker*

- 3.1.16 Within the Inverter-Transformer Station circuit breakers would be provided to enable areas of the solar farm to be disconnected and isolated from the on-Site Switchgear building and wider distribution network.

### ***Battery Energy Storage System Containers***

- 3.1.17 The Proposed Development would comprise up to twenty-two Battery Energy Storage Systems (BESS) containers as illustrated on Planning Drawings 3004-01-03 and 3004-01-09.
- 3.1.18 The BESS containers would be contained within a modified ISO shipping container or similar (approximately 12.19m long x 2.44m wide x 2.59m high), The footprint of each BESS container would be c. 30m<sup>2</sup> and would be supported by strip or slab foundations depending on localised ground conditions. The maximum height, with

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foundations, would be no greater than 3m. The total footprint occupied by the BESS containers would be c. 660m<sup>2</sup>.

- 3.1.19 The BESS containers would contain battery modules, two air conditioning units, a fire suppression system and a battery monitoring, management and protection system. Each container would be finished in Harrods Green or similar and would be prefabricated off-Site.
- 3.1.20 The BESS containers would be connected to the solar panels and inverter stations and would assist in managing frequency and voltage fluctuations on the transmission network by ensuring that supply and demand in the area are balanced.

#### *Fire Risk Management*

- 3.1.21 Fire risk within the BESS container is managed in several ways, (in addition to the base chemistry of the battery cells), including software and hardware fail safes and fire suppression systems. Temperature within each cell of each battery module is monitored by the BESS container monitoring system and any temperature variation within an individual module outside optimum operating conditions would trigger a response from the air conditioning units. If temperature increase continues or there is a failure of the air-conditioning units, the BESS container would automatically partially or fully shutdown to mitigate against the risk of thermal runaway and fire.
- 3.1.22 In the very unlikely event of a battery fire in one of the modules a fire suppression system would be triggered automatically. The fire suppression system would comprise FM200 gas or similar. This is a waterless fire protection system and as such there is no risk to soils or ground water as a result of operation. FM200 would be discharged into the fire risk area and would suppress any fire immediately. FM200 is a synthetic/chemical fire suppression gas and extinguishes a fire by removing the free radicals or heat elements from the fire triangle. (Oxygen, Heat and Fuel). FM200 systems are widely used for confined spaces and reach extinguishing levels in 10 seconds or less, stopping fires before they cause significant damage. FM200 extinguishes the fire quickly, which means less damage to adjacent battery modules and lower repair costs.
- 3.1.23 FM200 fire suppression is found as an active compound as a propellant in medical inhalers as such it is extremely safe within the correct fire suppression design.

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### ***Electrical Cabling***

- 3.1.24 On-Site electrical cabling is required to connect the Inverter-Transformer Stations to the proposed Switchgear Building and Control Room. In addition, a high voltage connection to the National Grid Wymondley substation is also required and this will be discussed separately below.
- 3.1.25 Planning Drawing 3004-01-11 provides details of an indicative cable trench. Cable trenches would generally run parallel and adjacent 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. Where ditch crossings are required, the trenches will typically be located a minimum of 1 m below the bottom of the ditch or use culvert crossings. 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.100m spacing. In areas of archaeological sensitivity surface mounted cable trunking would be used.
- 3.1.26 The total length of cable trenching is estimated to be approximately 10 km (c 6 km of CCTV cable trenches & 4 km of cable trenches connecting to the Switchgear Building). Assuming an 800mm wide cable trench this would result in the temporary disturbance of c. 8,000m<sup>2</sup>.

### ***Switchgear Building***

- 3.1.27 The switchgear building would be positioned adjacent to the Control Room on the southern edge of the Proposed Development nearest to the grid connection route, as illustrated on Planning Drawing 3004-01-03.
- 3.1.28 In an electric power system, switchgear is the combination of electrical disconnect switches, fuses or circuit breakers used to control, protect and isolate electrical equipment. Switchgear is used both to de-energize equipment to allow work to be done and to clear faults downstream.
- 3.1.29 The illustrative design for the switchgear building is shown on Planning Drawing 3004-01-08 and would house switchgear and metering equipment. The Switchgear Building would be located outside any flood risk area and as such would be

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protected in the unlikely event of flooding on the Site. The overall footprint of the switchgear building would be c.53m<sup>2</sup>.

### ***Control Room***

3.1.30 The Control Room would be housed in a half ISO container and 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.

3.1.31 The illustrative design for the Control Room is shown on Planning Drawing 3004-01-07 and the Control Room would be located outside of areas at risk of flooding. The overall footprint of the control room would be c.15m<sup>2</sup>.

### ***Storage Container***

3.1.32 One ISO Storage Containers would be provided within the solar farm array. This would provide secure storage for tools and spare parts for maintenance. The illustrative design for the Storage Containers is shown on Planning Drawing 3004-01-06. The Storage Container would be located outside of flood risk areas and the overall footprint of the container would be c.30m<sup>2</sup>.

### ***Access Tracks***

3.1.33 Access to the Site would utilise the existing farm access points off Graveley Lane.

3.1.34 The solar farm would require c.2.1km of new stone access tracks, approximately 3m wide to facilitate construction, operation and decommissioning. This would include a combination of upgrading existing agricultural tracks and construction of wholly new tracks. The new access tracks would be formed by excavating 200mm or topsoil and laying clean stone with reduced fines over a geotextile membrane, depending on ground condition. Excavated topsoil would be stored in a low mound adjacent to the track for use in restoration. The indicative layout of the access tracks is illustrated on Planning Drawings 3004-01-03 and 3004-01-10 illustrates an indicative cross section through a typical access track construction. The total area of development associated with the access tracks would be approximately 6,300m<sup>2</sup>.

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### ***Security***

- 3.1.35 Security would be provided by 2m high deer/stock fencing and pole mounted CCTV cameras. The location of the security fencing is illustrated on Planning Drawing 3004-01-03 and the indicative appearance is illustrated on Planning Drawing 3004-01-10. The CCTV poles would have a maximum height of 4m 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 additional lighting would be required. The indicative CCTV is illustrated on Planning Drawing 3004-01-10.

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

- 3.1.36 Due to the nature of the proposed development the final position of the panels, support frames, cable runs and inverter 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***

- 3.1.37 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 establishing and maintaining a grass sward beneath the panels.
- 3.1.38 All new Site access tracks would be constructed of permeable stone and would infiltrate to groundwater. Inverter-Transformer Stations, BESS Containers, Switchgear Building, Control Room and Storage Containers would drain to localise filter drain that would allow percolation to ground. Further detail of the Flood Risk Assessment and drainage strategy are provided at Appendix D: Flood Risk Assessment.

### ***Lighting***

- 3.1.39 Lighting would be limited to the Switchgear Building, Control Building and Inverter-Transformer Stations. Low level lighting would be positioned above access doors and would only be activated by passive infra-red (PIR) sensors for

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security/emergency purposes or when switched on by a maintenance engineer. No areas of the Proposed Development would be continuously lit during operation.

### ***Landscaping***

- 3.1.40 The proposed solar array has been designed to retain all existing hedgerows and woodland vegetation. A minimum of 6m buffer has been allowed between these features and solar farm boundary fencing. These buffer areas would be sown with a species rich wildflower and grass mix that would be managed for biodiversity benefits. The arable land within the boundary fence would be seeded with a low intensity grazing grass mix and hedgerows within the Site would be allowed to grow to enhance biodiversity and screening. Additional hedgerows and woodland planting is also proposed to provide further screening, landscape integration and habitat connectivity.
- 3.1.41 The landscape proposals for the Site are illustrated indicatively on Planning Drawing 3004-01-12 and would be developed in detail prior to commencement of the development. The existing landscape character of the Site and its immediate surroundings is defined by the large arable fields and substantial blocks of woodland and mature hedgerows. The landscape proposals would build on these existing landscape features and would seek to enhance biodiversity, increase screening of the Proposed Development and allow continued agricultural use through grazing.
- 3.1.42 The landscape proposals are summarised as follows and described in more detail below:
- Grassland within the perimeter security/stock fencing suitable for sheep grazing;
  - Species rich grassland outside of perimeter security/stock fencing and along hedge margins;
  - Woodland planting along western and northern boundary of northern parcel of land.
  - New hedgerows along Graveley Lane and the A1(M);
  - Gapping up existing hedgerows, and
  - Management of existing hedgerows to a height of c.3-5m

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*Grassland*

- 3.1.43 Most of the Site would be sown with a low intensity sheep grazing mix specifically designed for solar farms. The seed mix would be the same as that successfully used and grazed for a number of years at AGR's existing solar farms. The seed mix would comprise long lasting and slow growing cultivars of the species listed in Table 2.1 below.

**Table 2.1: Grassland Seed Mix**

<b>Species</b>	<b>% Mix</b>
Meadow Fescue	15.0
Perennial Ryegrass	16.0
Smooth Stalked Meadow Grass	20.0
Timothy	19.0
Creeping Red Fescue	15.0
Hard Fescue	10.0
White Clover	3.0
Wild White Clover	2.0

- 3.1.44 The sowing of grass seed mix would be at a rate of 25kg per hectare. Prior to seeding the soil would be cultivated and made level, and once seeded the areas would be rolled to aid germination. Once the seed has germinated the areas would be mechanically cut at 4 weeks and then every two weeks until the grass sward is established and ready for grazing. Every 10 years the areas would be over sown to boost the sward vigour for continued grazing.

*Species Rich Grassland*

- 3.1.45 All other areas that would not be grazed would be seeded with species rich grassland and wildflowers to enhance the overall biodiversity value of the Site.
- 3.1.46 Species rich grassland would be sown in all areas outside the perimeter fence and along hedge margins as indicated on Planning Drawing 3004-01-12. The seed mix would comprise a mixture of fine-leaved grasses and wildflowers that are relatively slow to establish, but after the first establishment year provide a show of flowers which will provide interest for insects, birds and mammals. The indicative species composition for the species rich grass mix is listed in Table 2.2 below.

**Table 2.2: Species Rich Seed Mix**

<b>Species</b>	<b>% Mix</b>
<b>Wildflowers</b>	
Achillea millefolium	1
Betony	0.5
Common Knapweed	2.5
Wild Carrot	2.5
Hedge Bedstraw	2
Ladies Bedstraw	1
Ox-Eye Daisy	3
Musk Mallow	6.8
Ribwort Plantain	0.1
Salad Burnet	0.1
Meadow Buttercup	0.1
Yellow Rattle	0.1
White Campion	0.3
<b>Grasses</b>	
Common Bent	8
Crested Dogstail	28
Smaller Catstail	4
Red Fescue	24
Smooth Stalked Meadow Grass	16

3.1.47 The sowing species rich grass would be at a rate of 25kg per hectare. Prior to seeding the soil would be cultivated to a fine seed bed and would be rolled before and after sowing to aid germination. Once the seed has germinated the areas would be mechanically cut regularly to control weeds. Once established the areas would be cut once or twice a year after flowering.

#### *Hedgerows*

3.1.48 Native hedgerows would be planted along the highway boundaries of the Site with Graveley Lane and the A1(M) as indicated on Planning Drawing 3004-01-12. These hedgerows would provide visual screening and habitat connectivity with



other existing hedgerows and woodland blocks located within the Site. In addition, some existing hedgerows would be gapped up and/or be allowed to grow to 3-5m high, as indicated on Planning Drawing 3004-01-12. The indicative species composition for the proposed hedgerows is listed in Table 2.3 below

**Table 2.3: Native Hedgerow Mix**

Species	Common Name	% Mix
Acer campestre	Field Maple	10
Corylus avellana	Hazel	15
Crataegus monogyna	Hawthorn	30
Prunus spinosa	Blackthorn	30
Rosa canina	Dog Rose	5
Sambucus nigra	Elder	10

### *Woodlands*

3.1.49 Native woodland would be planted along the western and northern boundaries of the Site as indicated on Planning Drawing 3004-01-12. This woodland would provide screening from the North Hertfordshire Way and would provide enhanced habitat links between areas of existing woodland. The indicative species composition for the proposed hedgerows is listed in Table 2.3 below

**Table 2.4: Native Woodland Mix**

Species	Common Name	% Mix
Acer campestre	Field Maple	15
Betula pendula	Silver Birch	20
Carpinus betulus	Hornbeam	15
Corylus avellana	Hazel	10
Malus sylvestris	Crab apple	10
Prunus spinosa	Blackthorn	10
Quercus robur	Common Oak	10
Sambucus nigra	Elder	10

### **Grid Connection**

3.1.50 A high voltage underground cable connection from the Switchgear Building to the National Grid substation would be required. The route would follow the carriageway or verge along Graveley Lane, Priory Lane, Stevenage Road, Blakemore End Road and Stevenage Road to the National Grid Substation at Wymondley, as illustrated on Planning Drawing 3004-01-02.

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3.1.51 The grid connection would be located underground and there would be no above ground infrastructure required other than within the operational substation compound.

### ***Operations***

3.1.52 Once the proposed solar farm is constructed access to the Site would be limited to routine maintenance operations and grazing. The Proposed Development would not be permanently staffed. Maintenance access to the Site would be by a small transit van or similar and the storage containers would contain spare equipment and tools for routine repairs and maintenance.

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

3.1.54 The main operational noise would be associated with the Inverter-Transformers Stations and BESS containers. The noise impacts associated with these elements are assessed in Appendix F: Noise and Vibration Assessment.

3.1.55 As set out above the main activity during the operational phase of the development would be 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. Based on AGR's experience of working closely with farmers on other Sites it is anticipated that stocking levels would be in the order of c.150 ewes and c.225 lambs per years.

### ***Employment***

3.1.56 Typical staffing levels for arable cropping on the existing 84.7ha would be c.0.25 full-time equivalent (FTE) jobs. In contrast the sheep grazing proposed under the solar panels would support c. 1.5 FTE jobs for the duration of the solar farm operations.

3.1.57 In addition, maintenance and monitoring requirements during the lifetime of the Proposed Development are likely to generate a further 3.0 FTE jobs.

## **3.2 Construction**

3.2.1 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

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by the appointed designers and contractors. However, the following description enables the principal construction phases and methods to be understood.

### ***Programme***

3.2.2 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.

3.2.3 The construction period is anticipated to take approximately 36 weeks, including testing and commissioning.

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

- Establishment of Site compounds and entrance widening;
- Construction of Site access tracks and temporary crane hard standings at inverter locations;
- Erection of deer fencing and gates to Site perimeter;
- Installation of solar panels and frames;
- Installation of CCTV poles and cameras;
- Installation of inverters and transformer stations;
- Installation of BESS containers;
- Installation of control building and switchgear buildings,
- Installation of storage containers;
- Cultivation and seeding;
- Grid connection and transformer station, and
- Hedgerow and woodland planting;

### ***Construction Hours***

3.2.5 Construction activities would take place 7 days per week, during the following hours:

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

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3.2.6 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.
- Piling would only be undertaken between 09:00 – 17:00 each day Monday – Friday

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

3.2.7 Construction access would be via the proposed operational access point off Graveley Lane, identified on Planning Drawing 3004-01-03. All construction staff would arrive and park at temporary construction compounds 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. The traffic statement provided at Appendix H assumes that the average vehicle occupancy rate would be a minimum of 2 members of staff per vehicle.

3.2.8 The Transport Statement at Appendix I has concluded that the highways network can accommodate the proposed construction activities without improvements, other than widening the Site entrance to allow vehicles to pass.

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

3.2.9 The Site would be managed to provide dedicated areas within the development footprint for materials laydown, prefabrication activities, staff car parking, operative welfare facilities and offices.

3.2.10 Depending on ground conditions the compound areas would either be stripped of topsoil and surfaced with geotextile and stone or be formed using heavy duty construction matting to limit the need for excavation. Any excavated soils would be stored in mounds no more than 1m high around the perimeter of the compounds for use in post construction restoration.

3.2.11 The precise layout of the main construction compounds / laydown area and workers' vehicle parking would be a matter for the main construction contractor,

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who would not be appointed until after planning permission has been secured. However, it is likely to include a number of temporary cabins for offices / welfare and several storage containers, as well as parking and laydown areas.

3.2.12 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.

3.2.13 At the end of the construction period the construction compounds would be decommissioned. Stone/matting would be removed, and the areas would be restored to grassland for grazing.

### ***Construction Plant***

3.2.14 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 inverter and transformers.

3.2.15 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***

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

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

3.2.17 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.

3.2.18 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

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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

- 3.2.19 The excavations for the access tracks and foundations for the Inverter-Transformer Stations, BESS Containers, Switchgear Building, Control Room and Storage Containers would be stored adjacent to the excavations for use in restoration following decommissioning.

#### Temporary Excavations

- 3.2.20 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*

- 3.2.21 The foundations for the Inverter-Transformer Stations, Switchgear Building, Control Room and Storage Containers would be slab foundations or concrete sleepers, depending on ground conditions.
- 3.2.22 Foundation slabs and sleepers would be cast in-situ and concrete would either be delivered directly to the Site via concrete mixer lorry or concrete would be made from an on-Site concrete batching plant with aggregates being supplied to Site by HGV.

#### *Piling*

- 3.2.23 As set out above the support posts for the solar panel frame would be ram driven into the ground using several 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.

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### Plate 2.1: Typical GPS Solar Farm Pile Driver



- 3.2.24 In areas of archaeological or ecological sensitivity piled supports would be replaced by ground mounted concrete sleepers, as illustrated on Planning Drawing 3004-01-04.

#### *Construction Lighting*

- 3.2.25 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.
- 3.2.26 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.
- 3.2.27 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.
- 3.2.28 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.

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

- 3.2.29 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 a series of phase specific CEMP documents which define specific measures to be adopted during the construction of the various components of the scheme.
- 3.2.30 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 one the detailed design is completed to allow main contractor input.
- 3.2.31 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.
- 3.2.32 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;



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- waste management;
  - traffic management;
  - wildlife and natural features; and
  - contaminated material.

3.2.33 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 EIA and planning submission. This walkover would be used to update any of the defined construction procedures as necessary.

3.2.34 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.

3.2.35 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).

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### ***Decommissioning***

- 3.2.36 At the end of the Solar Farm's 40-year life the Proposed Development would be decommissioned, and the Site would be returned to arable use. Decommissioning would require similar plant to the construction phase and would result in very similar traffic impacts.
- 3.2.37 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 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.
- 3.2.38 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 because of the proposed development would not occur.

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

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- 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.

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

- 4.2.7 The Government published the ‘Net-Zero Strategy: Build Back Greener’ 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.
- 4.2.8 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.
- 4.2.9 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)
- 4.2.10 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’.*

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4.2.11 This acknowledgement increases the weight that should be given to the wider environmental benefits of renewable energy and the delivery of security of supply.

***Government response to the Committee on Climate Change 2021 Progress Report***

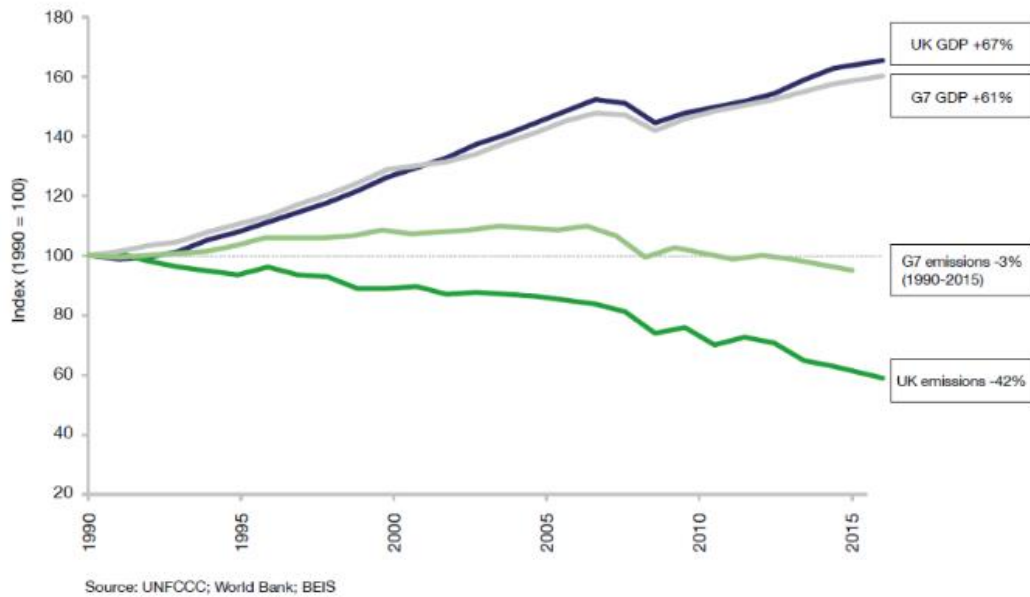
4.2.12 The Government published their response to the Committee on Climate Change (CCC) Progress Report (June 2021) in October 2021. The Government acknowledges that the CCC correctly emphasis that the journey to net zero is not yet half completed, and that this is the decisive decade for tacking climate change (Paragraph 1).

4.2.13 In response to the CCCs recommendations, Table A4 which relates to recommendations for BEIS confirms, the Government has published the Net-Zero Strategy which sets out how the UK will meet its ambitious climate targets (page 29). Furthermore, the Government also confirms, on page 44, that: *“Renewable power will form the backbone of our decarbonised energy system. We will need to continue the growth of offshore wind beyond our 2030 target, combined with similarly ambitious deployment of locally supported onshore wind and solar...”*

***Clean Growth Strategy (Updated April 2018)***

4.2.14 The Clean Growth Strategy was originally published by the Department for Business, Energy and Industrial Strategy (BEISS) in October 2017 and was updated in April 2018. The updated executive summary highlights that the UK has reduced emissions by 42% whilst growing the economy by two-thirds. This means the UK has reduced emissions faster than any other G7 nation. This is illustrated in Chart 4.1 below.

**Chart 4.1: UK & G7 Economic Growth & Emission Reductions<sup>4</sup>**



4.2.15 In 2016, 47% of UK electricity came from low carbon sources, around double the level in 2010. This progress has been aided by the falling costs of many low carbon technologies, such as solar and wind which can now be delivered without subsidy, if appropriately scaled to ensure commercial viability.

4.2.16 The updated executive summary goes on to state that:

*'In order to meet the fourth and fifth carbon budgets (covering the periods 2023 to 2027 and 2028 to 2032) we will need to drive a significant acceleration in the pace of decarbonisation and in this strategy we have set out stretching domestic policies that keep us on track to meet our carbon budgets' (emphasis added)*

4.2.17 To further drive down emissions throughout the next decade the Strategy sets out several policies and proposals. In respect of the power sector, the Strategy anticipates that by 2050 emissions from the power sector need to be close to zero. This position is reinforced by the Climate Change Act 2008 (2050 Target Amendment) Order 2019, referenced above.

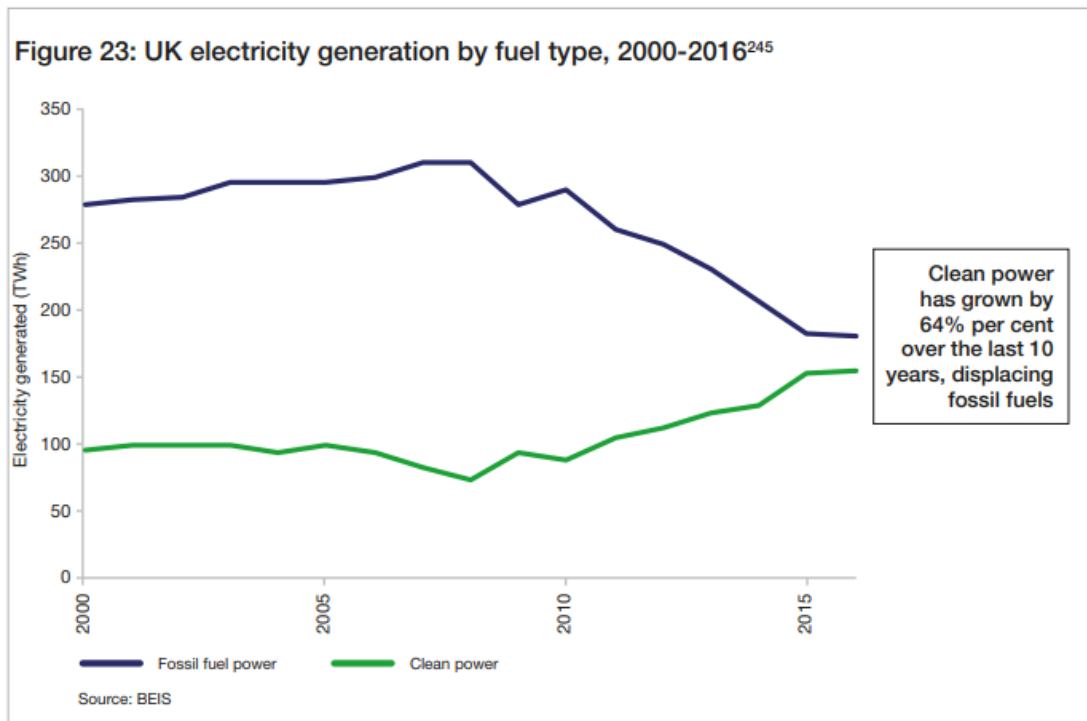
4.2.18 The Strategy sets out in 'Delivering Clean, Smart, Flexible Power' that (as of 2016):

<sup>4</sup> <https://www.gov.uk/government/publications/clean-growth-strategy/clean-growth-strategy-executive-summary>

*'Power sector emissions have fallen 49 per cent since 1990 as we have switched from coal to gas and renewable power such as wind and solar, with biomass conversions also playing an important transitional role, alongside improvements in the efficiency of our economy. Last year, 47 per cent of our electricity came from low carbon sources, with the rest mainly coming from coal and gas'*

4.2.19 Figure 23 of the Strategy illustrates that in 2016 clean power was approaching parity with fossil fuels. This is replicated in Chart 4.2 below. To achieve the revised 2050 Climate Change Act target of net zero this trend needs to be maintained by further investment in clean power sources, such as the Proposed Development.

**Chart 4.2:UK Electricity Generation by Fuel Type (2000-2016)<sup>5</sup>**



4.2.20 The Strategy sets out that the Government wants *'...a diverse electricity system that supplies our homes and businesses with secure, affordable and clean power. That means developing low carbon sources of electricity that are both cheap and clean, taking into account wider system impacts for all sources of generation'* (emphasis added). The Strategy goes on to state that *'this could be achieved by*

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/700496/clean-growth-strategy-correction-april-2018.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf)

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*growing low carbon sources such as renewables and nuclear to over 80 per cent of electricity generation, and phasing out unabated coal power.’ (emphasis added).*

- 4.2.21 Since 2016 this drive for clean power has been maintained and in 2019 clean power exceeded fossil fuels for the first time. Unabated coal power dropped from about 75% in the 1990s to just 2.1 % in 2019. The Government proposal is to end unabated coal by 2024 and this will need to be replaced by renewable and low carbon power sources, such as the Proposed Development as a matter of urgency.
- 4.2.22 Despite this initial success the UK still needs considerable and urgent investment in the clean power sector to deliver net zero by 2050. Solar PV can provide a significant contribution to delivering this legally binding target, whilst maintaining economic growth.

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

- 4.2.23 Since the Clean Growth Strategy was updated in April 2018 the Sixth Carbon Budget, required under the Climate Change Act, has been published<sup>6</sup>. 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.
- 4.2.24 The Electricity Generation Sector Summary for the Sixth Carbon Budget<sup>7</sup> sets out on page 14 that:

*‘Large-scale solar currently has 13 GW installed capacity in the UK, which requires 290 km<sup>2</sup>.<sup>8</sup> Maximising the potential of solar generation might entail using an additional 1,500 km<sup>2</sup>’*

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<sup>6</sup> <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

<sup>7</sup> <https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Electricity-generation.pdf>

<sup>8</sup> Assuming 45 MW/km<sup>2</sup>



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4.2.25 To maximise the potential of solar generation in the context of the Sixth Carbon Budget and to achieve the Government's Net Zero Target by 2050 could require an additional 150,000 hectares of land, which would be the equivalent of approximately 1,785 solar farms the scale of the Proposed Development. This highlights the scale of the challenge to deliver Net Zero by 2050.

4.2.26 Page 37 of the Sector Summary states that on average 3GW (3000MW) per year will need to be installed to reach the required level of solar generation. This is the equivalent of 60 solar farms per year of the same scale as the Proposed Development.

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

4.2.27 Support for renewable energy is clearly set out within the NPPF 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.'*

4.2.28 Paragraph 155 of the NPPF states that:

4.2.29 *'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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4.2.30 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.'*

4.2.31 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***

4.2.32 On 6<sup>th</sup> March 2014, the National Planning Practice Guidance (NPPG) web-based resource was launched. The 'renewable and low carbon energy' 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)

4.2.33 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***

4.2.34 Overarching National Policy Statement for Energy (EN-1), published in July 2011, makes the following statements (emphasis added):

*'As part of the UK's need to diversify and de-carbonise electricity generation, the Government is committed to increasing dramatically the amount of renewable generation capacity.'* (Paragraph 3.3.10)

*'An increase in renewable electricity is essential to enable the UK to meet its commitments under the EU Renewable Energy Directive. It will also help improve our energy security by reducing our dependence on imported fossil fuels, decrease*

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*greenhouse gas emissions and provide economic opportunities.’ (Paragraph 3.3.11)*

*‘The UK has committed to sourcing 15% of its total energy (across the sectors of transport, electricity and heat) from renewable sources by 2020 and new projects need to continue to come forward urgently to ensure that we meet this target. Projections suggest that by 2020 about 30% or more of our electricity generation – both centralised and small-scale – could come from renewable sources, compared to 6.7% in 2009.’ (Paragraph 3.4.1)*

*‘Paragraph 3.4.1 above sets out the UK commitments to sourcing 15% of energy from renewable sources by 2020. To hit this target, and to largely de-carbonise the power sector by 2030, it is necessary to bring forward new renewable electricity generating projects as soon as possible. The need for new renewable electricity generation projects is therefore urgent.’ (Paragraph 3.4.5)*

- 4.2.35 The figures in paragraphs 3.4.1 and 3.4.5 are now out of date in the context of the Climate Change Act 2008 (2050 Target Amendment) Order 2019. The revised target of net zero by 2050 introduces an even greater imperative to deliver increased renewable energy schemes, as matter of urgency.
- 4.2.36 National Policy Statement for Renewable Energy Infrastructure (EN-3), also published in July 2011, sets out the national policy for renewable energy projects. EN-3 sets out the importance of renewable energy in achieving the Government’s ambitious targets for renewable energy generation, highlighting that a *‘significant increase in generation from large-scale renewable energy infrastructure is necessary to meet the 15% renewable energy target.’* (emphasis added).
- 4.2.37 As set out above this target is now out of date and the Climate Change Act 2008 (2050 Target Amendment) Order 2019 introduces an even greater urgency to deliver renewable energy projects, such as the Proposed Development.

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

- 4.2.38 Updates of the National Policy Statements referenced above were published for consultation on 6<sup>th</sup> September 2021. The consultation period ends on 29<sup>th</sup> November 2021.

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4.2.39 Draft EN-1<sup>9</sup> updates the policy statement to reflect the Net Zero target by 2050. Draft EN-1 states at paragraph 3.3.21 that:

*‘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<sup>10</sup>’*

4.2.40 Draft EN-3<sup>11</sup> covers renewable energy infrastructure. The Government has updated the document to reflect the important role that renewables will play in developing a low carbon economy and meeting government’s net zero targets. Draft EN-3 sets out that:

*‘Solar farms are one of the most established renewable electricity technologies in the UK and the cheapest form of electricity generation worldwide. Solar farms can be built quickly and, coupled with consistent reductions in the cost of materials and improvements in the efficiency of panels, large-scale solar is now viable in some cases to deploy subsidy-free and at little to no extra cost to the consumer. The government has committed to sustained growth in solar capacity to ensure that we are on a pathway that allows us to meet net zero emissions. As such solar is a key part of the government’s strategy for low-cost decarbonisation of the energy sector’. (emphasis added)*

### **Future Energy Scenarios (2021)**

4.2.41 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.

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<sup>9</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1015233/en-1-draft-for-consultation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf)

<sup>10</sup> <https://www.gov.uk/government/publications/modelling-2050-electricity-system-analysis>

<sup>11</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1015236/en-3-draft-for-consultation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf)

4.2.42 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.

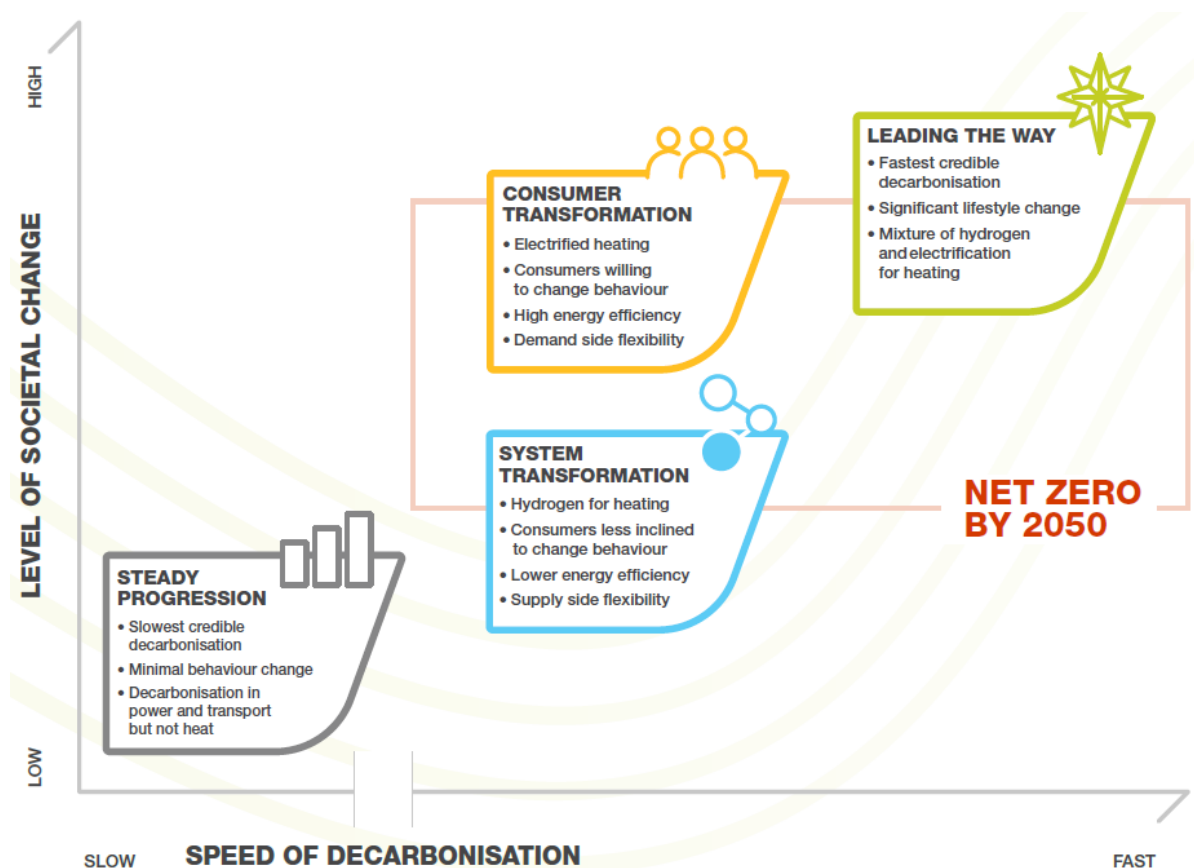
4.2.43 The latest version of the 'Future Energy Scenarios' (FES) document was published in July 2021. The FES considers four possible scenarios based around two drivers: the speed of decarbonisation and the level of societal change.

4.2.44 The four scenarios are:

- Steady Progression
- Consumer Transformation
- System Transformation
- Leading the Way

4.2.45 They are illustrated in Chart 4.3 below.

**Chart 4.3: Future Energy Scenarios: Scenario Matrix<sup>12</sup>**



<sup>12</sup> <https://www.nationalgrideso.com/document/173821/download>, Page 6.

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4.2.46 All four scenarios have net zero at their core and explore different pathways to achieving this. The four headline messages are:

1. Achieving net zero requires detailed policies and clear accountabilities, *coupled with an immediate and sustained focus on delivery*, to maintain the momentum provided by the Energy White Paper. (emphasis added).
2. Consumer behaviour is pivotal to decarbonisation – how we all react to market and policy changes, and embrace smart technology, will be vital to meeting net zero.
3. Holistic energy market reform is needed to drive the investment and behaviour changes needed to deliver net zero and ensure security of supply at a fair and reasonable cost for all consumers.
4. Significant investment in whole system infrastructure will be required over the coming decade – this should be optimised to ensure timely delivery and value for consumers. (emphasis added)

4.2.47 Key message 3 references that to deliver net zero, between 34 GW and 77 GW of new wind and solar generation could be required to meet demand in 2030. At the lowest end of the scale, this will require 4.25GW of new solar and wind schemes to begin generating electricity each year from January 2022, at the higher end of the scale this equates to 9.6GW per year. Clearly, this will require significant investment in wind and solar electricity generation across the UK over the next decade.

4.2.48 All scenarios:

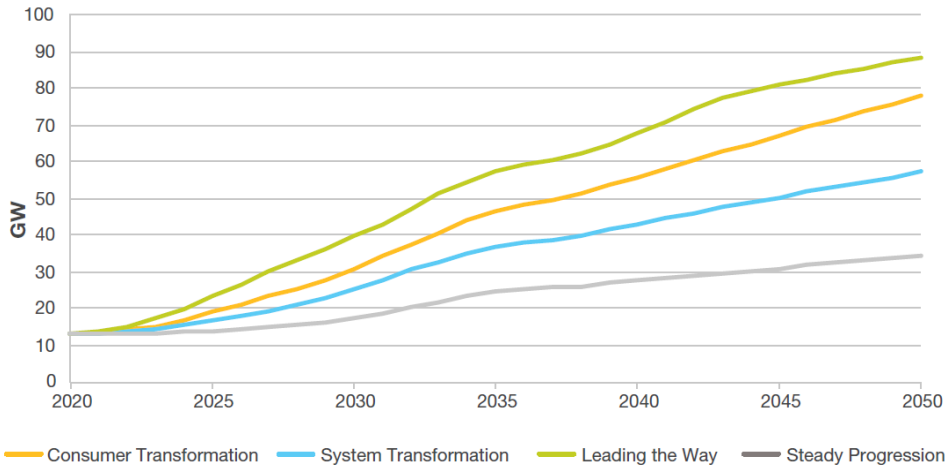
- are UK wide. The scenarios include regional variations in how the energy landscape could develop, where evidence is available;
- take a whole system view. They explore a future where the different parts of the energy market work together in new ways to maximise efficiency and value for consumers;
- include a mix of technologies, but show different levels of adoption; and
- model progress from today to 2050.

4.2.49 *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. *Steady Progression* would not achieve net zero, with a reduction of 73% compared to the level in 1990.

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- 4.2.50 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.
- 4.2.51 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.
- 4.2.52 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.
- 4.2.53 Cost reductions and the eligibility of solar PV for Contracts for Difference support, and co-location with storage are expected to boost solar growth in the 2020s, which would coincide with the Proposed Development. Post-2035 significantly higher levels of solar generation are forecast as increased electricity demand leads to greater demand for renewable generation.
- 4.2.54 Chart 4.4 clearly illustrates that significant increases in installed solar capacity will be required under all scenarios between now and 2050. The largest requirement will be for the *Consumer Transformation* and *Leading the Way* Scenarios.

### Chart 4.4: Solar capacity by scenario<sup>13</sup>

Figure SV.31: Solar generation capacity



4.2.55 The FES Data Workbook which accompanies the FES report provides the detailed annual breakdown of solar capacity in Giga Watts (GW) for each year up to 2050. The information is summarised below for this year and projects forward to 2030, 2040 and 2050.

	2022 (GW)	2030 (GW)	2040 (GW)	2050 (GW)	2021 - 2030 Increase (GW)
<b>Consumer Transformation</b>	14.3	30.8	55.8	77.8	16.5
<b>System Transformation</b>	13.9	25.4	43.0	57.2	11.5
<b>Leading the Way</b>	15.2	39.7	67.8	88.6	24.5
<b>Steady Progression</b>	13.3	17.4	27.8	34.3	4.1

Table 4.1: NG ESO: Solar Capacity by Scenario (GW)

4.2.56 Under all scenarios an increase in solar capacity is required between now and 2030, with further increases after that. Even under the *Steady Progression* scenario an increase of 4.1 GW of capacity is required between now and 2030, but this increases to 11.5 GW for *System Transformation*, 16.5 GW for *Consumer Transformation* and 24.5 GW for *Leading the Way*. Given the legally binding commitment to zero carbon the higher figures are considered more appropriate to

<sup>13</sup> <https://www.nationalgrideso.com/future-energy/future-energy-scenarios/fes-2021#fes-reports>. Taken from Figure SV31 of the FES Data Workbook.



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use as a reference, especially as *Steady Progression* does not achieve zero carbon.

- 4.2.57 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 Conclusion**

- 4.3.1 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 is particularly the case in respect of Green Belt policy where the wider environmental benefits of renewable energy project can be considered a very special circumstance in the planning balance.

- 4.3.2 It is explicit from the above considerations that at a strategic level there is significant policy support for renewable energy development. 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.

- 4.3.3 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 projects necessary for these mid and long-term goals. Whilst 2050 is 29 years away National Grid ESO forecast that significant solar PV development will be required by 2030 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 significant contribution to achieving the anticipated requirement for solar PV in advance of 2030 and this should be given considerable weight in the decision-making process.

- 4.3.4 In conclusion, there is a demonstrable need for the Proposed Development and the significant environmental, economic and social benefits it would deliver. The Proposed Development represents sustainable development in the context of the

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NPPF and as such there should be a presumption in favour of granting consent, unless other material considerations dictate otherwise.

4.3.5 A full consideration of other relevant planning policy and other material considerations is provided within Section 5.0 below.

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## 5.0 PLANNING POLICY CONTEXT AND APPRAISAL

### 5.1 Introduction

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

#### ***Local Development Plan***

5.1.2 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 adopted Development Plan comprises the following:

- Hertfordshire Minerals Local Plan adopted in 2007 (HCC)
- Hertfordshire Waste Core Strategy and Development Management Policies Document, 2012 (HCC)
- Hertfordshire Waste Site Allocations Document, 2014 (HCC)
- Saved policies from the North Hertfordshire District Local Plan No. 2 with Alterations adopted 1996 (NHDC)
- Wymondley Neighbourhood Development Plan (2011-2031) (Adopted 2018)

5.1.3 The Proposed Development does not relate to waste or mineral development and there are no waste allocations at this location. The adopted Minerals Local Plan includes policies for safeguarding minerals and the emerging Minerals Local Plan identifies some Sand & Gravel Minerals Safeguarding Areas within the Site boundary. However, due to the temporary and reversible nature of the Proposed Development there would be no permanent sterilisation of mineral reserves. As such the adopted Minerals Local Plan, Waste Core Strategy and Development Management Policies, and Waste Site Allocations Document are not relevant to the determination of the planning application and are not considered further.

#### ***Material Considerations***

5.1.4 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

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use or development of land is capable of being a material consideration in the determination of a planning application.

5.1.5 Such considerations can include the NPPF, emerging planning policies, government policy & strategy and Supplementary Planning Documents (SPDs).

5.1.6 North Hertfordshire District Council (NHDC) submitted a new Local Plan for examination on the 9<sup>th</sup> June 2017. There have been several hearings as part of the examination and a series of consultations in respect of the main modification and further main modifications in 2019 and 2021 respectively. The Inspector is currently reviewing the responses to the consultations on the Further Main Modifications, and depending on the points raised in the representations, it is anticipated that his Final Report will be issued during November 2021.

5.1.7 The emerging plan and its evidence base is at an advanced stage and as such weight can be given to its policies in the planning balance.

5.1.8 In addition, to the emerging Local Plan the following documents are material considerations in respect of the Proposed Development:

- Climate Change Act 2008 (2050 Target Amendment) Order 2019
- Net Zero Strategy: Building Back Better (2021)
- Sixth Carbon Budget (2021)
- Clean Growth Strategy (Updated April 2018)
- IPCC Special Report on Global Warming of 1.5°C (2018)
- National Planning Policy Framework (2021);
- National Planning Practice Guidance (2014);
- Solar PV Strategy (2013);
- National Policy Statements;
- Draft National Policy Statements;
- National Grid's Future Energy Scenarios (2021);
- Declaration of a Climate Emergency (2019) – North Hertfordshire District Council;
- Declaration of a Climate Emergency (2019) – Hertfordshire District Council;
- Council Plan 2020-2025;
- NHDC SPD – Design;
- NHDC SPG – NHDC Landscape Study 2011, and
- North Hertfordshire Local Plan 2011 – 2031 Green Belt Review Update 2018.

5.1.9 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. The material considerations section of this planning policy chapter provides coverage only of matters not specifically concerning need and which have not been addressed previously.

## 5.2 Planning Policy

5.2.1 The Pre-Application Advice from NHDC identified a number of planning policies of relevance to the Proposed Development. These are summarised below with additional policies added where considered relevant.

**Table 5.1: Relevant Policies**

<b>National Planning Policy Framework (NPPF)</b>
Paragraph 11 - Presumption in Favour of Sustainable Development
Section 11 – Making effective use of land
Section 12 - Achieving well-designed places
Section 13 – Protecting Green Belt Land
Section 14 – Meeting the needs of climate change, flooding and coastal change
Section 15 - Conserving and enhancing the natural environment
Section 16 – Conserving and enhancing the historic environment
<b>Adopted Development Plan</b>
<b>North Hertfordshire District Local Plan No.2 with Alterations</b>
Policy 2 – Green Belt
Policy 11 - Chilterns Area of Outstanding Natural Beauty
Policy 14 – Nature Conservation
Policy 16 – Areas of archaeological significance and other archaeological areas
<b>Wyndley Neighbourhood Development Plan (2011 – 2031) (Adopted 2018)</b>
Policy NHE1 - Landscape Character
Policy NHE2 - Biodiversity
Policy NHE3 - Wildlife and Ecology
Policy NHE8 - Landscaping schemes
Policy NHE9 - Historic Character and Heritage Assets
Policy GB1 - Green Belt
Policy FR1 - Flood Risk
Policy SLBE1 - Business development
<b>North Hertfordshire District Local Plan 2011-2031 (Emerging Local Plan)</b>
Strategic Objective ENV 3 - Protect, maintain and enhance the District's historic and natural environment, its cultural assets and network of open spaces, urban and rural landscapes
Strategic Objective ENV4 - Mitigate the effects of climate change by encouraging the use of sustainable construction techniques, the appropriate use of renewable energy technologies and reducing the risk of flooding
Policy SP1 - Presumption in Favour of Sustainable Development
Policy SP5 - Countryside and Green Belt
Policy SP11 - Natural resources and sustainability
Policy SP12 Green Infrastructure, landscape and biodiversity
SP13 – Historic Environment

Policy D1 - Design and Sustainability
Policy D3 - Protecting Living Conditions
Policy HE1 - Designated Heritage Assets
Policy HE3: - Non-designated heritage assets
Policy HE4 - Archaeology
Policy NE3: The Chilterns Area of Outstanding Natural Beauty (AONB)
Policy NE5 - New and improved public open space and biodiversity
Policy NEx (a)* – Strategic Green Infrastructure
Policy NEx (b) - Biodiversity and geological Sites
Policy NE7 - Reducing flood risk
Policy NE8: Sustainable drainage systems
Policy NE12 - Renewable and low carbon energy development

\* Bracket code added to differentiate between extra policies added to emerging plan policies.

5.2.2 The policy considerations listed above fall within a number of broad themes as follows:

**Table 5.2: Policy Themes**

<b>Theme 1: Principle of Development</b>
<b><i>NPPF</i></b>
Paragraph 11 - Presumption in Favour of Sustainable Development
Section 11 – Making effective use of land
Section 12 - Achieving well-designed places
Section 13 - Protecting Green Belt
Section 14 – Meeting the needs of climate change
<b><i>W NDP Policies</i></b>
Policy SLBE1 Business Development
<b><i>NHDC Emerging Policies</i></b>
Strategic Objective ENV4 - Mitigate the effects of climate change by encouraging the use of sustainable construction techniques, the appropriate use of renewable energy technologies and reducing the risk of flooding
Policy SP1 - Presumption in Favour of Sustainable Development
Policy NE12 'Renewable and low carbon energy development'
Policy D1 'Design and Sustainability'
<b>Theme 2: Green Belt</b>
<b><i>NPPF</i></b>
Section 13 - Protecting Green Belt
<b><i>NHDC Saved Policies e</i></b>
Policy 2 – Green Belt
<b><i>W NDP Policies</i></b>
Policy GB1 Green Belt
<b><i>NHDC Emerging Policies</i></b>
Policy SP5 'Countryside and Green Belt'
<b>Theme 3: Nature Conservation and Biodiversity</b>
<b><i>NPPF</i></b>
Section 15 - Conserving and enhancing the natural environment
<b><i>NHDC Saved Policies</i></b>
Policy 14 – Nature Conservation
<b><i>W NDP Policies</i></b>
Policy NHE2 Biodiversity
Policy NHE3 Wildlife and Ecology

<b><i>NHDC Emerging Policies</i></b>
Strategic Objective ENV 3 - Protect, maintain and enhance the District's historic and natural environment, its cultural assets and network of open spaces, urban and rural landscapes
Policy NE5 'New and improved public open space and biodiversity
Policy NEx (a) – Strategic Green Infrastructure
Policy NEx (b) - Biodiversity and geological Sites
<b>Theme 4: Cultural Heritage and Archaeology</b>
<b><i>NPPF</i></b>
Section 16 – Conserving and enhancing the historic environment
<b><i>NHDC Saved Policies</i></b>
Policy 16 – Areas of archaeological significance and other archaeological areas
<b><i>W NDP Policies</i></b>
Policy NHE9 Historic Character and Heritage Assets
<b><i>NHDC Emerging Policies</i></b>
Strategic Objective ENV 3 - Protect, maintain and enhance the District's historic and natural environment, its cultural assets and network of open spaces, urban and rural landscapes
SP13 – Historic Environment
Policy HE1 'Designated Heritage Assets'
Policy HE3: Non-designated heritage assets
Policy HE4 'Archaeology'
<b>Theme 5: Landscape and Visual</b>
<b><i>NPPF</i></b>
Section 15 - Conserving and enhancing the natural environment
<b><i>NHDC Saved Policies</i></b>
Policy 11: Chilterns Area of Outstanding Natural Beauty
<b><i>W NDP Policies</i></b>
Policy NHE1 Landscape
Policy NHE8 Landscaping schemes
<b><i>NHDC Emerging Policies</i></b>
Policy SP5 'Countryside and Green Belt'
Policy NE3: The Chilterns Area of Outstanding Natural Beauty (AONB)
<b>Theme 6: Other Environmental Issues</b>
<b><i>NPPF</i></b>
Section 14 – Meeting the needs of climate change, flooding and coastal change
Section 15 - Conserving and enhancing the natural environment
<b><i>W NDP Policies</i></b>
Policy FR1 Flood Risk
<b><i>NHDC Emerging Policies</i></b>
Policy SP11 - Natural resources and sustainability
Policy D3 'Protecting Living Conditions'
Policy NE7 - Reducing flood risk
Policy NE8: Sustainable drainage systems

5.2.3 The policy wording for each of the above is provided at Appendix J for ease of reference. This section of the PDAS provides a consideration of the identified themes in the context of the policies identified.

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5.2.4 The effects of the Proposed Development on various environmental considerations have been assessed within the technical appendices to this PDAS. 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 technical appendices.

### **5.3 Theme 1: Principle of the Development**

5.3.1 The need for renewable energy development has been clearly established in Section 4.0. The need is compelling and renewable energy needs to be delivered as soon as possible where there is grid capacity to deliver Net Zero and a stable and secure energy supply for the UK. This urgent need is reinforced by the UK Government's press release dated 7<sup>th</sup> October 2021<sup>14</sup> which commits to decarbonise the electricity system by 2035. The press release sets out that the focus up to 2035 will be on building a secure, home-grown energy sector that reduces reliance on fossil fuels and exposure to volatile global wholesale energy prices. The 2035 target is also included in the Government's Net Zero Strategy. This announcement brings forward by 15 years the government's commitment to a fully decarbonised power system by 2050. To ensure this ambition becomes a reality, the government will need to ensure the deployment of a new generation of home-grown technologies – from offshore wind, hydrogen and solar, to nuclear, onshore wind and Carbon Capture and Storage.

5.3.2 The accelerated timescale for decarbonisation of the electricity system in the UK will require even greater levels of solar energy development between now and 2030/35 than is set out in the Sixth Carbon Budget and National Grid's Future Energy Scenarios referenced in Section 4.0.

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

5.3.3 Each National Policy Statement (NPS) sets out the role of the NPS in the wider planning system, stating that:

*'In England and Wales this NPS may be a material consideration in decision making on applications that fall under the Town and Country Planning (TCPA) Act 1990 (as amended). Whether, and to what extent, this NPS is a material*

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<sup>14</sup> <https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035>



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*consideration will be judged on a case-by-case basis and will depend upon the extent to which the matters are already covered by applicable planning policy'*

5.3.4 NPSs related to energy projects are considered particularly relevant when determining applications under the TACP Act 1990. EN-1 and EN-3 recognise the national importance of energy infrastructure and seek to ensure stable, secure and low carbon energy sources.

5.3.5 National Policy Statement EN-1 calls for a reduction in the UK dependency on fossil fuels. The scale and type of necessary clean energy generating infrastructure likely to be required to replace fossil fuels and achieve the legally binding government target of net zero by 2050 is set out clearly in Section 4.0. This will need to be further accelerated to meet the government's 2035 ambition. The Proposed Development would assist in the delivery of the essential clean energy generating infrastructure required to mitigate the UK's contribution to climate change in advance of 2035, due to the availability of a suitable grid capacity.

5.3.6 Part 3 of NPS EN-1 sets out that considerable weight should be given to this national need when determining applications for energy developments. Paragraph 3.2.3 of NPS EN-1 sets out that:

*'The Government considers that, without significant amounts of large-scale energy infrastructure, the objectives of its energy and climate change policy cannot be fulfilled.'*

5.3.7 This requirement is now more imperative than when the NPS was written due to the higher legally binding net zero 2050 target and the recently announced accelerated timescale of 2035 for the electricity system. The NPS goes on to state that:

*'it will not be possible to develop the necessary amounts of such infrastructure without some significant residual adverse impacts. This Part also shows why the Government considers that the need for such infrastructure will often be urgent. The IPC should therefore give substantial weight to considerations of need. The weight which is attributed to considerations of need in any given case should be proportionate to the anticipated extent of a project's actual contribution to satisfying the need for a particular type of infrastructure'.*

5.3.8 Whilst the Proposed Development would result in a number of environmental effects it is considered that the wider environmental benefits of the scheme in

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respect of rapidly delivering clean energy generation and greenhouse gas emission reduction outweighs any limited harm that would occur.

- 5.3.9 The extant EN-3 focusses on combustion projects (biomass and waste), onshore and offshore wind. However, the new draft EN-3 that is currently undergoing consultation recognises the important role of a number of renewable energy technologies including solar. The draft EN-3<sup>15</sup> set out that:

*‘Solar farms are one of the most established renewable electricity technologies in the UK and the cheapest form of electricity generation worldwide. Solar farms can be built quickly and, coupled with consistent reductions in the cost of materials and improvements in the efficiency of panels, large-scale solar is now viable in some cases to deploy subsidy-free and at little to no extra cost to the consumer. The government has committed to sustained growth in solar capacity to ensure that we are on a pathway that allows us to meet net zero emissions. As such solar is a key part of the government’s strategy for low cost decarbonisation of the energy sector’.*

- 5.3.10 Paragraphs 2.48.11 that:

*‘Most 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 feasibility of a development and as such some larger developments may seek connection to the transmission network if there is available network capacity and/or supportive infrastructure. 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’. (emphasis added)*

- 5.3.11 Paragraphs 2.48.12 that:

*‘The applicant may choose a Site based on nearby available grid export capacity. Locating solar farms at places with grid connection capacity enables the applicant to maximise existing grid infrastructure, minimise disruption to local community infrastructure or biodiversity and reduce overall costs. Where this is the case, consideration should be given to the cumulative impacts of situating a solar farm in proximity to other energy generating stations and infrastructure’.*

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<sup>15</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1015236/en-3-draft-for-consultation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf)

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5.3.12 Site selection is discussed further in the context of Theme 2: Green Belt. However, it is clear from the draft EN-3 that suitable and affordable grid connection capacity is a critical part of the Site selection process in an era of subsidy free renewable energy generation.

5.3.13 Planning Act 2008: Guidance on the process for carrying out a review of existing NPSs <sup>16</sup> states, at paragraph 26 that:

*“any emerging draft National Policy Statements are potentially capable of being important and relevant considerations in the decision-making process, but the extent to which they are relevant is a matter for the relevant Secretary of State to consider with regard to the specific circumstances of each...application.”*

5.3.14 Given the significant shift in energy policy since the original NPS was drafted it is considered that the draft NPS is relevant to consideration of the planning application given the urgent need for low cost, low carbon and secure energy supplies by 2035.

#### ***National Planning Policy Framework***

5.3.15 The latest edition of the National Planning Policy Framework (the NPPF) was published in July 2021 and replaces previous editions. It represents the national guidance for the determination of planning applications and is a material planning consideration.

5.3.16 Paragraph 2 of the NPPF identifies that applications for planning permission should be determined in accordance with the development plan, unless material considerations indicate otherwise.

#### ***Achieving Sustainable Development***

5.3.17 Paragraph 7 of the NPPF states that the purpose of the planning system is to contribute to the achievement of sustainable development. Paragraph 8 identifies that there are three overarching objectives to sustainable development: an economic objective, a social objective and an environmental objective. The NPPF

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<sup>16</sup> <https://www.gov.uk/guidance/planning-act-2008-guidance-on-the-process-for-carrying-out-a-review-of-existing-national-policy-statements>

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- explains that these three objectives need to be pursued in mutually supportive ways (i.e. not considered individually).
- 5.3.18 The Proposed Development would support the economic objective by generating additional employment during both the construction/decommissioning stage and operational phase of the development. In addition, the Proposed Development would assist in supporting wider economic development by providing a stable, secure and low-cost energy supply that is consistent with the governments objective to decarbonise the electricity generation sector by 2035.
- 5.3.19 During the construction stage of the project there would be approximately fifty Site staff required per day, on average. During peak activities, this number may rise to one hundred and twenty. It is likely that this will include a number of opportunities for local people and businesses, particularly in respect of non-specialist solar farm activities such and civils work, electricians, as well as agricultural & landscape contractors.
- 5.3.20 During the operational phase employment at the Site would be limited to maintenance engineers and farm workers required for grass cutting, landscape maintenance, and sheep management. Arable farming would typically have a staffing level for arable cropping of c.0.25 full-time equivalent (FTE) jobs per year. In contrast the sheep grazing, and other land management operations proposed under and around the solar panels would support c. 1.5 FTE jobs for the duration of the solar farm operations (40 years). This would represent a six-fold increase in employment opportunities associated with the Site because of the Proposed Development.
- 5.3.21 In addition, maintenance and monitoring requirements during the lifetime of the Proposed Development are likely to generate a further 3.0 FTE jobs.
- 5.3.22 The social objective would be delivered by supporting the wider community through supplying low carbon energy that overtime would reduce emissions from fossil fuel generation, improve long term air quality and reduce climate change. In addition, the Proposed Development would not restrict use of public rights of way and will provide opportunities for interpretation in respect of renewable energy and biodiversity on the Site.
- 5.3.23 The environmental objective would be delivered through the significant net biodiversity gains associated with the landscape mitigation proposals and removal

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of the Site from intensive agricultural activities. In addition, the Proposed Development would deliver significant wider environmental benefits by helping achieve the Government's net zero target by 2050, as set out in Section 4.0 above.

5.3.24 Based on the above it is considered that the proposed Development would deliver the three overarching objectives that the planning system requires to achieve sustainable development.

*The Presumption in Favour of Sustainable Development*

5.3.25 Paragraph 11 sets out that plans and decisions should apply a presumption in favour of sustainable development. For decision-taking this means:

- *'approving development proposals that accord with an up-to-date development plan without delay; or*
- *where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:*
  - i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or*
  - ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole.'*

5.3.26 The saved policies of the Adopted North Hertfordshire Local Plan date from 1996 and as such only those policies that are consistent with the current NPPF are important for determining applications. However, the emerging plan and its evidence base is at an advanced stage and as such weight can be given to its policies in the planning balance.

5.3.27 Under Paragraph 11 of the NPPF Councils should approve proposals without delay, where they accord with the Local Plan. The PDAS considers the Proposed Development against the NPPF, saved policies and emerging policies of the development plan. Where there is a degree of policy tension in respect of green belt, best and most versatile agricultural land, heritage and landscape it is considered that this is outweighed by the significant benefits of the scheme in terms of the need for renewable energy, the climate change emergency and biodiversity gain.

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*Building a Strong and Competitive Economy*

- 5.3.28 Paragraphs 81 to 85 set out the Government’s commitment to building a strong and competitive economy. Paragraph 80 states ‘*Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development.*’
- 5.3.29 The Proposed Development would provide an important source of renewable energy generation for local needs and help to reduce the current reliance on non-renewable sources. National Grid’s Wymondley Substation requires additional generation inputs to allow it to manage flows due to the high demand in the area. This is reflected in favourable Transmission Network Use of System (TNUoS) Charges.
- 5.3.30 As set out in Section 4.0 exploiting solar energy as a renewable energy source to help supply the national electricity need is of key importance if the UKs commitment to a net zero electricity system by 2035 and wider net zero by 2050 is to be achieved.
- 5.3.31 As set out above the Proposed Development would also support the local economy through the creation of local jobs through each phase of the development - during construction, operation, and decommissioning.

*Making Effective Use of Land*

- 5.3.32 Paragraph 119 states that the effective use of land in meeting need for specific uses should be promoted, while safeguarding and improving the environment and ensuring safe and healthy living conditions.
- 5.3.33 There is a recognisable need to promote renewable energy schemes considering the UKs commitment to achieving net-zero carbon emissions by 2050. As set out in Section 4.0 this will be delivered through several renewable energy pathways, with solar anticipated to make a significant overall contribution.
- 5.3.34 As discussed later in this section, it is considered that the potential environmental impacts of the proposed solar farm development can be made acceptable using appropriate mitigation and careful design. In addition, the temporary and reversible

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nature of the Proposed Development would not have permanent impacts on best and most versatile agricultural land or the openness of the green belt.

*Achieving Well-Designed Places*

5.3.35 Good design is given great importance in the NPPF as a key aspect of sustainable development. Paragraph 130 includes a series of six criteria to be considered as part of the decision-taking process. These state that developments:

- a) *'will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;*
- b) *are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;*
- c) *are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);*
- d) *establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;*
- e) *optimise the potential of the Site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and*
- f) *create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.'*

5.3.36 The layout of the Proposed Development has been developed to make best use of the existing field boundaries and field access points. The existing hedgerows and woodland within the Site would remain throughout the life of the development by ensuring a minimum of 6m buffers. In addition, existing services above and below the Site have been considered when designing the proposed layout.

5.3.37 In respect of potential archaeological constraints design solutions exist to ensure that important archaeological assets can be retained in-situ (see Theme 4 below). The landscape mitigation proposal that have been developed respect the existing landscape character and include new hedgerows, hedgerow management and woodland to enhance existing landscape features and provide integration and

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screening. As such it is considered that the Proposed Development responds to the requirements of the NPPF in respect of good design.

- 5.3.38 The design of the Proposed Development would enable effective decommissioning of the scheme and return of the Site to its previous agricultural quality, appearance, and use.

*Protecting Green Belt Land*

- 5.3.39 The NPPF sets out the five purposes of Green Belt and that the fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open, The essential characteristics of Green Belts are their openness and their permanence.

- 5.3.40 Renewable energy project are considered inappropriate development in the Green Belt. However, paragraph 151 sets out that:

*'When located in the Green Belt, elements of many renewable energy projects will comprise inappropriate development. In such cases developers will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources' (emphasis added)*

- 5.3.41 It is considered that the compelling need argument in Section 4.0 and grid connection constraints constitute very special circumstances that outweigh the limited harm to the purposes of the Green Belt and other environment effects. As such the principal of the Proposed Development is considered acceptable. This is discussed more fully below under Theme 2: Green Belt.

*Meeting the Challenges of Climate Change and Flooding*

- 5.3.42 The NPPF includes several policies designed to better support the implementation of renewable energy in the UK.

- 5.3.43 Paragraph 152 states that:

*'The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. 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, including the conversion of existing buildings; and support*



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*renewable and low carbon energy and associated infrastructure. (emphasis added).*

5.3.44 Paragraph 155 of the Framework states that, to help increase the use and supply of renewable energy, 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.'*

5.3.45 Significantly, when determining planning applications, paragraph 158 of the NPPF states that LPAs 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.'*

5.3.46 Notwithstanding the above, Section 4.0 of this PDAS clearly sets out the compelling need for renewable energy developments and in particular solar PV development in the context of the Climate Change Act 2008 (2050 Target Amendment) Order 2019 requirement to achieve net zero emissions by 2050. This has recently been accelerated by the UK government's ambition to decarbonise the electricity system by 2035, as set out in the Net Zero Strategy (2021).

5.3.47 The Proposed Development is in Flood Zone 1 and is not considered vulnerable to climate change in this respect.

#### ***NHDC Adopted and Emerging Local Plan***

5.3.48 The saved policies of the adopted local plan provides no specific policies in respect of the presumption in favour of sustainable development or the development of renewable and low carbon infrastructure. As such, the policies in the NPPF referenced above should take precedence.

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5.3.49 Policy SP1 of the emerging Local Plan sets out that:

*'This Plan supports the principles of sustainable development within North Hertfordshire. We will:*

*a. Maintain the role of key settlements within and adjoining the District as the main focus for housing, employment and new development making use of previously developed land where possible;*

*b. Ensure the long-term vitality of the District's villages by supporting growth which provides opportunities for existing and new residents and sustains key facilities;*

*c. Grant planning permission for proposals that, individually or cumulatively:*

*i. Deliver an appropriate mix of homes, jobs and facilities that contribute towards the targets and aspirations in this Plan;*

*ii. Create high-quality developments that respect and improve their surroundings and provide opportunities for healthy lifestyle choices;*

*iii Provide the necessary infrastructure required to support an increasing population;*

*iv. Protect key elements of North Hertfordshire's environment including biodiversity, important landscapes, heritage assets and green infrastructure (including the water environment); and*

*v. Secure any necessary mitigation measures that reduce the impact of development, including on climate change; and*

*d. Support neighbourhood plans and other local planning initiatives where they are in general conformity with the strategic policies of this Local Plan' (emphasis added).*

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- 5.3.50 The Proposed Development would help deliver the low carbon, renewable energy necessary for NHDC to achieve its aspiration of achieving a net zero carbon district by 2040<sup>17</sup> .
- 5.3.51 The Proposed Development would deliver the infrastructure necessary for a growing population that is transitioning into a low carbon economy. At the same time the proposed layout has been designed to retain existing habitats and to provide enhancements that will increase the biodiversity of the Site. Mitigation is also deliverable to address possible impacts on heritage & landscape.
- 5.3.52 Due to the scale of the challenge ahead, in respect of delivering a net zero electricity system by 2035 and the high reliance on solar. The land take required for significant solar deployment limits the potential use of previously developed land, which is considered more appropriate for industrial, residential and commercial development.
- 5.3.53 Policy NE12 sets out that solar farm application involving the best and most versatile agricultural land will be determined in accordance with national guidance and that other renewable energy development will be permitted subject to impacts upon landscape and visual amenity, environmental assets, historic environment, transport network, air quality, aviation and amenity of residents. With the exception of the temporary loss best and most versatile agricultural land it has been demonstrated by the assessment in the technical appendices and discussions in respect of the various themes below that the impacts of the Proposed Development have been minimised and can be effectively mitigation.
- 5.3.54 Policy NE12 defers to national guidance and policy in respect of best and most versatile agricultural land. NPS EN-1 paragraph 5.10.8 advises that applicants should seek to minimise impacts on the best and most versatile (BMV) agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5).
- 5.3.55 NPPF, Paragraph 174 advises that planning policies and decisions should enhance the local environment by recognising the economic and other benefits of the best and most versatile agricultural land.
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<sup>17</sup> <https://www.north-herts.gov.uk/Sites/default/files/NHDC-294%20NHDC%20Climate%20change%20Strategy%202021-26%20web.pdf>

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5.3.56 Paragraph: 013 (Reference ID: 5-013-20150327) of the Planning Practice Guidance (PPG) for renewable and low carbon energy sets out that:

*'Particular factors a local planning authority will need to consider include:*

- encouraging the effective use of land by focussing large scale solar farms on previously developed and non agricultural land, provided that it is not of high environmental value;*
- where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays.'*

5.3.57 The starting point for any Site search for an electricity generating development is identifying a suitable grid connection point with available capacity to accommodate the scale of development proposed. The Applicant identified Wymondley substation as a strategic facility with available capacity and has secured a 49.995MW grid offer to connect the Proposed Development if planning consent is secured.

5.3.58 As referenced above large-scale solar farms are becoming economically viable, without subsidy. However, any solar farm development needs to be carefully designed to ensure its financial viability, particularly in the current climate of increasing development costs. As such the Applicant defined a 4km radius around the Wymondley Substation to limit the potentially prohibitive costs of longer grid connections and third-party land negotiations. This is discussed more under Theme 2.

5.3.59 Firstly, brownfield Sites were considered by reviewing the North Hertfordshire Brownfield Land Register 2020. There are no Sites which are over 5 hectares and no Site within 4km of the grid connection point. The largest brownfield Site is only 4.01 hectares, and this is not of sufficient size to explore developing a subsidy free for solar energy development.

5.3.60 In response to the relevant policy requirements above, an Agricultural Land Classification Survey (ALC) has been carried out to provide information on the soils and agricultural land quality. The Agricultural Land Classification presented in Appendix H and established that c.68% of the Site is classified as Grade 3a and

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32% as Grade 2. As such the Site is considered BMV agricultural land in the context of the NPPF and PPG.

- 5.3.61 However, unlike many types of development that would result in the long-term irreversible loss of BMV agricultural land solar farms are unlikely to lead to significant long-term loss, as a resource for future generations. This is because the solar panels would be secured to the ground by support table posts with limited soil impacts. These can be removed in the future with no permanent loss of agricultural land quality likely to occur, provided the development is undertaken to high standards and decommissioning follows best practice. However, during the life of the proposed development it is likely that there will be a reduction in agricultural productivity over the whole development area with only sheep grazing being practical.
- 5.3.62 This approach to BMV agricultural land is consistent with recent Natural England consultation responses<sup>18</sup> in respect of the applicant's consented solar farm on BMV agricultural land adjacent to Burwell Substation in East Cambridgeshire.
- 5.3.63 Policy D1 of the emerging Local Plan reflects national guidance that development proposals should consider the potential for minimising their impact on the environment both during construction and throughout the life of the development whilst creating development that responds to and enhances its surroundings. The design of the Proposed Development has been prepared following landscape and visual impact assessment, ecological assessments, heritage assessments, noise assessment, glint and glare assessment and agricultural land assessment. These assessments have all contributed to the sustainable design of the Proposed Development. This has ensured that significant effects have been designed out or can be effectively mitigated by appropriate planting or construction techniques.

### ***Wymondley Neighbourhood Development Plan***

- 5.3.64 The plan was adopted in 2016 and paragraph 3.7 sets out that the plan has been developed in the context of the three mutually dependent dimension of sustainability referenced in paragraph 8 of the NPPF, including moving to a low carbon economy. However, there is no further reference to low carbon energy or renewable energy

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<sup>18</sup> [https://pa.eastcambs.gov.uk/online-applications/files/F46C60B9D8FA16CFF479C10F4FCBBB2A/pdf/20\\_00557\\_ESF-Consultee\\_Response-1112498.pdf](https://pa.eastcambs.gov.uk/online-applications/files/F46C60B9D8FA16CFF479C10F4FCBBB2A/pdf/20_00557_ESF-Consultee_Response-1112498.pdf)

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development and as such there is a degree of inconsistency with the current NPPF and government strategy in this respect.

- 5.3.65 The pre-app response identifies Policy SLBE1: Business Development as relevant. This policy sets out that any proposed business development within Wymondley Parish should be appropriate in terms of location, scale and type; in keeping with the character and environment of our parish. It goes on to state that due to the surrounding Green Belt, and the associated development prohibitions, there are no justifiable opportunities for development of additional business premises outside of Little Wymondley. With limited space within Little Wymondley, expansion of the Parish's existing businesses, (or development of additional businesses), would therefore necessitate a move to a larger or more suitable location within existing industrial Sites in nearby towns, or consider alternatives.
- 5.3.66 As set out above the scale of solar development required to achieve the government net zero target is significant and will require large areas of land that would be impractical to deliver on brownfield land or existing industrial Sites. The Proposed Development has been carefully designed to minimise environmental effects and to respect the scale of the existing landscape and landscape features. Effects on the settlement of Great Wymondley and Little Wymondley would be limited to temporary construction works associated with the grid connection. The layout and mitigation has been specifically designed to minimise any long-term effects on the villages.

#### Assessment

- 5.3.67 The Proposed Development delivers on the three principal objectives of sustainable development, as set out in the NPPF. At the same time the Proposed Development would deliver the type of renewable energy project envisaged in National Policy Statement EN-1 and Draft National Policy Statement EN-3. The project would support the UK's legally binding target of net zero by 2050 and would help deliver the decarbonisation of the electricity system by 2035 as required by the Net Zero Strategy. Proposed Development has been carefully designed to protect and enhance existing landscape and biodiversity features and mitigation is possible to ensure that there is no long-term permanent effects in respect of archaeology, noise or agricultural land.
- 5.3.68 The assessments undertaken to understand the impacts of the Proposed Development have concluded that there will be no significant adverse long-term

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impacts on the environment or character of the countryside, that would outweigh the wider environmental benefits of the renewable energy generation. Particularly in the context of the climate change emergency announced by North Hertfordshire and the need to decarbonise the electricity system by 2035.

- 5.3.69 The Proposed Development should be considered sustainable development in the context of the NPPF and as such there should be a presumption in favour of the development. Particularly considering 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.'*

- 5.3.70 The Proposed Development is supported by the NPPF, NPS EN-1, Draft NPS EN-3, NHDC Emerging Policies SP1 & D1. There is tension with Policy NE12 in respect of the use of best and most versatile agricultural land, but this is eased by the position adopted by Natural England in respect of the reversibility of the development and that permanent loss would not occur. Policy SLBE1 of the Neighbourhood plan is considered of limited relevance in respect of this type of development.

## **5.4 Theme 2: Green Belt**

- 5.4.1 This section provides a detailed assessment of the Proposed Development in the context of relevant planning policy and guidance relating to the Green Belt. The assessment identifies the relevant local and national Green Belt policies and subsequently appraises the Proposed Development against them.

### ***Green Belt Policy***

#### *North Hertfordshire Spatial and Policy Context*

##### *Spatial Context*

- 5.4.2 Within North Hertfordshire, the Site is within the London Metropolitan Green Belt, which covers Hitchin, Letchworth Garden City, Baldock, and Stevenage (which is outside North Hertfordshire District). The Proposed Development is between Hitchin, Letchworth Garden City, and Stevenage.

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- 5.4.3 In addition to the London Metropolitan Green Belt, part of the Luton Green Belt covers the west of the District under the adopted North Hertfordshire District Local Plan No. 2 with Alterations (1996).
- 5.4.4 North Hertfordshire District is at an advanced stage with its Emerging Local Plan (ELP), the North Hertfordshire District Local Plan 2011-2031. This ELP proposes a significant extension to the Green Belt to include most of the land between the London Metropolitan Green Belt and Luton Green Belt.
- 5.4.5 In addition to Green Belt designation, North Hertfordshire District operates a policy in its adopted and emerging local plans for 'Rural Areas beyond the Green Belt'. The intent of this policy is essentially to control development of the countryside.

#### *Policy Context*

##### *National Policy Context*

- 5.4.6 The Governments approach to development within the Green Belt is contained in Chapter 13 'Protecting Green Belt Land' of the NPPF.
- 5.4.7 The NPPF states that *"the fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belt are their openness and their permanence."*
- 5.4.8 Land designated as Green Belt should serve five purposes, as set out in paragraph 138 of the NPPF:
- a. "to check the unrestricted sprawl of large built-up areas;*
  - b. to prevent neighbouring towns merging into one another;*
  - c. to assist in safeguarding the countryside from encroachment;*
  - d. to preserve the setting and special character of historic towns; and*
  - e. to assist in urban regeneration, by encouraging the recycling of derelict and other urban land."*
- 5.4.9 Paragraph 145, sets out that: *"...local planning authorities should plan positively to enhance their [Green Belts] beneficial use, such as looking for opportunities to provide access; to provide opportunities for outdoor sport and recreation; to retain an enhance landscapes, visual amenity and biodiversity; or to improve damaged or derelict land."*



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- 5.4.10 Paragraph 147 states “*Inappropriate development is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances.*” Solar farms are not identified under paragraphs 149 and 150 as being ‘not inappropriate’ development. Indeed, paragraph 151 of the NPPF states that “*When located in the Green Belt, elements of many renewable energy projects will comprise inappropriate development. In such cases developers will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources.*” [emphasis added]
- 5.4.11 Paragraph 148 of the NPPF states that “*When considering any planning application, local planning authorities should ensure that substantial weight is given to any harm to the Green Belt. ‘Very special circumstances’ will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations.*”
- 5.4.12 It is therefore the purpose of this appraisal to establish that Very Special Circumstances (VSC) do exist for the Proposed Development, and that the VSC outweigh the harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal.

*Adopted Local Plan Green Belt Policy*

- 5.4.13 Policy 2 ‘Green Belt’ of the adopted Local Plan sets out that: “*In the Green Belt, as shown on the Proposals Map, the Council will aim to keep the uses of land open in character. Except for proposals within settlements which accord with Policy 3, or in very special circumstances, planning permission will only be granted for new buildings, extensions, and changes of use of buildings and of land which are appropriate in the Green Belt, and which would not result in significant visual impact.*”

*Emerging Local Plan Green Belt Policy*

- 5.4.14 Policy SP5 ‘Countryside and Green Belt’ of the ELP states that “*We support the principles of the Green Belt and recognise the intrinsic value of the countryside. Green Belt and Rural Areas Beyond the Green Belt are shown on the Policies Map.* We:

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- a. *Have conducted a comprehensive review of the Green Belt. Land has been removed from the Green Belt to:
    - i. *Enable strategic development at the locations referred to in Policies SP8 and SP3;*
    - ii. *Enable local development around a number of the District's towns and villages; and*
    - iii. *Define boundaries for villages referred to in Policy SP2 which fall within the Green Belt but were previously 'washed over' by this designation;**
  - b. *Have provided new Green Belt to cover, in general terms, the area bounded by the Metropolitan Green Belt to the east, the Luton Green Belt to the west and the A505 Offley bypass to the north;*
  - c. *Will only permit development proposals in the Green Belt where they would not result in inappropriate development or where very special circumstances have been demonstrated; and*
  - d. *Will operate a general policy of restraint in Rural Areas beyond the Green Belt through the application of our detailed policies."*

*Adopted and Emerging Local Plan Policy on Rural Areas beyond the Green Belt*

- 5.4.15 Whilst not explicitly Green Belt policy, the adopted (and emerging) local plan designation for Rural Areas outside of the Green Belt is considered relevant to this application when considering the need for the development and potential alternatives to the application Site within North Hertfordshire.
- 5.4.16 Policy 6 'Rural Areas beyond the Green Belt' of the adopted local plan states that: "*In Rural Areas beyond the Green Belt, the Council will maintain the existing countryside and villages, and their character. Except in Selected Villages (Policy 7), a development proposal will normally be allowed only if:*
- i. *it is strictly necessary for the needs of agriculture, forestry or any proven need for local community services, provided that:
    - a. *the need cannot practicably be met within a town, excluded village or selected village, and*
    - b. *the proposal positively improves the rural environment; or**
  - ii. *it would meet an identified rural housing need, in compliance with Policy 29; or*
  - iii. *it is a single dwelling on a small plot located within the built core of the settlement which will not result in outward expansion of the settlement or have*

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*any other adverse impact on the local environment or other policy aims within the Rural Areas; or*

iv. *it involves a change to the rural economy in terms of Policy 24 or Policy 25'*

5.4.17 Policy CGB1: 'Rural Areas beyond the Green Belt' of the emerging local plan states that *"In the Rural Areas beyond the Green Belt, as shown on the Policies Map, planning permission will be granted provided that the development:*

- a. is infilling development which does not extend within the built core of a Category B village;*
- b. meets a proven local need for community facilities, and services or rural affordable housing in an appropriate location;*
- c. is strictly necessary for the needs of agriculture or forestry;*
- d. relates to an existing rural building;*
- e. is a modest proposal for rural economic development or diversification; or*
- f. would provide land or facilities for outdoor sport, outdoor recreation and cemeteries that respect the generally open nature of the rural area."*

5.4.18 In support of emerging Policy CGB1, paragraph 4.59 of the emerging local plan states that *"In terms of intrinsic character and beauty, this area [Rural Areas beyond the Green Belt] contains some of the highest quality countryside in the District. However, the settlements are generally more dispersed meaning a Green Belt designation cannot be justified. This sparser pattern of development additionally means that, outside of the defined settlements, many Sites are not well located in relation to key services. On these grounds it remains appropriate to have a policy of restraint. Our detailed policies set out the approach that will apply in this area."*

#### ***Harm to the Purposes of the Green Belt***

5.4.19 North Hertfordshire District Council undertook a Green Belt Review in 2016 as part of the evidence base for their ELP.

5.4.20 The Green Belt Review identified strategic parcels of land within the Green Belt, and then assessed each parcel of land for the contribution they make to each of the five purposes of Green Belt set out in Paragraph 138 of the NPPF. The assessment criteria used were as follows:

**Table 5.3: Green Belt Assessment Criteria**

<b>Green Belt Purpose</b>	<b>Criteria used in Assessment</b>
To check the unrestricted sprawl of large built-up areas	What role does the land play in preventing the spread of development outwards from larger settlements?
To prevent neighbouring towns merging into one another	What role does the land play in maintaining the separation of towns?
To assist in safeguarding the countryside from encroachment	Are there already urbanising influences? Does a strong boundary exist to contain development?
To preserve the setting and special character of historic towns	Is there a link with or views to the historic parts? What relationship or connection does the land have with the character of the town?
To assist in urban regeneration by encouraging the recycling of derelict and other urban land	Re-use of previously developed land is achieved consistently through the application of Green Belt policy. Therefore no assessment is made against this criterion.

- 5.4.21 As shown on Figure 5.1, the Site lies across the boundary of two strategic parcels; the part of the Site south of Graveley Lane is within Parcel 10 Little Wymondley, the part of the Site north of Graveley Lane is within Parcel 14 Willian.
- 5.4.22 Parcel 10 Little Wymondley is noted as making a significant contribution to Green Belt purposes, helping to prevent sprawl and the merger of towns, with it having a close relationship with the north-west edge of Stevenage and the southern edge of Hitchin.
- 5.4.23 Parcel 14 Willian is also noted as making a significant contribution to Green Belt purposes, helping to prevent sprawl and encroachment, and maintaining the separation and setting of towns. It is described as playing an important role as a key green wedge between Hitchin and Letchworth and in the setting to them.
- 5.4.24 The following table is an extract from the Green Belt Review:

**Table 5.2: Extract taken from Table 2.2 of Green Belt Review**

<b>Parcel</b>	<b>Check unrestricted sprawl of large built-up areas</b>	<b>Prevent merging of neighbouring towns</b>	<b>Safeguard countryside from encroachment</b>	<b>Preserve setting and special character of historic towns</b>
10 Little Wymondley	Plays a significant part in the prevention of sprawl from Hitchin to the north west.	Plays a significant part in the preventing Hitchin and Stevenage merging.	This parcel is more urbanised than the neighbouring countryside due to the amount of transport routes, small settlements and urban fringe land use.	Has some contribution to the setting of Hitchin. However no direct visual link with the historic core.
14 Willian	Creates a strong green wedge between Hitchin and Letchworth as well as strengthening the role of the adjoining Green Belt around Stevenage preventing sprawl.	Plays a significant role in preventing the merger of Hitchin and Letchworth.	Although some urbanising influences, there are strong urban boundaries to Hitchin and Letchworth.	Important in the setting of Hitchin due to strong visual relationship with the historic core of the town.

5.4.25 The Green Belt Review then provides a more detailed context by defining ‘sub-parcels’ across the area, which are assessed in the same way as the strategic parcels above.

5.4.26 As shown on Figure 5.1, the Site lies across the boundary of two sub-parcels; the part of the Site south of Graveley Lane is within sub-parcel 10c, the part of the Site north of Graveley Lane is within sub-parcel 14f.

5.4.27 Sub-parcel 10c is noted as making a significant contribution to Green Belt purposes as it forms part of the setting to Little Wymondley village and includes part of Great Wymondley, whilst forming a critical part of the gap between Stevenage, Hitchin and Letchworth.

5.4.28 Sub-parcel 14f is also noted as making a significant contribution to the Green Belt as a rolling arable landscape with large fields, it forms part of the context for Willian village and includes part of Great Wymondley, with the A1(M) forming a strong eastern boundary.

5.4.29 The following table is an extract from the Green Belt Review:

**Table 5.3: Extract taken from Table 3.1 of Green Belt Review**

<b>Parcel</b>	<b>Check unrestricted sprawl of large built-up areas</b>	<b>Prevent merging of neighbouring towns</b>	<b>Safeguard countryside from encroachment</b>	<b>Preserve setting and special character of historic towns</b>
10c	Plays important role in preventing expansion of Stevenage northwards into gap between Hitchin, Letchworth and Stevenage.	Plays a critical role in preventing Hitchin and Stevenage merging.	Protects countryside in gap between Hitchin and Stevenage.	No relationship with historic towns.
14f	Prevents southwards expansion of Letchworth into gap between Stevenage, Letchworth and Hitchin.	Plays critical role in separating Letchworth and Stevenage.	Protects countryside in the gap between Hitchin, Letchworth and Stevenage.	Part of the southern context of Letchworth'

5.4.30 As part of the plan-making process, the Green Belt Review then goes on to assess potential development Sites within the Green Belt for the contribution they make to Green Belt purposes.

5.4.31 For the purpose of this policy appraisal, the Proposed Development has been assessed for its potential harm to green belt purposes considering the same criteria used for the assessment of development Sites within the Green Belt Review. This assessment is set out in Table 5.4 below:

**Table 5.4: Assessment of the Site in relation to the purposes of Green Belt**

<b>Green Belt Purpose</b>	<b>Assessment</b>
<p><b>Check unrestricted sprawl of large built-up areas</b></p>	<p><b><i>What role does the land play in preventing the spread of development outwards from larger settlements?</i></b></p> <p>The Site does not directly adjoin the boundary of a large built-up area.</p> <p>The closest large built-up areas are the towns of:</p> <ul style="list-style-type: none"> <li>• Hitchin – approx. 1.4km to the west;</li> <li>• Stevenage – approx. 0.75km to the south; and</li> <li>• Letchworth – approx. 1.5km to the north.</li> </ul> <p>The closest villages to the Site are:</p> <ul style="list-style-type: none"> <li>• Great Wymondley – approx. 0.15km to the west;</li> <li>• Little Wymondley – approx. 0.5km to the south-west;</li> <li>• Graveley – approx. 0.12km to the east.</li> </ul> <p>The ZTV submitted with the LVIA (LVIA Figure 3) demonstrates the very limited visual connectivity between the Proposed Development and the above towns and villages because of the influence of landform and vegetation. This is supported by the findings of the LVIA.</p> <p>Development of the Site would not result in the extension of a large built-up area or village, and therefore given the distance and limited intervisibility from surrounding towns and villages, it would not result in unrestricted sprawl.</p> <p>It is therefore considered that whilst the Proposed Development would result in harm to this purpose of the Green Belt, this would be <b>limited harm</b> given the limited intervisibility and distance from the main urban areas.</p>
<p><b>Prevent merging of neighbouring towns</b></p>	<p><b><i>What role does the land play in maintaining the separation of towns?</i></b></p> <p>As set out above, the Site does not directly adjoin the boundary of any built-up area and maintains a physical separation from nearby towns and villages. The Proposed Development would therefore not cause the merging of towns or other settlement.</p> <p>Hitchin to the west has a well-defined eastern boundary formed by the Ippollitts Brook and River Purwell, with Great Wymondley approximately 0.8km east of this boundary.</p>

	<p>Development of the Site would not affect the strong delineation of this brook as a boundary to development in Hitchin, or the gap between Hitchin and Great Wymondley, and therefore would not influence perceived separation.</p> <p>Stevenage to the south has a well-defined western boundary formed by the A1(M), but its northern boundary in the direction of the Site is more fluid because of the extent of existing infrastructure and proximity of the nearby villages of Little Wymondley and Graveley. As such there is no obvious delineated settlement boundary. In this context, the visibility of the Proposed Development is an important contributor in determining whether there would be harm to the perceived separation of nearby settlement. The LVIA demonstrates the Proposed Development would not be visible from Graveley to the east, Stevenage to the south, or Little Wymondley to the south-west. Therefore, development of the Site would not affect the perceived separation between these settlements.</p> <p>Letchworth to the north has a reasonably well-defined southern boundary which incorporates the village of Willian, with the Site approximately 1.5km to the south. Development of the Site would not affect the current delineation of the boundary to Letchworth.</p> <p>Given the physical separation between settlements such that the Proposed Development would not result in coalescence, the limited intervisibility between settlements and the Site, and that the existing perceived gaps between settlements would be maintained, there would be <b>no harm</b> to this purpose of Green Belt designation because of the Proposed Development.</p>
<p><b>Safeguard countryside from encroachment</b></p>	<p><b><i>Are there already urbanising influences? Does a strong boundary exist to contain development?</i></b></p> <p>The Site is in a landscape character area which is characterised to a degree by urbanising influences. The local landscape character assessment notes that the “...area is largely rural but is influenced by the pressures of urban areas and significant infrastructure systems.” Electricity pylons and transport infrastructure are identified as detractors through the area.</p> <p>The local landscape character assessment goes on to identify that the landscape character area is “of low landscape sensitivity as a result of significant urban influence and numerous detractors”.</p> <p>The Site adjoins the A1(M) to its east and is therefore in a part of the landscape character area representative of the above characteristics, i.e. it is not pristine countryside, and is degraded by urbanising influences.</p> <p>The Proposed Development conserves the existing landscape fabric by avoiding the removal of vegetation or the substantial alteration to any landform. In addition, the</p>



	<p>Proposed Development includes proposed woodland belts and hedgerows to integrate the solar farm by providing a robust landscape framework. This mitigation planting would restore and improve the existing landscape fabric which is in a declining condition.</p> <p>The Proposed Development is of a low height and would sit within this landscape framework such that once the proposed mitigation planting is established the solar farm would be predominantly screened from views. In this context, the Proposed Development would not be intrusive, and an appreciation of the landscape as countryside in terms of its fabric of vegetation, landform and field pattern would still be possible.</p> <p>Compared to other forms of development such as residential or employment uses, the Proposed Development is less intrusive on the countryside as:</p> <ul style="list-style-type: none"> <li>• Solar farms are a 'static' land use in that once constructed there is limited or no regular activity across the Site, as opposed to residential / employment uses where a high degree of activity could be expected because of an increased population;</li> <li>• Solar farms are of a low height, such that they are not as widely visible as typical residential or employment land uses, and therefore less visually intrusive;</li> <li>• Solar farms cause a negligible change in traffic along the local road network, as opposed to residential / employment uses where an increase in traffic along local roads through the Green Belt can be expected;</li> <li>• Solar farms can continue to be managed as agricultural land through the grazing of livestock, as opposed to residential / employment uses which sterilise agricultural land; and</li> <li>• Solar farms do not result in a substantial change in land (field) pattern or require substantial Site clearance or topsoil stripping, such that they can be considered temporary in nature as once decommissioned the land can be easily returned to its former use without significant demolition or remediation.</li> </ul> <p>Considering the above, it is therefore considered that whilst the Proposed Development would result in harm to this purpose of the Green Belt simply because of development of a greenfield Site, this would be <b>limited harm</b>.</p>
<p><b>Preserve setting and special character of historic towns</b></p>	<p><b><i>Is there a link with or views to the historic parts? What relationship or connection does the land have with the character of the town?</i></b></p> <p>The Site is not within or directly adjacent to a conservation area or a historic town.</p> <p>The nearest conservation areas to the Site are Wymondley, approximately 0.15km to the west; and Graveley,</p>

	<p>approximately 0.2km to the east.</p> <p>The HIA submitted with this planning application reports that for Wymondley Conservation Area, the Proposed Development would not feature in any of the key views identified by the Conservation Area Character Statement, and that as a result it would cause less than substantial harm to its setting.</p> <p>From Graveley Conservation Area there would be no intervisibility with the Proposed Development, and the existing separation to the Site delineated by the A1(M) would be maintained.</p> <p>Given the physical separation between the Proposed Development and historic towns / local conservation areas, and the very limited intervisibility between the Proposed Development and these areas, there would be <b>no harm</b> to this purpose of Green Belt designation because of the Proposed Development.</p>
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5.4.32 To conclude, the Site lies within strategic parcels 10 and 14, and sub-parcels 10c and 14f of the Green Belt, which have been identified and assessed as making a significant contribution to the purposes of Green Belt designation. A more focused assessment of the Site, which occupies a much smaller area than the strategic parcels and sub-parcels, has found that there would be no harm to the following purposes of the Green Belt because of the Proposed Development:

- to prevent neighbouring towns merging into one another;
- to preserve the setting and special character of historic towns.

5.4.33 There would be a limited harm to the purpose of checking the unrestricted sprawl of large built-up areas because of the change in land use and introduction of the Proposed Development within the Green Belt. This harm would be limited given the Proposed Development would be of limited intervisibility with the surrounding landscape.

5.4.34 There would also be a limited harm to the purpose of assisting in safeguarding the countryside from encroachment simply because of the introduction of the Proposed Development on a greenfield Site. This harm would be limited as the Proposed Development as an appreciation of the landscape as countryside in terms of its fabric of vegetation, landform and field pattern would still be possible.

5.4.35 The limited harm to these two purposes of Green Belt designation is considered not to result in overall harm to the integrity and function of the Green Belt.

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### ***Harm to the Permanence and Openness of the Green Belt***

5.4.36 With reference to the NPPF, the essential characteristics of Green Belt are their permanence and their openness. The potential harm resulting from the Proposed Development to both the permanence and openness of the Green Belt are discussed below.

#### *Permanence*

5.4.37 The Proposed Development has an operational life of up to 40 years, at the end of which it would be decommissioned, and the land could be easily returned to its former use without any significant demolition or land remediation. At the end of its operational life the land would therefore have the characteristics of greenfield land, and as such the Proposed Development cannot be considered permanent in a Green Belt context.

5.4.38 North Hertfordshire District Council agree with this position in their EIA Screening Opinion, stating that that “It is noted that although 40 years is a substantial period of time, it is temporary, and the land will revert back to agricultural use when the period ends.”

5.4.39 Unlike other potential forms of development, including other forms of renewable energy such as anaerobic digestion facilities, biomass facilities, or energy-from-waste facilities; solar farms are a temporary (long-term) use of land that can be easily and quickly decommissioned with minimal impact.

5.4.40 It is therefore concluded that the Proposed Development would cause **no harm** to the permanence of the Green Belt.

#### *Openness*

5.4.41 In determining what factors can be considered when assessing the impact of a proposal on the openness of the Green Belt, planning practice guidance published by the Government states that this “*requires a judgment based on the circumstances of the case. By way of example, the courts have identified a number of matters which may need to be taken into account in making this assessment. These include, but are not limited to:*

- *openness is capable of having both spatial and visual aspects – in other words, the visual impact of the proposal may be relevant, as could its volume;*

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- *the duration of the development, and its remediability – taking into account any provisions to return land to its original state or to an equivalent (or improved) state of openness; and*
  - *the degree of activity likely to be generated, such as traffic generation.”*

5.4.42 The second bullet point on the duration of the development is addressed above in relation to its permanence and remediability. This sub-section therefore considers any harm to the openness of the Green Belt from impacts relating to the first and third bullet points under the headings: spatial and visual aspects; and the degree of activity likely to be generated.

### **Spatial and visual aspects**

5.4.43 Although the NPPF refers to the ‘openness’ of the Green Belt, it does not provide a specific definition. As a result, there have been several court decisions on the proper interpretation of the Green Belt provisions within the NPPF, including in respect of openness. One of the main topics has been the correlation between the concepts of ‘openness’ and ‘visual impact’. More recent judgements have determined that there are two distinct concepts to the assessment of a development’s impact upon the openness of the Green Belt. They comprise:

- Impact on ‘actual’ openness – the concept that openness relates to the absence of buildings and any ‘inappropriate’ built development in the Green Belt would therefore impact upon openness; and
- Impact on ‘perceived’ openness – would the presence of the development alter the overall perception of openness within the Green Belt.

5.4.44 Considering the above, the following paragraphs consider the matter in the context of both points.

#### **Impact on ‘Actual’ Openness**

5.4.45 On the basis that the concept of openness relates to the absence of buildings and that any ‘inappropriate’ built development in the Green Belt would, therefore, impact upon openness; it is the case that the Proposed Development would result in an incremental impact upon the openness of the Green Belt.

5.4.46 This impact is moderated by the fact the Proposed Development has a very low physical footprint in relation to the extent of the Site (c.3% of the Site), and the layout and distribution of built form across the Site. This means that despite the

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introduction of solar panels across much of the Site which would result in a volumetric increase in development, the Site can continue as agricultural through the productive grazing of livestock.

5.4.47 Through the design evolution process the Applicant has sought to ensure that one of the key design principles has been to minimise spatial impact. This has been achieved through reducing and containing the built extent of the Proposed Development to the absolute minimum that is required to operate the scheme, noting the need to retain and provide an offset from existing landscape features, and provide an offset to the National Grid gas pipe across the Site. In addition, the solar panels and associated infrastructure are all low-lying and would therefore not introduce large, bulky and overtly obtrusive built form into the Green Belt. These measures and the inherent nature of the development would ensure that the impact upon the ‘actual’ openness of the Green Belt is kept to an absolute minimum without compromising the overall purpose of the Proposed Development to generate renewable energy.

#### Impact on ‘Perceived’ Openness

5.4.48 An important factor in respect of the impact upon the perception of openness in the Green Belt is the wider landscape and visual setting and how the perception of openness within that setting would change following the introduction of a development.

5.4.49 The ZTV submitted with the LVIA (Figure 3 of the LVIA) demonstrates that the existing topography and pattern of vegetation limit the overall potential visibility of the Proposed Development to highly localised areas around the Site. In addition, the ZTV shows (and is supported by the findings of the LVIA) that the Proposed Development would not be visible from within the closest settlements of Great Wymondley, Little Wymondley, and Graveley; and in addition would not be visible from the large-up built-up areas of Hitchin, Letchworth and Stevenage.

5.4.50 As set out in the LVIA:

- In the short-term, the Proposed Development would have an impact on the perceived openness of views at intermittent locations around the Site boundary through the introduction of solar panels and associated infrastructure into the foreground of views.

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- In the medium- and long-term, the Proposed Development would be predominantly screened from these views once the proposed mitigation planting has established, albeit the proposed mitigation planting would still partially reduce the perceived openness through the curtailment of views;
  - From the wider landscape beyond the Site boundary, the low height of the Proposed Development and the distant nature of views are such that whilst the Proposed Development may be visible from intermittent locations, it would form a small proportion of the overall view and would be seen in the context of existing development or settlement in the view, such that the perceived openness of views would be unchanged; and
  - The landscape and visual effects are easily reversible either during or at the end of the 40-year operational period, such that once decommissioned the Site's existing characteristics could be restored.

#### **Degree of activity likely to be generated**

- 5.4.51 As set out earlier, solar farms are a 'static' land use in that once constructed there is limited or no regular activity across the Site as they do not require a permanent on-Site workforce when operational.
- 5.4.52 The Transport Statement also confirms that once operational, the change in traffic along the local road network would be 'de minimis'.

#### *Conclusion*

- 5.4.53 To summarise, in relation to the bullet points set out at paragraph 5.4.41:
- There would be a **limited harm** to the spatial and visual aspects of the Green Belt resulting from a slight reduction in actual and perceived openness;
  - There would be **no harm** to the openness of the Green Belt resulting from a permanent change in land use; and
  - There would be **no harm** to the openness of the Green Belt resulting from an increase in the degree of activity generated within the Green Belt.

#### **Very Special Circumstances**

- 5.4.54 Paragraph 147 of the NPPF states "*Inappropriate development is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances.*" Solar farms are not identified under paragraphs 149 and 150 as being 'not inappropriate' development. Indeed, paragraph 151 of the NPPF states

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that “*When located in the Green Belt, elements of many renewable energy projects will comprise inappropriate development. In such cases developers will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources.*” [emphasis added]

5.4.55 This section sets out in detail under the following headings, factors which are considered to contribute to the ‘Very Special Circumstances’ of the scheme:

- Urgent Local Need;
- Need for a Green Belt Location; and
- Wider Environmental Benefits

*Urgent Local Need*

5.4.56 The Proposed Development would supply up to 49.995 MWe of clean renewable energy to the National Grid during peak operation.

5.4.57 The urgent national need for the Proposed Development is set out unequivocally in Section 4 of this Planning, Design and Access Statement.

5.4.58 Locally, North Hertfordshire District Council declared a Climate Emergency on 21st May 2019<sup>19</sup>, and followed this up with the publication of a Climate Change Strategy 2021-2026. As part of the Climate Change Strategy, the Council set the ambitious objective of achieving net zero across the District by 2040. As the Council sets out, this commitment goes beyond Government targets, where net zero is targeted nationally by 2050.

5.4.59 Government data for electricity use within North Hertfordshire shows that in 2019 (latest available data) the District used a total of 506 GWh of electricity, based on sales of electricity made to domestic and non-domestic customers<sup>20</sup>.

5.4.60 The Government has also collated data on renewable electricity generation by local authority area in the UK<sup>21</sup>. This demonstrates that in the same year (2019), North Hertfordshire generated only 52.6 GWh of electricity from renewable sources, or

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<sup>19</sup> <https://www.north-herts.gov.uk/home/council-data-and-performance/policies/climate-change>

<sup>20</sup> <https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics>

<sup>21</sup> <https://www.gov.uk/government/statistics/regional-renewable-statistics>

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approximately 10.4% of its total electricity need. This was generated from the following sources:

- Solar photovoltaics: 30.2 GWh or 57.4%
- Anaerobic digestion: 14.8 GWh or 28.1%
- Landfill gas: 7.6 GWh or 14.5%

5.4.61 Considering the above data, North Hertfordshire's deficit in renewable electricity generation as of 2019 was 453.4 GWh. This is a significant deficit to make up to achieve the Council's ambitious objective of achieving net zero across the District by 2040.

5.4.62 It is reasonable to assume that over time, the 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 Council's recent position, the actual demand for electricity is likely to significantly increase by 2040, and this electricity will need to come from renewable sources. At the same time, North Hertfordshire District has not given planning consent to any new commercial renewable energy generation schemes since 2015<sup>22</sup>. On this basis, the renewable energy deficit in the District will have grown since 2019 and is likely to grow significantly in the period through to 2040 if schemes such as the Proposed Development are not consented as a matter of urgency.

5.4.63 Based on the above data that shows approximately 57.4% of the District's renewable electricity currently comes from solar, if this were to be scaled up proportionately then an additional 260.3 MWh of renewable energy from solar photovoltaics would be required to meet the deficit of 453.4 GWh. This discounts the fact that anaerobic digestion and landfill gas could not easily be scaled up to meet the other 42.6% which would be required.

5.4.64 According to Government data<sup>21</sup>, North Hertfordshire District currently generates no energy from the following other potential sources of renewable energy<sup>23</sup>:

- Onshore wind
- Hydro
- Sewage gas

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<sup>22</sup> *Renewable energy planning database June 2021 update*

<sup>23</sup> *Note that offshore wind and wave/tidal are not listed here as North Hertfordshire is landlocked*



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- Municipal solid waste
  - Animal biomass
  - Plant biomass
  - Cofiring

5.4.65 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 wind. This would not be without its own landscape and visual impacts, as onshore wind facilities 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. It is therefore likely that for North Hertfordshire to meet its needs for renewable energy, it will need to focus heavily on solar generation.

5.4.66 In its first year, the Proposed Development would contribute approximately 51.5 GWh<sup>24</sup> of clean renewable solar energy, almost doubling the existing renewable electricity generation capacity in North Hertfordshire and making a significant contribution to North Hertfordshire's objective to be net zero within the District by 2040.

5.4.67 With reference to the overwhelming national need for renewable energy, this should be given substantial weight in the planning balance.

*Need for a Green Belt Location*

5.4.68 It is an essential requirement for solar schemes to be proximate to an existing substation which has the available capacity to import the required amount of power into the National Grid. In addition, schemes must be located close to the identified substation to remain viable both in terms of cable deployment for the grid connection, and to ensure that minimum transmission losses occur. The Applicant has determined that for a typical Site, the maximum grid connection length before a scheme is no longer viable is approximately 4km from a substation, with costs increasing as distance from the substation increases within this 4km.

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<sup>24</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).

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- 5.4.69 The grid connection route for the Proposed Development follows the local road network and is approximately 4km in length. The Site is therefore towards the upper limit in terms of maximum distance away from the substation.
- 5.4.70 Figure 5.2 presents data sourced from UK Power Networks (the DNO) on solar curtailment within North Hertfordshire District. Solar curtailment is where National Grid deliberately reduce the output of solar renewable energy generation below what could have been produced to balance the energy supply across the Grid. With solar energy, this typically occurs around the middle part of the day when the sun is brightest. Areas with low solar curtailment have capacity to accommodate additional solar renewable energy generation, and areas with high solar curtailment have limited or no capacity; these areas are associated with specific Extra High Voltage (EHV) Substations (>22kV).
- 5.4.71 On Figure 5.2, the extent of solar curtailment in different areas of the District is represented by four bands, ranging from green (low curtailment) to red (high curtailment). Generally, areas with curtailment greater than 10% are not viable for solar development without subsidies; and these areas are also the least likely to have available grid capacity. Therefore, areas on Figure 5.2 shown in red are considered to not presently be viable for solar farms.
- 5.4.72 Areas shown in yellow on Figure 5.2 have potential for solar renewable generation due to their moderate to low curtailment. The EHV Substations (>22kV) which are associated with the areas shown yellow (and therefore have grid capacity for solar farms) are identified on the Figure. Note that several of these substations supply North Hertfordshire but are located outside of the District. The following EHV Substations (>22kV) are identified as having capacity:
- East Harpenden Primary;
  - North Hitchin Primary;
  - North Stevenage Primary;
  - Reed Primary;
  - Stevenage Primary; and
  - South Hitchin Primary.
- 5.4.73 In addition, it is possible to connect directly with National Grid 132kV substations, although there is not publicly available mapping illustrating comparative levels of solar curtailment when connecting directly into the transmission network. There are

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two 132kV substations within North Hertfordshire, and four within 4km of the District, as shown on Figure X:

- Letchworth Grid;
- Luton Grid North;
- Luton Grid South;
- Melbourn Grid;
- Stevenage Grid; and
- Wymondley Grid.

5.4.74 Figure 5.2 demonstrates that within North Hertfordshire there are two geographic areas where there is capacity within the grid to accommodate a solar farm without significant solar curtailment. Broadly, these geographic areas are the west of the District and the east of the District, with the central part of the District unsuitable.

5.4.75 In the west of the District, almost all the landscape is covered either by Green Belt, an emerging proposed Green Belt extension, or the Chilterns AONB. Therefore, whilst there is significant opportunity for solar farm grid connections, almost all the available land within 4km of a substation is (or will be) constrained by either Green Belt or AONB.

5.4.76 There is an area of land north-west of Hitchin that falls within 4km of North Hitchin Primary and South Hitchin Primary substations and is outside of Green Belt and AONB designation which would potentially be suitable for solar renewable energy generation, however this area of land is not without constraint, namely:

- North Hitchin Primary and South Hitchin Primary Substations are each within Hitchin. Substations within urban areas tend to be physically constrained by the land around them, such that there is little room for expansion once their capacity is reached;
- Providing a grid connection through the road network within a town (such as Hitchin) to a substation is more technically challenging, expensive, and disruptive than using the rural local road network; and
- The land north-west of Hitchin is within the close setting to the Chilterns AONB to its south-west, such that development in this area is more likely to result in a significant effect on the AONB than other areas of the district.

5.4.77 In the context of the above, the point at which the benefit of a scheme north-west of Hitchin offsets the grid connection cost is unlikely to extend as far as 4km from the

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substations without developing a substantially larger solar farm (than the Proposed Development) to increase the cost / benefit ratio. This in turn is less likely to be acceptable in the setting of the AONB. Therefore, whilst the land north-west of Hitchin outside of Green Belt cannot be ruled out, it would potentially not be economically viable to develop without undue harm to the AONB.

- 5.4.78 In the east of the District, there are no Green Belt or AONB designations, but the landscape is designated under NHDC Policy 6 'Rural Areas beyond the Green Belt' (Policy CGB1 of the ELP), which as previously stated the ELP notes at paragraph 4.59 that "*In terms of intrinsic character and beauty, this area [Rural Areas beyond the Green Belt] contains some of the highest quality countryside in the District.*"
- 5.4.79 At present, the existing infrastructure in the east of the District is unlikely to be able to meet North Hertfordshire's renewable energy needs in isolation; and at the same time an overconcentration of solar (and/or wind) generation in the east of the District would inevitably result in cumulative landscape and visual effects on an area recognised for its high landscape quality.
- 5.4.80 According to [biofuelwatch.org.uk](https://www.biofuelwatch.org.uk)<sup>25</sup>, each hectare of land in the UK that is used for solar photovoltaic renewable energy generation typically produces 481.8 MWh of electricity per annum. Therefore, as an example, if the total renewable energy deficit in North Hertfordshire of 453.4 GWh per annum was to be met purely by solar, a total of approximately 941 ha of land would need to be converted to solar uses. To illustrate this, 941ha is shown to scale by the cyan box in the east of the District on Figure 5.2. Clearly, this quantum of solar energy concentrated in one area in the east of the North Hertfordshire would not be sustainable and would result in significant landscape and visual effect. In addition, the Reed Primary would not be able to accommodate this level of generation.
- 5.4.81 In the context of the significant local need if North Hertfordshire is to reach net zero, it is considered that both the west and east of the District will need to contribute towards providing clean renewable energy to the Grid, and that small- to mid-scale Sites distributed across North Hertfordshire will need to come forward to deliver this, including several Green Belt locations.

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<sup>25</sup> <https://www.biofuelwatch.org.uk/2018/biomass-and-land-use/>

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5.4.82 The Applicant has secured a grid connection offer from National Grid for a 49.995MW solar farm to the Wymondley Grid. The availability of this grid connection at Wymondley, and the immediate deliverability of the Proposed Development in the context that North Hertfordshire has not consented a commercial renewable energy generation scheme since 2015, should be given substantial weight in the planning balance.

*Wider Environmental Benefits*

5.4.83 As identified in the policy context above, paragraph 145 of the NPPF is clear that local planning authorities should plan positively and for enhancing the: “beneficial use of the Green Belt.” This includes: “*looking for opportunities to provide access; to provide opportunities for outdoor sport and recreation; to retain and enhance landscapes, visual amenity and biodiversity; or to improve damaged or derelict land.*”

5.4.84 The Applicant has sought to positively enhance the Green Belt through the proposed on-Site landscaping which would accord with landscape character guidelines at a local level to conserve and restore the landscape fabric. This includes the following environmental enhancements which are embedded with the design:

- Grassland within the perimeter/stock fencing suitable for sheep grazing, with a sward comprising a broad selection of grasses, herbs and clover that are productive for livestock, and which provide pollen and nectar for biodiversity benefit;
- Species-rich grassland between field boundaries and perimeter/stock fencing to contribute to enhancing hedgerow buffer zones for improved ecological connectivity;
- Native-species woodland planting approximately 10m wide along the western and northern boundaries of the northern part of the Site, to provide visual screening, landscape integration, and improved ecological connectivity;
- New native-species hedgerows alongside Graveley Lane and the A1(M) for visual screening and ecological connectivity, and for the purpose of landscape integration by restoring boundaries that have likely been lost through historic widening; and

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- Gapping up of existing hedgerows around and within the Site which are generally in a poor and declining condition, with fragmentation reducing their function as ecological corridors and potential for visual screening.
- 5.4.85 This would not only provide a significant biodiversity net gain well above the emerging national target of 10%, but would also crucially take the land out of intensive arable agricultural use.
- 5.4.86 North Herts Climate Change Strategy states that: “*Trees are probably those most often noted for their carbon sequestration abilities, but hedgerows, grasslands, and wildflower areas also have the capacity to absorb significant amounts of carbon, storing it in woody growth, in leaves, in roots and in the soil.*”
- 5.4.87 The Proposed Development would therefore not only provide a net carbon benefit within North Hertfordshire through an increase in renewable energy, but also through reducing carbon released in the farming process through, e.g. disturbance of soils and use of fertilisers; and increase the carbon sequestration across a substantial area of land that is proximate to a major road.
- 5.4.88 These matters represent a material beneficial impact upon the Green Belt that should weigh in favour of the Proposed Development.

*Summary of Very Special Circumstances*

- 5.4.89 To summarise the above, the following factors are considered to represent ‘Very Special Circumstances’, which when considered cumulatively, are judged to clearly outweigh any harm to the Green Belt. It is incorrect to suggest that every circumstance must be ‘*very special*’. Some factors which are quite ordinary in themselves can, cumulatively, become very special circumstances<sup>26</sup>:
- The significant national need to reduce carbon emissions and address the global challenge of climate change, set out in Section 4 of this PDAS;
  - The significant local need to deliver on North Hertfordshire’s declaration of a Climate Emergency and commitment to achieve a net zero District by 2040;
  - The significant constraint posed by the extent of the existing (and emerging) Green Belt and AONB within North Hertfordshire, which limits the availability,

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<sup>26</sup> R. (on the application of Basildon DC) v First Secretary of State [2004] EWHC 2759

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and viability, of delivering renewable energy schemes that meet North Hertfordshire's needs outside of the Green Belt;

- The wider environmental benefits associated with the landscape proposals which will deliver a significant biodiversity net gain well above the emerging national target of 10%; would reduce carbon emissions by taking the land out of intensive arable agricultural use; and will increase carbon sequestration across a substantial area of land that is proximate to a major road;
- The limited landscape and visual impact of the Proposed Development away from the Site, with the proposed mitigation included with the Proposed Development integrating it with its landscape context, such that in the medium- and long-term there would be no significant (in EIA terms) landscape or visual impacts;
- The limited wider environmental impacts of the Proposed Development, in that (in EIA terms) there are no permanent significant adverse effects predicted across any of the technical reports submitted pursuant to this planning application;
- The reversibility of the Proposed Development, such that at the end of its operational phase when it is decommissioned, the land could be easily returned to its current use without any significant demolition or land remediation; and
- The availability of the grid connection at Wymondley, and the immediate deliverability of the Proposed Development in the context that North Hertfordshire has not consented a commercial renewable energy generation scheme since 2015.

5.4.90 There are a numerous examples of where 'very special circumstances' have been shown to exist and planning permission has been granted for renewable and associated development in the green belt. Recently, in January 2021 planning permission was granted by South Gloucestershire Council for a solar farm and battery storage with ancillary equipment (ref: P20/13909/F) within the Green Belt<sup>27</sup>. This will generate 49.9MW of renewable energy and operate for 35 years.

5.4.91 The declaration by South Gloucestershire Council of a climate emergency was a material consideration which formed part of the 'very special circumstances' used to justify the approval. Negotiations at the recent COP26 conference in Glasgow

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<sup>27</sup> [https://developments.southglos.gov.uk/online-applications/files/2FFCD2599CF3A0CE97BE293FCCC46046/pdf/P20\\_13909\\_F-CIRCULATED\\_REPORT-6834315.pdf](https://developments.southglos.gov.uk/online-applications/files/2FFCD2599CF3A0CE97BE293FCCC46046/pdf/P20_13909_F-CIRCULATED_REPORT-6834315.pdf)

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have further highlighted the climate change emergency and the urgent need for actions, rather than words. As such the wider environmental benefits associated with the delivery of renewable energy developments should be given significant weight when considering very special circumstances in the green belt.

### **Conclusion**

5.4.92 Considering the above, it is concluded that in this instance, very special circumstances exist that clearly outweigh the limited harm to the Green Belt, and any other harm caused by the Proposed Development.

5.4.93 It is therefore concluded that the Proposed Development would meet the requirements of Policy 2 of the Adopted Local Plan, Policy SP5 of the Emerging Local Plan, and Section 13 of the NPPF, and the grant of permission can be justified.

## **5.5 Theme 3: Nature Conservation and Biodiversity**

5.5.1 NPPF Paragraph 174 advises that planning policies and decisions should seek to minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures. This is echoed in the NPPG and is enshrined in the Environment Act 2021 which requires the planning system to deliver biodiversity net gain.

5.5.2 NPPF Paragraph 180 sets out that:

*'a) If significant harm to biodiversity resulting from a development cannot be avoided, (through locating on an alternative Site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*

*b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the Site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*



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*c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*

*d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.'*

- 5.5.3 The adopted and emerging development plan contains numerous policies that seek to secure biodiversity gains and protection through the use of surveys, assessment and appropriate mitigation / design. These are set out in Appendix J and are referenced in the assessment below.

#### *Assessment*

- 5.5.4 The Ecological Assessment provided at Appendix E provides the information necessary to determine the planning application in the context of the relevant policies and legislation. The assessment is summarised below.
- 5.5.5 The Site does not form part of any statutory designated Site for nature conservation. There are seven statutory designated Sites of national importance located within 5km of the Site. The closest is Purwell Meadows Local Nature Reserve located 1.4km north of the Site. No internationally designated Sites are located within 10km of the Site. There are Nineteen non-statutory designated Sites present within approximately 2km of the Site, the closest Graveley Hall Farm Local Wildlife Site is 350m east from the Site. Whilst the Site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ); solar schemes are not listed on the qualifying criteria whereby the LPA would be required to consult Natural England.
- 5.5.6 There will be no direct effect on habitats within any statutory or non-statutory designated Sites due to the distances involved, the nature of the proposed development and absence of impact pathways. Indirect effects will be avoided through the implementation of standard good practice in respect of drainage and pollution prevention and runoff control measures during the construction and operation of the Proposed Development.
- 5.5.7 The main habitat within the development footprint comprises intensively management arable land which is of low ecological value. Field boundary features

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- include woodlands, hedgerows and ditches. These feature potentially support a more diverse range of species and the solar array has been designed to avoid them with a minimum 6m buffer proposed. Direct loss of habitat would be small and would comprise entirely low ecological value arable land, which is widely present in the local landscape.
- 5.5.8 Consideration has been given to the impact of the Proposed Development on those species which have been shown to be present or those with potential to be present. This includes birds, bats, badgers, water voles, otters, amphibians and reptiles, and other species. In each case mitigation measures can be included to ensure that the impact is acceptable.
- 5.5.9 There would be potential temporary displacement of a small number of skylark territories during construction (depending on timing of the works). However, independent studies looking at changes in biodiversity between solar farms and undeveloped Sites have found that overall diversity and abundance of birds is higher in solar farms compared to adjacent 'control' Sites. The studies document that solar farms provide an important resource for declining species, such as skylark, as this species utilises habitats within the solar development footprint. The studies found the difference in skylark numbers within solar farms and control plots was not significant. Studies conducted by the Royal Society for the Protection of Birds (RSPB) further support high bird usage of solar farms by farmland bird species, including ground-nesting species (such as skylark).
- 5.5.10 It has also been noted in the literature that ground-nesting bird species nest between and around rows of solar panels. As such displacement during construction is unlikely to be permanent. The gaps between rows of panels will be c.4m wide, which is the recommended width for skylark plots. In addition, there are other areas within the solar array, such the c. 30m by 850m open corridor along the route of the existing gas main and numerous areas around the perimeter of the Site, where more open habitat is available.
- 5.5.11 The habitat creation and associated biodiversity net gain that will accompany the Proposed Development has been assessed using the Defra Biodiversity Net Gain Calculator Metric (version 3.0). This shows a clear net gain of c.203% in habitat units, plus over 90% gain in hedgerow units.
- 5.5.12 As such, it can be concluded that the Proposed Development would not conflict with the NPPF Section 15, saved Policy 14 of the adopted NHDC Plan, Policies NHE2

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and NHE3 of the WNDP, Policies NE5, NEx (a), NEx (b) and Strategic Objective ENV3 of the Emerging Local Plan. In addition, the Proposed Development would deliver significantly greater net biodiversity gains than required by the Environment Act (2021).

## **5.6 Theme 4: Cultural Heritage and Archaeology**

5.6.1 Section 16, paragraphs 194 to 208 of the NPPF consider cultural heritage and archaeological assets. Paragraph 200 seeks to avoid substantial harm to designated heritage assets and Paragraph 202 suggest that where there is less than substantial harm to designated assets this harm should be weighed against the public benefits of the proposal.

5.6.2 Paragraph 194 indicates that the level of assessment *'should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance*'. (emphasis added)

5.6.3 Paragraph 199 states that:

*'When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance*'. (emphasis added)

5.6.4 Paragraph 200 states that:

*'Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification*'. (emphasis added).

5.6.5 Paragraph 205 states that:

*'Local planning authorities 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, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted. (emphasis added)*

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5.6.6 The adopted and emerging development plan contains numerous policies that seek to conserve and protect heritage assets and their setting, which replicate the main principals set out in the NPPF. These are set out in Appendix J and are referenced in the assessment below.

*Assessment*

5.6.7 Appendix C provides a desk-based Heritage Impact Assessment the findings of which are summarised below.

5.6.8 There is considered to be a High potential for prehistoric remains to be encountered within the Site, given the recorded discovery of prehistoric flints and Iron Age pottery within the Site, together with the frequency of remains of this date recorded within the surrounding area.

5.6.9 The landscape surrounding the Site was extensively settled and farmed by the Roman period. As such, there is considered a High potential for Roman remains to be encountered within the Site. Of particular note is material recovered through fieldwalking adjacent to the eastern Site boundary that may indicate the location of a possible farmstead or other Roman structures within or close to the Site. The proximity of a Roman settlement and cemetery at Great Wymondley discovered in the 1930s also suggests an elevated potential for further associated remains to be present within the Site.

5.6.10 There is also considered a High potential for medieval remains to be encountered within the Site, which is located within the historic landholding of the medieval Wymondley Priory. Given that the Site is located to the east of the precinct of Wymondley Priory, such remains are most likely to relate to the enclosure and cultivation of the Site in the medieval period. However, the discovery of rubbish pits containing stratified 12<sup>th</sup>-13<sup>th</sup> century pottery and medieval building material close to the eastern edge of the Site in 1975 suggests the potential for a previously unrecorded medieval settlement or farmstead remains to survive within the Site.

5.6.11 Areas of Archaeological Significant are identified in the adopted development plan to the east of the northern parcel of land and northeast of the southern parcel of land.

5.6.12 Geophysical surveys are proposed pre-determination to provide additional information in respect of the archaeological potential of the Site and appropriate mitigation strategies. It is anticipated that the findings of these surveys will be

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available in December 2021, subject to suitable weather conditions and the stage of cultivation in the agricultural cycle for the fields.

- 5.6.13 The focus of the NPPF and local plan policies is to avoid direct harm to heritage assets and their setting. It is acknowledged that the Site has a high potential for archaeological remains to be present. However, there are a number of mitigation strategies available that can be used to avoid direct impacts on any currently unknown heritage assets. It should be noted that with solar arrays there is minimal actual ground disturbance, typically less than 3% of the overall Site.
- 5.6.14 Mitigation strategies to avoid impacts currently unknown heritage assets include the omission of areas of solar panels and cabling completely and /or the use of no dig installation techniques to preserve any assets in situ.
- 5.6.15 There has been considerable development in 'no dig' solutions in the construction of solar developments and the objective of in-situ preservation can be achieved through pre-determination non-intrusive investigation, post-determination excavation and the use of no dig mitigation.
- 5.6.16 Planning drawing 3004-01-04 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. Plates 5.1 and 5.2 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.
- 5.6.17 Use of this type of mitigation in combination with geophysical surveys and targeted post determination trenching would ensure compliance with the requirements of the NPPF and local policies to avoid loss and direct harm to potential heritage assets. Post determination evaluation of features identified for protection by avoidance and/ or no dig solutions would advance understanding of any assets as required by paragraph 205 of the NPPF.

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**Plate 5.1: Typical ‘No Dig’ Solar Panel Installation**



**Plate 5.2: Typical ‘No Dig’ Solar Panel and Cabling Installation**



5.6.18 Site visits undertaken for the heritage assessment found that the Site has very limited intervisibility with designated heritage assets within the surrounding 2km Study Area, although the potential impacts of the Proposed Development on the settings of heritage assets are not limited to matters of visibility. Detailed consideration is given to the anticipated impact of the Proposed Development on the wider settings of four groups of heritage assets: the Grade II Listed Graveley Hall Farm and associated structures; the Grade II\* Listed St Mary’s Church at Little Wymondley; the Great Wymondley Conservation Area, including designated heritage assets within it; and the Scheduled Monument of Wymondley Priory, with

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associated structures. This assessment has concluded that the Proposed Development is likely to cause less than substantial harm to the settings of all these assets in terms of the NPPF.

- 5.6.19 It is considered that with pre-construction mitigation and preservation in-situ or by record the wider environmental benefits of the Proposed Development in terms of achieving net zero by 2050 and a decarbonised electricity system by 2035 would outweigh any less than substantial harm to heritage assets. As such, the Proposed Development would not conflict with Section 16 of the NPPF, saved Policy 16 of the adopted NHDC Plan, Policy NHE9 of the WNDP, Policies SP13, HE1, HE2, HE4 and Strategic Objective ENV3 of the Emerging Local Plan.

## **5.7 Theme 5: Landscape and Visual**

- 5.7.1 NPS EN-1, Section 5.9 provides detailed guidance for the assessment of landscape and visual effects. This references the use of methodologies established in *Guidelines for Landscape and Visual Impact Assessment*; and *Land Use Consultants (2002)*.
- 5.7.2 Section 14 of the NPPF, paragraph 155 seeks to increase the use and supply of renewable and low carbon energy, while ensuring adverse landscape and visual effects are satisfactorily address. Section 15 of the NPPF, paragraph 174 seeks to protect and enhance valued landscape and recognise the intrinsic character and beauty of the countryside.
- 5.7.3 The adopted and emerging development plan contains numerous policies that seek to conserve designated landscapes and protect landscape character and visual amenity, which replicate the main principals set out in the NPPF. These are set out in Appendix J and are referenced in the assessment below.

### *Assessment*

- 5.7.4 Appendix B provides a detailed Landscape and Visual Impact Assessment (LVIA) 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 9km from the Site, and is supported by visualisation material, including Zones of Theoretical Visibility (ZTV) mapping and photomontages.

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- 5.7.5 The Site comprises large-scale arable fields across gently undulating landform which falls from east to west, bounded by intermittent hedgerows with hedgerow trees.
- 5.7.6 The layout of the Proposed Development has been designed to relate the existing landscape pattern and seeks to conserve and restore landscape fabric. This would be achieved through the retention and enhancement of existing hedgerows and tree cover within and around the Site, and the planting of new hedgerows and woodland to provide a permanent improvement to the landscape fabric. This would accord with landscape character guidelines published at a regional and county level.
- 5.7.7 There would be a change in land use across the Site from agricultural land to land with a twin function of renewable energy generation and continued agricultural use through livestock farming.
- 5.7.8 The introduction of the Proposed Development would increase the influence of built development across the Site, resulting in a moderate adverse effects. However, the pattern of vegetation cover in the landscape around the Site is such that existing tree belts and hedgerows would provide considerable screening greatly reducing the overall extent over which the Proposed Development would be perceived as a new landscape characteristic. The effect on landscape character would not be substantial beyond the Site boundary, with a moderate to minor adverse effect reported in Appendix B, which would not be significant.
- 5.7.9 The ZTVs, supported by the viewpoint photography and photomontages of the Proposed Development demonstrate that there would be limited visibility of the Proposed Development due to its low height, existing screening around the Site, and the influence of landform.
- 5.7.10 In the short-term, major to moderate adverse visual effects would occur from parts of the Hertfordshire Way along the northern boundary of the northern part of the Site, and from part of Graveley Lane which passes between the northern and southern parts of the Site. From each of these routes the adverse visual effects relate to where there are gaps in the existing boundary vegetation. In the short-term, these visual effects would be significant.
- 5.7.11 Once the proposed mitigation planting has established, and changes to the management of existing hedgerows are effective the Proposed Development would



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- be largely screened in close proximity views. Therefore, the medium to long-term visual effects on receptors along the Site boundary would reduce to levels which would not be significant.
- 5.7.12 In the wider study area, the Proposed Development would not generally be clearly visible because of landform and the extent of vegetation around settlements, roads, and public rights of way. There would be intermittent elevated locations to the south and within the Chilterns AONB where there would be distant views of the Proposed Development. These views would be from short sections of public rights of way, and at a long distance from the Site. Whilst the Proposed Development would be visible it would have no greater than a minor adverse effect on views, which would not be significant.
- 5.7.13 The LVIA has found that the medium and long-term landscape and visual effects of the Proposed Development would be not significant and that long-term benefits would result following decommissioning due to the retention of proposed hedgerows and woodland belts that have established over the 40-year life of the project.
- 5.7.14 It is considered that the LVIA has been undertaken in accordance with the best practice guidance referenced in EN-1 and NE1 of the WNDP. Due to the careful design of the Proposed Development and associated landscape mitigation proposals there would only be limited medium to long term landscape and visual effects beyond the Site boundary. There would be no significant effects on designated landscapes.
- 5.7.15 It is considered that the wider environmental benefits of the Proposed Development in terms of achieving net zero by 2050 and a decarbonised electricity system by 2035 would outweigh any limited adverse landscape and visual effects. In addition, positive impacts following decommissioning would result because of the retained woodland and hedgerows restoring the landscape fabric of the area, which has become degraded. The Proposed Development would not conflict with Section 15 of the NPPF, saved Policy 11 of the adopted NHDC Plan, Policies NE1 and NE8 of the WNDP, Policies SP5 and NE3 of the Emerging Local Plan.

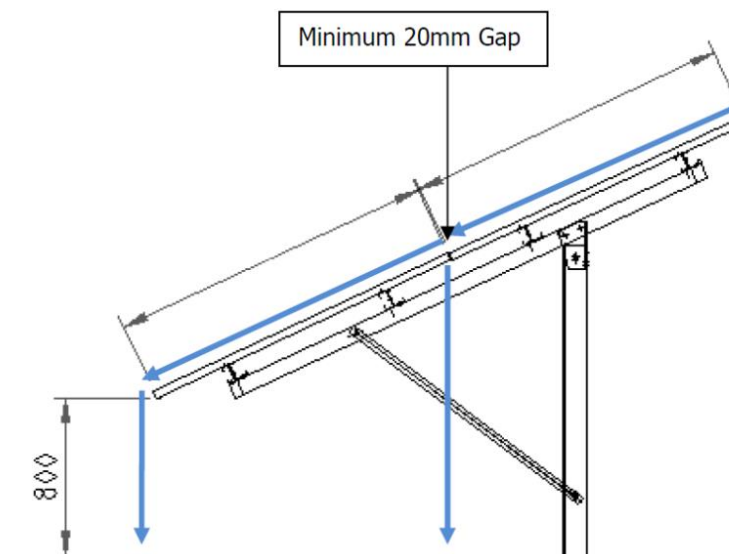
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## 5.8 Theme 6: Other Environmental Issues

### ***Flood Risk***

- 5.8.1 NPPF, NPS EN-1 and the PPG in respect of flood risk and coastal change require applications in Flood Zones 2 and 3 to be accompanied by a Site-specific flood risk assessment (FRA). In addition, a FRA is also required for developments in Flood Zone over 1 hectare.
- 5.8.2 A FRA is provided at Appendix D and confirms that the Site is in Flood Zone 1 and has a low probability of flooding. There are small parts of the Site that are identified as at risk from surface water flow pathways from adjacent ditches. However, all sensitive infrastructure would be located outside of these areas and surface water depths would be <300mm. As such the Proposed Development would not be at risk of flooding and a Sequential Test is not required.
- 5.8.3 In terms of surface water run-off from the Proposed Development the LLFA indicated in their screening response that Solar Farm should be treated as an impermeable surface. Whilst is true for an individual panel this is not the case for solar panel support tables. As illustrated below rainwater falling on the solar panels will fall between the gaps with adjacent panels, landing on the ground beneath the array and percolating to ground water. As such, there will not be large volumes of water cascading off the bottom edges of the solar panel tables that would require a French drain at the base.

**Plate 5.3: Panel Run-off**



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- 5.8.4 Research undertaken into the hydrological response of solar farms (Hydrologic Response of Solar Farms. (Cook L.M. and McCuen R.H (2013) Journal of Hydrologic Engineering 18: pp 536-541)<sup>28</sup> states that: *‘Various sensitivity analyses were conducted including changing the storm duration and volume, soil type, ground slope, panel angle, and ground cover to determine the effect that each of these factors would have on the volumes and peak discharge rates of the runoff. The addition of solar panels over a grassy field does not have much of an effect on the volume of runoff, the peak discharge, nor the time to peak. With each analysis, the runoff volume increased slightly but not enough to require storm-water management facilities’.*
- 5.8.5 On sites such as this, which is gently sloping and will be managed as permanent grassland below the panels (see plate 5.4) attenuation features are not considered necessary. Based on the above research the most important factors in respect of infiltration and avoiding overland flows is ensuring that there is no compaction of the soils during construction and that a grass sward is established and maintained across the site. These factors could be controlled by condition and a Construction Environmental Management Plan (CEMP) and Landscape and Environmental Management Plan (LEMP).

**Plate 5.4: Establish Grassland Under Solar Panels**



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<sup>28</sup> <https://usesny.org/wp-content/uploads/2020/02/Hydrologic-Response-of-Solar-Farms.pdf>

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- 5.8.6 The existing Site is used for intensive agriculture with periods where soils are exposed, and run-off is likely to increase. Following construction the fields would be permanently managed as grassland and this will result in reduced surface water run-off compared to the existing situation, particularly during winter months.
- 5.8.7 In terms of the need for wider surface water drainage the impermeable areas associated with the Proposed Development (such as the inverter stations, control building, etc) would negligible. Infiltration trenches would be provided adjacent to each of these elements to manage any increased run-off.
- 5.8.8 Site access tracks would be constructed using a geotextile overlain by low fines crushed stone which would result in a permeable surface. This would allow surface water to infiltrate through the road surface.
- 5.8.9 Figure 3 of the FRA indicates that the superficial deposits overlaying the Site are varied and include sand and gravel / clay, silt, sand and gravel / clays and silt / chalky, with sands and gravel and clays and silts. Average infiltration rate of  $3 \times 10^{-7}$  m/s (0.001 m/hr) is commonly applied to sandy silty clays. This is considered sufficient for drainage strategy proposed. In the small areas of clays and silts where infiltration might be reduced consideration would be given to including infiltration swales to manage surface water in these areas. It is suggested that the design of the surface water drainage strategy could be secure through a suitably worded planning condition.
- 5.8.10 The FRA complies with the flood risk planning requirements set out in Section 14 of the National Planning Policy Framework, Policy FR1 of the WNDP, Policies NE7 and NE8 of the Emerging Local Plan.

### ***Transport and Traffic***

- 5.8.11 Traffic generation during the solar farm's operational phase would be minimal and limited to maintenance engineers in small vans and agricultural access for sheep grazing and /or mowing.
- 5.8.12 The Transport Statement presented in Appendix I concludes that the level of trip generation associated with the construction stage of the Proposed Development would not be significant in terms of the highway network capacity and would only take place over a limited and temporary period. The existing field access gates would need to be widened to facilitate construction access. Suitable visibility splays for measured traffic speeds along Graveley Lane can be achieved and maintained.

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- 5.8.13 The Transport Statement provided demonstrates that the impact would be such that there is no requirement for specific mitigation, other than through a Construction Environmental Management Plan (CEMP) as part of a planning condition.
- 5.8.14 Overall, the highways and transportation impact would be limited due to the characteristics of the Proposed Development and would not conflict with policies of the adopted and emerging development plan.

### ***Amenity***

- 5.8.15 NPPF paragraphs 185 seeks to ensure that noise and light pollution is considered when determining applications for new development. This is to ensure that the amenity of existing receptors is not unduly impacted by a development. Potential effects associated dust during construction and with glint and glare from solar panels could also have potential effects on local amenity.
- 5.8.16 The Noise Assessment at Appendix F concludes that the Site can be designed to operate such that it complies with all appropriate and relevant noise standards and guidance. As such, there would be no significant adverse noise effects because of the Proposed Development that could have an unacceptable impact on the amenity of nearby receptors.
- 5.8.17 The Proposed Development would not be illuminated at night. The only lighting would be security lighting on the switchgear and control buildings that would only be activated if there was an intruder or if a maintenance engineer visits when it is dark. All security lighting would be low level and directed down and away from the Site perimeter. As such there would be no unacceptable light pollution because of the Proposed Development.
- 5.8.18 The Proposed Development would not result in any emissions to air or discharges to watercourses during the operational stage. Dust and storage of material that could be discharged to water courses during the construction stage of the project would be managed in accordance with industry best practice and this would be set out in a Construction Environmental Management Plan (CEMP).
- 5.8.19 The Glint and Glare Assessment provided at Appendix G concludes that there would be no unacceptable effects on the amenity of nearby residential receptors or road users given the screening afforded by existing vegetation and proposed mitigation planting.

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5.8.20 The proposal is not considered to have any adverse impact in respect of noise, light pollution, air and water quality or glint and glare. As such it is considered compliant with the NPPF and Policies D3 of the Emerging Local Plan.

***Material Considerations***

5.8.21 As previously stated, planning applications are required to be determined against the policies of the development plan unless material considerations indicate otherwise. The requirement to have regard to ‘*any other material considerations*’ is in effect a statutory requirement to ensure that all other relevant matters have been considered. The following section considers other material consideration that are not addressed in the context of the environmental issues considered above or the urgent need for renewable energy development set out in Section 4.0.

***National Planning Policy Framework (NPPF)***

5.8.22 The NPPF is a material consideration in determination of the planning application for the Proposed Development, particularly given the aged nature of the adopted saved local plan policies.

5.8.23 Specific aspects of the NPPF relevant to the Proposed Development are referenced under the specific themes considered above. It is considered that due to the temporary and easily reversible nature of the Proposed Development, the careful design and the embedded mitigation that the scheme represents sustainable development in the context of the NPPF. As such there should be a presumption in favour of development unless other considerations dictate otherwise.

5.8.24 There is a degree of tension with the NPPF in respect of Green Belt, Heritage, landscape and use of BMV agricultural land. However, the PDAS has demonstrated the level of harm for each consideration is limited or can be limited through appropriate mitigation. This limited harm is significantly outweighed by the immediate and pressing need for renewable energy generation in response to the Climate Change Emergency announced by North Hertfordshire Council and Government’s target to achieve Net Zero by 2050 and a decarbonised electricity system by 2035.

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***National Planning Practice Guidance (NPPG)***

5.8.25 The Planning Practice Guidance website includes a section for Renewable and Low Carbon Energy, the key theme of which builds upon the wording of the paragraphs under section 14 of the NPPF, highlighting the importance of renewable energy generation to the UK's security of electricity supply and greenhouse gas reduction targets, but making it clear that planning permission will only be granted where the impacts at the specific Site are, or can be made, acceptable.

5.8.26 As set out in the PDAS and technical appendices it is considered that the Site-specific impacts of the Proposed Development have been made acceptable through good design and appropriate mitigation.

***UK Solar PV Strategy Part 1: Roadmap to a Brighter Future (DECC, October 2013)***

5.8.27 This document sets out the UK's vision for the solar PV sector, which is based around four guiding principles. These principles are summarised as:

- Supporting cost-effective projects to ensure that solar PV has a role alongside other energy generation technologies
- Supporting solar PV which deliver genuine carbon reductions to meet the UK's renewable energy targets
- Supporting solar PV proposals that are appropriately Sited and give proper weight to environmental considerations, such as landscape and visual impact
- Supporting solar PV proposals which respond to challenges of deploying high volumes of solar PV (such as grid balancing and grid connectivity).

5.8.28 The Proposed Development would deliver all the above guiding principles through the generation of subsidy free clean energy and associated carbon reductions to meet the UK's renewable energy target of net zero by 2050.

***UK Solar PV Strategy: Part 2 (DECC, April 2014).***

5.8.29 The UK Solar PV Strategy Part 2, builds on the four principles set out in Part 1 of the Strategy, setting out the ambitions for the different main markets for solar PV in the UK. Whilst the Strategy notes a desire to focus solar PV growth on roof space and previously developed land, it is also noted that *'There is still a place for large-scale field-based solar in the UK's energy mix.'*

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5.8.30 Since the strategy was developed the subsidies for solar PV have stopped and as set out in Section 4.0 the delivery of the 2050 net zero target is likely to be delivered through an increased amount of large-scale field-based solar.

### ***IPCC Special Report on Global Warming of 1.5°C***

5.8.31 The Special Report on Global Warming of 1.5°C was published by the Intergovernmental Panel on Climate Change (IPCC) in October 2018. The report explores the benefits of aiming for the Paris Agreement’s aspirational target of no more than 1.5°C of global warming, rather than bottom level target of 2°C. The report finds that a global warming of 1.5°C will be damaging but is far less damaging than a 2°C increase in global temperature. The report states that to achieve the aspirational target of 1.5°C, there will need to be rapid and far-reaching transition in energy, land, urban and infrastructure (including transport and buildings), and industrial systems. To achieve this aim the report projects an annual average investment need, in the energy system, of around 2.4 trillion USD<sup>2010</sup> between 2016 and 2035 representing approximately 2.5% of the world GDP.

5.8.32 In summary, the IPCC report highlights the importance of investing in sustainable renewable and low carbon energy production as part of the global drive for climate change mitigation. If consented, the Proposed Development would make a valid contribution to climate change mitigation.

### ***COP 26***

5.8.33 The Glasgow Climate Pact is the culmination of the recent United Nations COP26 conference in Glasgow. One of the aims of the COP 26 conference was to keep the Paris target of no more than 1.5 degree global temperature increase. However, despite commitments to reduce CO<sub>2</sub> emission the current pledges will only limit warming to 2.4 degrees and further negotiations will be required over the coming years to achieve 1.5 degrees.

5.8.34 COP President Alok Sharma stated:

*‘We can now say with credibility that we have kept 1.5 degrees alive. But, its pulse is weak and it will only survive if we keep our promises and translate commitments into rapid action. I am grateful to the UNFCCC for working with us to deliver a successful COP26.*



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*From here, we must now move forward together and deliver on the expectations set out in the Glasgow Climate Pact, and close the vast gap which remains.*

*Because as Prime Minister Mia Mottley told us at the start of this conference, for Barbados and other small island states, 'two degrees is a death sentence'.*

*It is up to all of us to sustain our lodestar of keeping 1.5 degrees within reach and to continue our efforts to get finance flowing and boost adaptation. After the collective dedication which has delivered the Glasgow Climate Pact, our work here cannot be wasted'. (emphasis added)*

- 5.8.35 The UK needs to lead by example and rapidly deliver a low carbon economy to assist in the global target of limiting global warming to less than 1.5 degrees. Developments such as the Proposed Development will play an important role in decarbonising the electricity sector by 2035 and should be supported in the context of COP 26 and the Glasgow Climate Pact, and the Paris Agreement.

**Council Plan 2020-2025**

- 5.8.36 The Council Plan sets out key objectives for North Hertfordshire Council between 2020 and 2025.

- 5.8.37 Objective 3 states the following:

- *Identify the Council's current carbon footprint.*
- *Consult with the public and with interest groups on strategies for achieving net zero carbon emissions by 2030.*
- *Identify the district's carbon footprint and in consultation with the public identify means by which the council can assist the residents and businesses of North Herts achieve the target of net zero emissions across the district by 2030'.*

- 5.8.38 Objective 5 states the following:

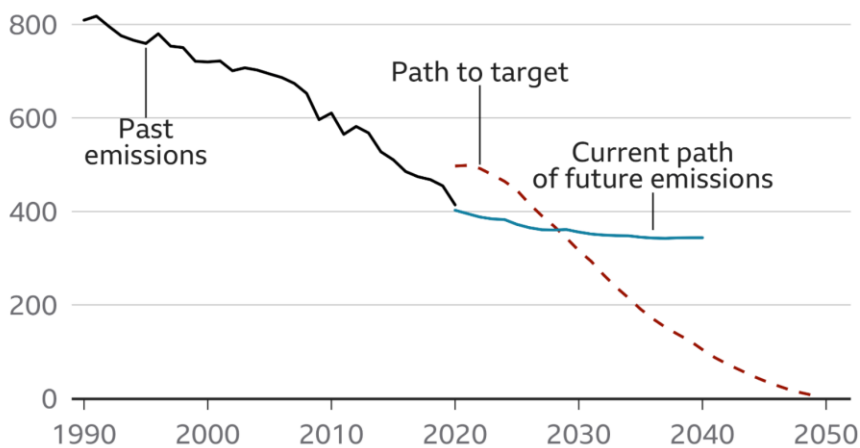
*'Support in every possible way the achievement of the climate change targets, particularly carbon reduction targets.*

- 5.8.39 North Hertfordshire are committed to reducing the carbon footprint of their own activities to Net Zero by 2030 and to be fully Net Zero by 2040. The only way that this can be achieved within the proposed timescale is to consent appropriate renewable energy generation as soon as practical to offset the carbon emission from the district.

5.8.40 The need to accelerate low carbon energy generation across the UK is highlighted by emission data from the Department for Business, Environment and Industrial Strategy (BEIS) for 2020, which indicates that the reduction in future emission needs to be rapidly accelerated if the Climate Change Committee targets for Net Zero are to be met. This is illustrated below by the infographic from the BBC.<sup>29</sup>

### UK will miss targets without more action

Megatonnes of greenhouse gas emissions a year



Emissions data for 2020 is provisional. Future emissions could be higher or lower. Past and future emissions from UK gov, target path from Climate Change Committee

Source: Dept. for Business, Environment & Industrial Strategy, CCC



5.8.41 If North Hertfordshire are serious about their commitment to tackling the climate change emergency action is required now to dramatically alter the current path of future greenhouse gas emissions within the district and nationally.

<sup>29</sup> <https://www.bbc.co.uk/news/science-environment-58899006> (20<sup>th</sup> October 2021)

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## 6.0 SUMMARY AND CONCLUSIONS

- 6.1.1 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. A very ambitious sub-target for decarbonising the electricity system by 2035 has recently been announced by Government and the Proposed Development would assist in achieving this sub-target.
- 6.1.2 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 2050. The data presented in this PDAS will be updated by National Grid ESO in July 2022 to reflect the more ambitious target of decarbonising the electricity system by 2035. This will only increase the urgency of the need for schemes such as the Proposed Development to be consented and constructed as soon as possible.
- 6.1.3 At a local level North Hertfordshire only generate c. 10% of their energy requirements from renewable sources and have not consented a renewable energy project since 2015 (based on government data). If North Hertfordshire are serious about their commitment to tackling the climate change emergency action is required now to dramatically alter the current path of future greenhouse gas emissions within the district and nationally.
- 6.1.4 The Proposed Development is financially 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.
- 6.1.5 The Proposed Development represent sustainable development and as such there should be a presumption in favour of development, unless other material considerations dictate otherwise. Whilst there is a degree of tension with the NPPF, adopted and emerging development plan policies in respect of Green Belt, heritage, landscape and use of BMV agricultural land the PDAS has demonstrated that the level of harm for each is limited or can be limited through appropriate mitigation. This limited harm is significantly outweighed by the immediate and pressing need from renewable energy generation in response to the Climate Change Emergency announced by North Hertfordshire Council and the Government's target to achieve Net Zero by 2050 and a decarbonised electricity

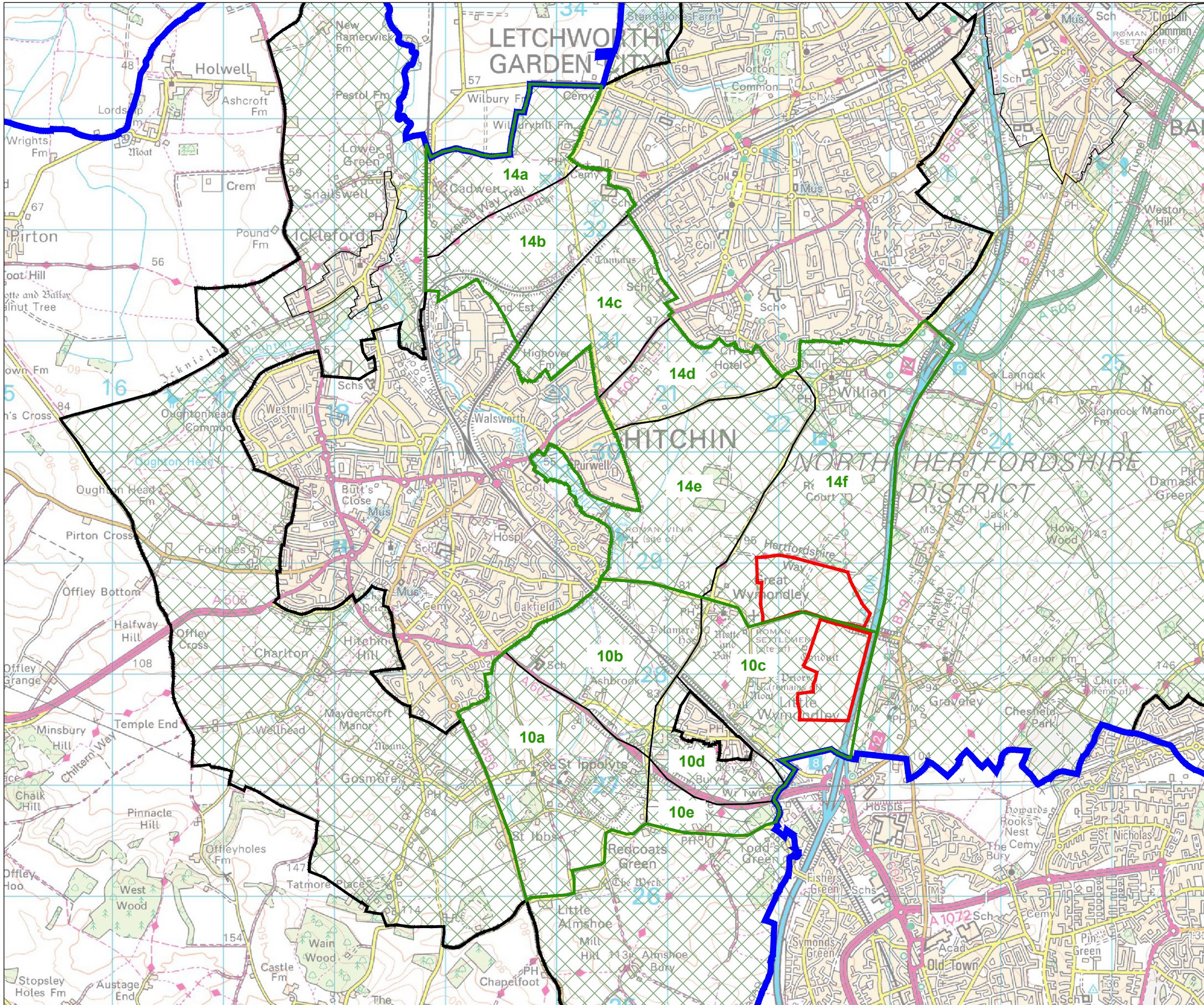
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system by 2035. As such the Proposed Development should be supported, and planning permission granted.

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## Figures





-  Application Boundary
-  North Hertfordshire District
-  Green Belt - Adopted Local Plan
-  Strategic Green Belt Parcels
-  Green Belt Sub-Parcels (labelled)

Priory Farm Solar Array

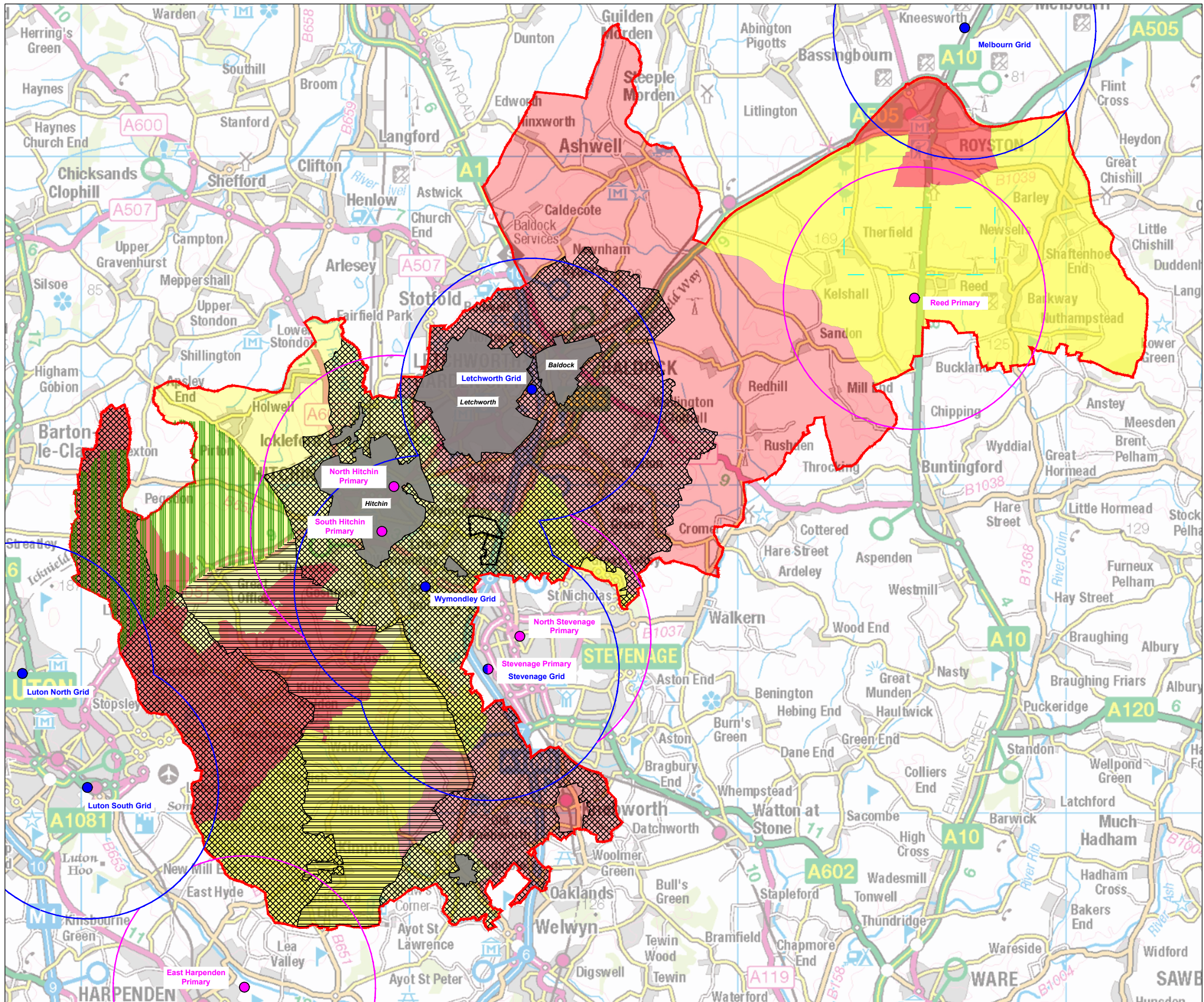
Figure 5.1











North Hertfordshire  
Green Belt Review





Scale  
NTS


Date  
October 2021





-  Application Boundary
-  North Hertfordshire District
-  Chilterns AONB
-  Green Belt - Adopted Local Plan
-  Urban Area inset in Green Belt
-  Approximate extent of proposed Green Belt extension - Emerging Local Plan
-  132kV substation
-  EHV Substation (>22kV)
-  4km offset from 132kV substation
-  4km offset from >22kV substation

- Solar Curtailment**  
Source: UK Power Networks (DNO)
-  Below 5% annual energy curtailment (no areas shown)
  -  Between 5% and 10% annual energy curtailment
  -  Between 10% and 20% annual energy curtailment (no areas shown)
  -  Above 20% annual energy curtailment

 Approximately 941 hectares

Priory Farm Solar Array	
Figure 5.2	
North Hertfordshire Solar Curtailment & Site Opportunities	
Scale NTS	Date October 2021



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## Appendix A: Screening Opinion



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## Appendix B: Landscape and Visual Impact Assessment

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## Appendix C: Heritage Assessment

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## Appendix D: Flood Risk Assessment

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## Appendix E: Preliminary Ecological Appraisal

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## Appendix F: Noise and Vibration Assessment

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## Appendix G: Glint & Glare Assessment

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## Appendix H: Agricultural Land Assessment

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## Appendix I: Transport Statement



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## Appendix J: Planning Policy Wording