

Joint Local Impact Report of
Cherwell District Council
Vale of White Horse District Council
West Oxfordshire District Council
Oxfordshire County Council

BOTLEY WEST SOLAR FARM (BWSF) REF: EN010147

June 2025



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Executive Summary

- E.1 This Local Impact Report (LIR) is a joint submission by Cherwell District Council (CDC), the Vale of White Horse District Council (VWHDC), West Oxfordshire District Council (WODC) and Oxfordshire County Council (OCC).
- E.2 The LIR has assessed the impacts of the proposed development that have been identified within the applicant's Environmental Statement, within the context of local knowledge and understanding of the area, and with reference to relevant local and national policies.
- E.3 The provision of renewable energy of the nature proposed is supported in principle. Notwithstanding, the delivery of new renewable energy infrastructure must be weighed against the wider environmental, economic and social impacts to ensure that negative impacts do not outweigh any broader benefits that may arise from the proposed development.
- E.4 The Botley West Solar Farm will result in numerous impacts which can be summarised as follows:

Topic Area	Potential Impact
Green Belt	Negative
Historic Environment	Negative – Built Heritage Neutral – Archaeology
Landscape and Visual Impact Assessment	Negative
Ecology, Nature Conservation and Trees	Negative*
Hydrology and Flood Risk	Neutral
Ground Conditions	Neutral
Mineral safeguarding	Negative
Traffic and Transport	Neutral
Public Rights of Way	Negative
Noise and Vibration	Neutral
Climate Change / Resilience	Neutral – Subject to resilience
Socio-economic	Jobs – Neutral Tourism – Negative
Human Health	Neutral
Agricultural Land Use	Negative
Waste and Resources	Negative
Air Quality	Neutral
Aviation impacts	Negative
Cumulative Effects and Inter-relationships	Negative

The key positive impact of the proposed development is the generation of green energy over a 42-year period.

Landscape impact and related impacts to heritage assets and their settings are considered the most significant negative impacts of the proposal, along with inappropriate development in the Oxford Green Belt.

Whilst the Councils welcome the positive steps that have been taken to reduce the impact on archaeology, there have been limited attempts to mitigate other identified impacts. As such there remain numerous areas of concern and disagreement with the proposed development including:

- Inappropriate development in the Green Belt.
- Significant impact on local landscape character and views.
- Significant impact on heritage assets.
- Further ecological and arboricultural survey information is required.
- Insufficient landscape and Public Rights of Way (PRoW) mitigation.
- Sterilisation of mineral resources.
- Loss of best and most versatile agricultural land.
- Harm to aviation activities resulting in an unacceptable risk to public safety.

Summaries of each impact are included at the start of each section of Chapter 7: Local Impacts.

The Oxfordshire Host Authorities' view is that a significant amount of further work on the extent of the scheme, the assessment of impacts, and mitigation requirements is needed in order to reduce the negative impacts of the scheme as submitted. As well as an assessment of local impacts, this LIR includes suggested mitigation measures, improvements to the Applicant's Environmental Statement, and proposed amendments to the draft Development Consent Order.

1. Introduction

- 1.1 Botley West Solar Farm Project (BWSF) comprises approximately 1,418ha of land that is located within the administrative areas of Cherwell District Council (CDC), the Vale of White Horse District Council (VWHDC), West Oxfordshire District Council (WODC) and Oxfordshire County Council (OCC).
- 1.2 The proposed development was accepted for examination on 13th December 2024 by the Planning Inspectorate and is now in the examination phase for this Nationally Significant Infrastructure Project (NSIP).
- 1.3 The Examining Authority (ExA) has invited CDC, VWHDC, WODC and OCC as ‘Host Authorities’ to submit a Local Impact Report (LIR). This report comprises the joint LIR of CDC, VWHDC, WODC and OCC. The ‘Host Authorities’ will be collectively referred to in this report as the ‘Oxfordshire Host Authorities’ (OHA)
- 1.4 The OHA have had regard to the purpose of LIRs as set out in S60(3) of the Planning Act 2008 (as amended), the Government’s guidance “Examination stage for Nationally Significant Infrastructure Projects” (April 2024) and the Planning Inspectorate’s Advice Note One, Local Impact Reports.
- 1.5 S60(3) of the Act describes the LIR as: ‘a report in writing giving details of the likely impact of the proposed development on the authority’s area (or any part of that area)’.
- 1.6 The LIR is a means by which the impacts and their significance are presented with the ExA undertaking a balancing exercise, the consideration of such impacts. The LIR provides a broad overview of the issues (positive, negative and neutral) that might arise from the proposed development.
- 1.7 The LIR is intended as a factual document and does not attempt to conclude on the acceptability of the proposals. However, it does seek to identify where there is compliance (or alternatively non-compliance) with national and local plan policy, and to distinguish between matters that are of most potential impact and those that are either temporary or less significant in the longer term.
- 1.8 CDC, VWHDC, WODC and OCC have made separate Written Representations/Local Impact Reports conveying their own views on the overall acceptability of the scheme.

2. Proposed Development

- 2.1 The LIR does not describe the proposed development any further, relying on the applicant's description as set out at paragraph 1.4.1 of chapter 1 of the Environmental Statement [**APP-038**], namely;

"... Three areas of solar installation (Northern Site, Central Site and Southern Site) with interconnecting cables, which together would generate renewable power through photovoltaic (PV) panels to deliver approximately 840MWe of power to the National Electricity Transmission System (NETS), which would provide secure and clean energy of an equivalent level to meet the needs of approximately 330,000 homes". By paragraph 1.4.4, it is "anticipated that the Project will be constructed, operated and decommissioned within 42 years".

3. The Site

- 3.1 The proposed development extends from an area of land in the north, situated between the A4260 and the Dorn River Valley near Tackley and Wootton (Northern Site Area), through a central section, situated broadly between Bladon in the north and Cassington in the south and Church Hanborough to the west and Kidlington to the east (Central Site Area), and connecting to a section further south near to Farmoor Reservoir and north of Cumnor (Southern Site Area), where the proposed development will connect to the National Grid transmission network.
- 3.2 The LIR relies on the applicant's description and environmental designation for each site area as set out in Chapter 2 of the Environmental Statement - Existing Baseline [**APP-039**], 2.3 Northern Site (West Oxfordshire and Cherwell), 2.4 Central Site (West Oxfordshire and Cherwell), 2.5 Southern Site (Vale of White Horse), and 2.6 Cable Route.
- 3.3 The proposed development is of a substantial scale and is comprised of various elements that will have an impact on the site and surrounding area. The impacts of the proposed development are considered in detail in Section 7 (Local Impacts).

4. Relevant Planning History

- 4.1 Due to the scale of the proposed development and the geographical coverage of the proposals spanning three district council areas, there is inevitably a degree of planning history relating to land within and adjacent to the project boundary, some of which is relevant to the assessment of the proposed solar farm's impact.
- 4.2 Two planning applications of note relating to development within the Green Belt and development affecting Ancient Woodland are covered by the applicant's cumulative developments longlist and shortlist [**APP-224**]

Table 1 - Relevant Planning History

Planning Reference	Description	Decision
22/03501/FUL (referred to below as Appeal B) 22/03502/FUL (referred to below as Appeal A)	Retrospective application for continued use of land for outdoor adventure camping for 22 weeks per calendar year between the 1st May to 2nd October, including camp areas, kitchen areas, storage areas, shower and toilet areas, drop off and turning areas	Refused and Dismissed at Appeal
The main issues for appeal A are: - the impact on the proposal on protected species, with particular regard to Great Crested Newts; and - the effect of the proposal on the character and appearance of the area. The main issues for appeal A and B are: - whether each proposal would be inappropriate development in the Green Belt and its effect on the openness of the Green Belt having regard to the National Planning Policy Framework (The Framework) and any relevant development plan policies; - the effect of each proposed development on irreplaceable habitat within the ancient woodland. - Finally, with respect to appeals A and B if either, or both proposals, are found to be inappropriate development, a further issue would be whether the harm by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations, so as to amount to very special circumstances to justify it.		

4.3 The Planning Inspectorate issued Appeal Decisions in relation to the above planning applications on 16 July 2024 with the following references;

- Appeal A Ref: APP/D3125/W/23/3326709
- Appeal B Ref: APP/D3125/W/23/3326710

4.4 Appeal A relates to an area of woodland and open areas to the east of Cassington Road and appeal B relates to a woodland area to the west of Cassington Road, both of which are in the administrative area of WODC. The car park for appeal B is within the area of the proposed development.

4.5 Both appeals were dismissed. Below is a summary of reasons extracted from the Appeal Decision;

- although the proposed use would be temporary, the ongoing visual effect of the hardstanding and human activity would be evident within these sites. This intrusion into the Green Belt, taking all activity and development associated with the use into account, would represent an encroachment of development that

would conflict with a main purpose of the Green Belt. This would be contrary to a fundamental aim of the Green Belt to keep land permanently open.

- As it has not been demonstrated that the proposals for Sites 1 and 2 would preserve the openness of the Green Belt, and would result in encroachment, the proposals associated with Appeals A and B would be inappropriate development in the Green Belt which are, by definition, harmful to the Green Belt.
- the proposed use, in respect of both Appeals A and B, would result in significant and sustained harm to the ancient woodland. This harm would result in conflict with LP policy EH3 and the Framework in terms of its effect on the ancient woodland. These seek, among other matters, for development to avoid the loss, deterioration or harm to locally important wildlife and geological sites and sites supporting irreplaceable habitats except in exceptional circumstances.
- the proposal would harm the site's countryside setting and the character and appearance of the area. Consequently, the proposal associated with appeal A would conflict with LP policy EH2 and the Framework. These policies include the requirement for development to conserve the natural features of the landscape and to recognise the intrinsic character and beauty of the countryside.
- whilst the proposal may result in some localised degrading of the quality of the woodland it would not have a material effect on the significance of the WHS or the registered park and garden.
- I have concluded that both appeal A and B would result in development that would not preserve the openness of the Green Belt and would result in encroachment. These would therefore be inappropriate development that would, by definition, harm the Green Belt. Paragraph 153 of the Framework requires substantial weight to be given to any harm to the Green Belt. Furthermore, both proposals would result in the degradation of the ancient woodland, a further matter of substantial weight.

4.6 The OHA consider the planning history detailed above to be relevant to the assessment of local impacts for the proposed development, due to the spatial relationship of the land parcels in question and the matters relevant to determining the Planning Applications and subsequent appeal decisions.

4.7 For the purposes of assessing cumulative effects (and the local impacts of the proposed development), the LIR relies on the list of cumulative schemes set out in Chapter 20 of the ES [APP-057].

5. Legislative and Policy Context

5.1 This section of the LIR outlines the legislative and planning policy context of the proposed development.

- 5.2 The legislative basis for the proposed development is set out in the Planning Act 2008, which defines the process under which consent for NSIPs are determined, and secondary legislation made under that Act.
- 5.3 In accordance with Section 104(2) of the Planning Act 2008, the Secretary of State is required to have regard to any relevant national policy statements (NPS), amongst other matters, when deciding whether or not to grant a development consent.

Energy National Policy Statements

- 5.4 The relevant NPSs to this NSIP are as follows:

- EN-1 Overarching National Policy Statement for Energy;
- EN-3 Renewable Energy Infrastructures; and
- EN-5 Electricity Networks Infrastructure.

EN-1 – Overarching National Policy Statement for Energy

- 5.5 NPS EN-1 outlines the overarching general principles, processes and impacts to be taken into consideration for all types of NSIP covered by the Energy NPSs. Parts 1 to 4 set out introductory themes, the Government’s general policy on energy demand and energy infrastructure, the need for new NSIPs and assessment principles.
- 5.6 Paragraph 4.1.5 of NPS EN-1 states that in considering any proposed development, in particular when weighing its adverse impacts against its benefits, the Secretary of State should take into account:
- its potential benefits including its contribution to meeting the need for energy infrastructure, job creation, reduction of geographical disparities, environmental enhancements, and any long-term or wider benefits
 - its potential adverse impacts, including on the environment, and including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for any adverse impacts, following the mitigation hierarchy.
- 5.7 Paragraph 4.1.7 states “... For projects which qualify as CNP [Critical National Policy] Infrastructure, it is likely that the need case will outweigh the residual effects in all but the most exceptional cases. This presumption, however, does not apply to residual impacts which present an unacceptable risk to, or interference with, human health and public safety, defence, irreplaceable habitats or unacceptable risk to the achievement of net zero.”
- 5.8 Paragraphs 4.2.1 to 4.2.5 of NPS EN-1 set out which energy projects are classified as CNP infrastructure, and this includes electricity generation from renewable sources

that do not include fossil fuels. The OHA accept this development will be considered CNP infrastructure.

- 5.9 Paragraph 4.2.12 of NPS EN-1 states that applicants should set out how residual impacts will be compensated for as far as possible. Applicants should also set out how any mitigations or compensation measures will be monitored, and reporting agreed to ensure success, and that action is taken.
- 5.10 Paragraph 4.3.19 of NPS EN-1 states that the Secretary of State should consider how the accumulation of, and interrelationship between, effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place.
- 5.11 Moreover, paragraph 4.3.20 states that the Government has set 13 legally binding targets for England under the Environment Act 2021, covering the areas of: biodiversity; air quality; water; resource efficiency and waste reduction; tree and woodland cover; and Marine Protected Areas. Meeting the legally binding targets will be a shared endeavour that will require a whole of government approach to delivery. The Secretary of State have regard to the ambitions, goals and targets set out in the Government's Environmental Improvement Plan 2023 for improving the natural environment and heritage. This includes having regard to the achievement of statutory targets set under the Environment Act.
- 5.12 Paragraph 4.7.1 of NPS EN-1 states the visual appearance of a building, structure, or piece of infrastructure, and how it relates to the landscape it sits within, is sometimes considered to be the most important factor in good design. But high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object – be it a building or other type of infrastructure – including fitness for purpose and sustainability, is equally important. Applying good design to energy projects (per paragraph 4.7.2) should produce sustainable infrastructure sensitive to place, including impacts on heritage, efficient in the use of natural resources, including land-use, and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible.
- 5.13 Paragraph 4.7.6 of NPS EN-1 states that whilst the applicant may not have any or very limited choice in the physical appearance of some energy infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting relative to existing landscape character, landform and vegetation.
- 5.14 Paragraph 5.11.19 of NPS EN-1 sets out that Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place.

EN-3 – National Planning Policy Statement for Renewable Energy Infrastructure

- 5.15 Paragraph 2.1.7 of NPS EN-3 states that “all onshore and offshore electricity generation covered in this NPS that does not involve fossil fuel combustion (that is, renewable generation, including anaerobic digestion and other plants that convert residual waste into energy, including combustion, provided they meet existing definitions of low carbon) are considered to be Critical National Priority (CNP) infrastructure.” Paragraph 2.1.8 states that the assessment principles set out in Section 4 of EN-1 still apply to CNP schemes and that applicants “must show how any likely significant negative effects would be avoided, reduced, mitigated or compensated for, following the mitigation hierarchy”.
- 5.16 Part 2.10 of the NPS EN-3 include policies specific to the development of Solar Photovoltaic Generation. This includes matters that applicants should consider in relation to site selection and design, technical considerations, impacts and mitigations. The impacts (highlighted in paragraphs 2.10.75 to 2.10.126 of NPS EN-3) include:
- Biodiversity, ecological, geological conservation and water management;
 - Landscape, visual and residential amenity;
 - Glint and glare;
 - Cultural heritage; and
 - Construction including traffic and transport noise and vibration.

EN-5 – National Planning Policy Statement for Electricity Networks Infrastructure

- 5.17 NPS EN-5 is relevant to the proposed development as it recognises electricity networks as ‘transmission systems and distribution systems’, which can either be carried on towers/poles or underground, and ‘associated infrastructure’, e.g. substations and converter stations.

National Planning Policy Framework (NPPF)

- 5.18 The NPPF (December 2024) is a material consideration for determining planning applications under the Town and Country Planning Act 1990 (TCPA 1990).
- 5.19 Paragraph 5 of the NPPF states that it does not contain specific policies for NSIPs and that applications for NSIPs are determined in accordance with the decision-making framework in the Planning Act 2008 (as amended) and relevant national policy statements for major infrastructure, as well as any other matters that are relevant (which may include the NPPF).
- 5.20 The NPPF does, however, state that the planning system should support the transition to net zero by 2050 and support renewable and low carbon energy and associated

infrastructure (Paragraph 161). It goes on to state (Paragraph 168(a)) that when determining planning applications for renewable and low carbon energy development, local planning authorities should give significant weight to the benefits associated with renewable and low carbon energy generation and the proposal's contribution to a net zero future.

National Planning Policy Guidance (NPPG).

- 5.21 The National Planning Policy Guidance (NPPG) on renewable and low carbon energy outlines guidance on the specific considerations that relate to large scale ground-mounted solar PV farms (013 Reference ID: 5-013-20150327). It states that one consideration amongst others should be whether land is being used effectively; recommending that large scale solar farms are focused on previously developed and non-agricultural land.
- 5.22 The NPPG advises that where a proposal involves greenfield land, decision makers should consider 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.
- 5.23 With regard to heritage assets, the NPPG advises that great care should be taken to ensure that heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting. As the significance of a heritage asset derives not only from its physical presence, but also from its setting, careful consideration should be given to the impact of large-scale solar farms on such assets. Depending on their scale, design and prominence, a large-scale solar farm within the setting of a heritage asset may cause substantial harm to the significance of the asset.

Written Ministerial Statements ("WMS")

- 5.24 On 15th May 2024 the former Energy Security Secretary told Parliament that with growing geopolitical tension, the best agricultural land must be protected for food security. It was stressed that the government aims to prioritise the best agricultural land for food production, ensuring that large solar projects avoid high-quality land and are instead developed on brownfield, contaminated, industrial, or lower-quality agricultural land.
- 5.25 The Minister outlined that solar will continue to play a key part in government's plans for energy security and net zero, with suitable brownfield areas of lower quality land and rooftops prioritised as locations. It also stressed planning authorities must consider cumulative impacts where several proposals for solar projects come forward in the same area.
- 5.26 The WMS [HCWS466] stated

“... Government recognises that, in some instances, solar projects can affect local environments which may lead to unacceptable impacts for some local communities. The planning system is designed to balance these considerations against the need to deliver a secure, clean, green energy system for the future”.

And

“... As is outlined in the National Policy Statement, the starting position for solar PV developers in taking forward Nationally Significant Infrastructure Projects is that applicants should seek to minimise impacts on the best and most versatile 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.

...

This means that due weight needs to be given to the proposed use of Best and Most Versatile land when considering whether planning consent should be granted for solar developments. For all applicants the highest quality agricultural land is least appropriate for solar development and as the land grade increases, there is a greater onus on developers to show that the use of higher quality land is necessary. Applicants for Nationally Significant Infrastructure Projects should avoid the use of Best and Most Versatile agricultural land where possible”.

Local Planning Policy Context

- 5.27 When determining an application for development consent, by section 104(2)(d), the Secretary of State must have regard to any other matters the Secretary of State thinks are both important and relevant matters and this could include local planning policy.
- 5.28 The local planning policies present a significant material consideration, particularly where they are consistent with NPSs.
- 5.29 Additionally, the policies provide a clear framework by which the councils wish to see new development come forward within their areas, which should be weighed in the overall planning balance.
- 5.30 The proposed development is formed of three solar installation sites which affect the following local authorities:
- Northern Site – OCC, West Oxfordshire and Cherwell
 - Central Site – OCC, West Oxfordshire and Cherwell
 - Southern Site – OCC and Vale of White Horse

- 5.31 Details of the Development Plan for each OHA, as well as the relevant policies from each Development Plan as they relate to the Botley West Solar Farm proposal are set out below.

Cherwell District Council

- 5.32 For Cherwell District the Development Plan comprises the Adopted Cherwell Local Plan 2011-2031 (Part 1) (CLP), 'Saved' policies of the Adopted Cherwell Local Plan 1996 and the Adopted Cherwell Local Plan 2011-2031 (Part 1) Partial Review - Oxford's Unmet Housing Need.
- 5.33 Regulation 10A reviews of the Cherwell Local Plan 2011-2031 Part 1 took place in 2020 and 2023. In 2020, the Council undertook a 5 Year Review of the Local Plan and concluded that the majority of the policies were generally consistent with government policy and/or local circumstances. It did not indicate that the Local Plan policies needed updating. The Review was presented to and approved by the Council's Executive on 4 January 2021.
- 5.34 Two material changes in circumstance since that approval prompted the 2023 Local Plan Review:
- Termination of the Oxfordshire Joint Local Plan work programme; and
 - New evidence in the form of the Housing and Employment Needs Assessment (HENA) 2022
- 5.35 The Regulation 10A Review of Local Plan Policies (February 2023) showed that nearly all policies were generally consistent with government policy and/or local circumstances. It did not indicate that the policies needed updating at this time, with the exception of Policy BSC1 District-Wide Housing Distribution.
- 5.36 The Adopted Cherwell Local Plan 2011-2031 (Part 1) Partial Review – Oxford's Unmet Housing Need was formally adopted as part of the statutory Development Plan in September 2020. The Partial Review provides the strategic planning framework and sets out strategic site allocations to provide Cherwell District's share of the unmet housing needs of Oxford to 2031.
- 5.37 There are no 'made' Neighbourhood Plans within the site area covered by Cherwell District. An area within the northern application site was designated in 2019 to allow Shipton-on-Cherwell and Thrupp Parish Council to produce a Neighbourhood Plan for their Parish, but this has not been progressed.
- **Cherwell Local Plan 2011-2031 Part 1 (CLP) including saved policies from the Cherwell Local Plan 1996 (CLP 1996 Saved)**

Relevant Policies

Adopted Cherwell Local Plan 2011-2031 (Part 1) (CLP)

PSD1 – Presumption in Favour of Sustainable Development

SLE4 - Improved Transport Connections

ESD1 - Mitigating and Adapting to Climate Change

ESD2 – Energy Hierarchy and Allowable Solutions

ESD3 – Sustainable Construction

ESD5 – Renewable Energy

ESD6 – Sustainable Flood Risk Management

ESD7 – Sustainable Drainage Systems

ESD8 – Water Resources

ESD10 – Protection and Enhancement of Biodiversity and the Natural Environment

ESD12 – Cotswold Area of Outstanding Natural Beauty

ESD13 – Local Landscape Protection and Enhancement

ESD14 – Oxford Green Belt

ESD15 – The Character of the Built and Historic Environment

ESD17 – Green Infrastructure

‘Saved’ policies of the Adopted Cherwell Local Plan 1996

C15 – Prevention of Coalescence of Settlements

C25 – Development affecting the site or setting of a scheduled ancient monument

C33 – Protection of Important Gaps of Undeveloped Land

- **Partial Review (CLP review), adopted in 2020**

Relevant Policies

None

- **Emerging Cherwell Local Plan**

- 5.38 CDC has prepared a proposed submission draft (Regulation 19) of the Cherwell Local Plan Review 2042 which is published and open for public consultation until 25 February 2025 under the transitional arrangements set out in paragraph 234(a) of the revised NPPF.
- 5.39 Under the transitional arrangements set out in paragraph 235, the Cherwell Local Plan Review 2042 will be examined under the December 2023 version of the NPPF.
- 5.40 The weight to be afforded to this plan is currently limited but this will increase as the plan progresses through the consultation and examination process. This plan is intended to replace the adopted Cherwell Local Plan 2015 and ‘saved’ policies in the Cherwell Local Plan (1996).

Relevant Policies

CSD 1 - Mitigating and Adapting to Climate Change;
CSD 3 - Achieving Net Zero Carbon Development, Non-residential
CSD 5 - Embodied Carbon;
CSD6 - Renewable Energy;
CSD7 - Sustainable Flood Risk Management;
CSD8 - Sustainable Drainage Systems (SuDS);
CSD9 - Water Resources and wastewater infrastructure;
CSD11 - Protection and Enhancement of Biodiversity;
CSD12 - Biodiversity Net Gain;
CSD13 - Conservation Target Areas;
CSD14 - Natural Capital and Ecosystem Services;
CSD15 - Green and Blue Infrastructure;
CSD16 - Air Quality;
CSD17 - Pollution and Noise;
CSD18 - Light Pollution;
CSD19 - Soils, Contaminated Land and Stability;
CSD21 - Waste Collection and Recycling;
CSD22 - Sustainable Transport and Connectivity Improvements;
CSD23 – Assessing Transport Impact/Decide and Provide;
LEC5 – Community Employment Plans;
LEC6 - Supporting a Thriving and Resilient Farming Sector;
LEC7 - Best and Most Versatile Agricultural Land;
LEC9 - Tourism;
COM10 – Protection and Enhancement of the Landscape;
COM12 – The Oxford Green Belt;
COM13 – Settlement Gaps;
COM14 – Achieving Well Designed Places;
COM15 – Active Travel – Walking and Cycling;
COM16 – Public Rights of Way;
COM18 – Creating Healthy Communities;
COM20 – Providing Supporting Infrastructure and Services;
COM24 – Open Space, Sport and Recreation;
COM25 – Local Green Space;
COM26 – Historic Environment;
COM27 – Conservation Areas;
COM28 – Listed Buildings;
COM29 – Registered Parks and Gardens and Historic Battlefields;
KID1 – Kidlington Area Strategy;
KID2 - London Oxford Airport;
KID3 – Delivery of Transport Schemes within the Kidlington Area;
KID H1 – South-East of Woodstock

5.41 The following evidence documents are also relevant to the proposal:

- The Cherwell Green Belt Study: Additional Green Belt Site Assessments 2023
- Since the submission of Cherwell District Council's Relevant Representation in February, the Council published a Solar PV Strategy on 16th April 2025 which can be found at Appendix 2.

Vale of White Horse District Council

- 5.42 For VWDHC, the Development Plan comprises the Vale of White Horse Local Plan 2031, part 1 (LPP1), adopted December 2016 and the Vale of White Horse Local Plan 2031, part 2 (LPP2), adopted October 2019 and the Cumnor Neighbourhood Plan (CNP), ‘made’ 21 May 2021.
- 5.43 A regulation 10A review of LPP1 was approved in December 2021 and, together with LPP2, continues to provide a framework for development that is in overall conformity with national policy and is soundly based.

- **Vale of White Horse Local Plan 2031 Part 1**

Relevant Policies

CP1 – Presumption in Favour of Sustainable Development
CP7 – Providing Supporting Infrastructure and Services
CP13 – The Oxford Green Belt
CP37 – Design and Local Distinctiveness
CP39 – The Historic Environment
CP40 – Sustainable Design and Construction
CP41 – Renewable Energy
CP42 – Flood Risk
CP43 – Natural Resources
CP44 – Landscape
CP45 – Green Infrastructure
CP46 – Conservation and Improvement of Biodiversity

- **Vale of White Horse Local Plan 2031, Part 2**

Relevant Policies

DP16 – Access
DP17 – Transport Assessments and Travel Plans
DP21 – External Lighting
DP23 – Impact of Development on Amenity
DP30 – Watercourses
DP31 – Protection of Public Rights of Way, National Trails and Open Access Areas
DP36 – Heritage Assets
DP37 – Conservation Areas
DP38 – Listed buildings
DP39 – Archaeology and Scheduled Monuments

- **‘made’ Neighbourhood Plan for Cumnor 2021 (CNP)**

Relevant Policies

DBC1 – General Design Principles in the Parish
DBC2 – Cumnor Conservation Area
DBC4 – Development in the Green Belt
DBC6 – Conserving and Enhancing Local Heritage Assets
DBC7 – Important Views
RNE1 – Green Infrastructure
RNE2 – Flood Risk
EBC2 – Farmoor Reservoir
TI1 – Sustainable Transport
TI2 – Cycle Routes
TI3 – Footpaths and Bridleways

- **Vale of White Horse emerging Joint Local Plan (JLP)**

- 5.44 VWDHC has prepared a Joint Local Plan (JLP) for South Oxfordshire and Vale of White Horse, which, once adopted, will replace the existing local plans.
- 5.45 The JLP was submitted to the Secretary of State on Monday 9 December 2024 for independent examination. In line with paragraph 49 of the NPPF, decision-makers may give weight to relevant policies in emerging plans depending on several factors: the stage of preparation, the extent of unresolved objections, and the degree of consistency with the NPPF.
- 5.46 The starting point for decision taking remains with the policies in the current adopted plan(/s). The JLP is at an advanced stage of preparation and carries some weight, but unresolved objections have been received on all policies, so limited weight should be applied. Full weight to JLP policies should only be applied, where relevant, following the outcome of the independent examination and adoption of the JLP. The stage 1 hearing sessions for the JLP take place 3 – 5 June 2025. Stage 2 hearing sessions are due to take place in Autumn 2025, subject to the outcome of the stage 1 sessions. Following the stage 2 hearing sessions the conclusion of the examination is anticipated in Q1 2026.

Relevant Policies

CE1 – Sustainable design and construction
CE2 – Net zero carbon buildings
CE3 – Reducing embodied carbon
CE5 – Renewable energy
CE6 – Flood Risk
CE7 – Water efficiency
CE8 – Water quality, wastewater infrastructure and drainage
CE9 – Air Quality
CE11 – Light pollution and dark skies
CE12 – Soils and contaminated land
CE13 – Mineral safeguarding areas

SP1 – Spatial strategy
 SP2 – Settlement Hierarchy
 JT4 – Community Employment Plans
 LS1 – Large Scale Major Development
 DE1 – High quality design
 DE2 – Local character and identify
 DE3 – Delivering well-designed new development
 DE5 – Neighbouring amenity
 HP1 – Healthy place shaping
 HP6 – Green infrastructure on new developments
 HP9 – Provision of community food growing opportunities
 HP10 – Watercourses
 NH1 – Biodiversity designations
 NH2 – Nature recovery
 NH3 – Trees and hedgerows in the landscape
 NH5 – District valued landscapes
 NH6 – Landscape
 NH7 – Tranquillity
 NH8 – The historic environment
 NH9 – Listed buildings
 NH10 – Conservation areas
 NH11 – Archaeology and Scheduled monuments
 IN1 – Infrastructure and service provision
 IN2 – Sustainable transport and accessibility
 IN3 – Transport infrastructure and safeguarding
 IN5 – Cycle and car parking standards

The following evidence documents are also relevant to the proposal:

- The Vale of White Horse Landscape Character Assessment (September 2017)
- Joint Landscape Character Assessment (September 2024)
- Landscape Character Assessment – Cumnor Parish Neighbourhood Development Plan (December 2018)
- Cumnor Important Views Assessment (September 2020)
- Oxford Green Belt Study (2024)

West Oxfordshire District Council

- 5.47 For WODC, the Development Plan comprises the West Oxfordshire Local Plan 2031, emerging Salt Cross Area Action Plan and made Neighbourhood Plans for Cassington, Eynsham and Woodstock.

- **West Oxfordshire Local Plan 2031 (WOLP), (adopted in 2018);**

- 5.48 The West Oxfordshire Local Plan 2031 was adopted in 2018. A regulation 10A review of the Local Plan was undertaken in 2023 and found that the majority of Local Plan policies were considered up to date and consistent with national policy and guidance.
- 5.49 Notwithstanding the outcome of the 10A review, the Council is in the process of updating the Local Plan to cover the period 2021 to 2041, primarily to update policies for housing delivery.

Relevant Policies

OS1 – Presumption in Favour of Sustainable Development
OS2 – Locating Development in the Right Places
OS3 – Prudent use of Natural Resources
OS4 – High Quality Design
T2 – Highway Improvement Schemes
EH2 – Landscape Character
EH3 – Biodiversity and Geodiversity
EH4 – Public Realm and Green Infrastructure
EH6 – Decentralised and renewable or low carbon energy development
EH7 – Flood Risk
EH8 – Environmental Protection
EH9 – Historic Environment
EH10 – Conservation Areas
EH11 – Listed Buildings
EH13 – Historic Landscape Character
EW1 – Oxfordshire Cotswolds Garden Village – Strategic Location for Growth

- **Emerging Salt Cross Area Action Plan (at Examination)**

- 5.50 The Salt Cross Area Action Plan (AAP) is currently at Examination with hearings to be resumed on focused matters in June 2025.
- 5.51 The AAP relates to a proposed new settlement within the parish of Eynsham and is intended to guide the future delivery of a new Garden Village.
- 5.52 The AAP policy framework is intended to ensure that Salt Cross comes forward as an exemplary garden village of the highest standards, creating a green, climate friendly, safe and inclusive new community that West Oxfordshire can be justifiably proud of – ‘a place to grow and a space to breathe’.

Relevant Policies

Policy 2 – Net Zero Carbon Development
Policy 7 – Green Infrastructure
Policy 10 – Water Environment
Policy 12 - Conserving and enhancing the historic environment of Salt Cross
Policy 28 – Land uses and layout – The Spatial Framework

- **Cassington Neighbourhood Plan, 2023 (CNDP)**

5.53 The Cassington Neighbourhood Plan was made on 26 June 2023 and applies to the parish of Cassington.

Relevant Policies

Policy CAS1: Cassington Nature Recovery Network
Policy CAS2: Active Travel
Policy CAS4: Cassington Conservation Area

- **Eynsham Neighbourhood Plan (ENP)**

5.54 The Eynsham Neighbourhood Plan was adopted in February 2020

Relevant Policies

ENP4 – Enhancing Biodiversity
ENP5 – Sustainability: Climate Change
ENP14 – Sustainable Growth

- **Woodstock Neighbourhood Plan, 2023 (WNP)**

Relevant Policies

None

5.55 The following evidence documents are also relevant to the proposal:

- Renewable Energy and Low Carbon Energy Assessment and Strategy for West Oxfordshire (LDA Design, October 2016)
- West Oxfordshire Landscape Assessment, Atlantic Consultants (May 1998)
- Climate Change Strategy for West Oxfordshire 2021-2025

Oxfordshire County Council

- **Oxfordshire Minerals and Waste Local Plan**

- 5.56 The Oxfordshire Minerals and Waste Local Plan Part 1 – Core Strategy adopted September 2017 sets out the vision, objectives, spatial planning strategy and policies for meeting development requirements for the supply of minerals and the management of waste in Oxfordshire over the period to 2031.

Relevant Policies

Policy M3 - Principal Locations for Working Aggregate Minerals
Policy M5 - Working of Aggregate Minerals
Policy M8 - Safeguarding Mineral Resources

- **Local Transport and Connectivity Plan**

- 5.57 The Oxfordshire Local Transport and Connectivity Plan 2022 (LTCP) is OCC's statutory Local Transport Plan, required under the Transport Act 2000.

Relevant Policies

Policy 1 – Transport User Hierarchy
Policy 2 – Cycle and walking networks
Policy 3 – Local Cycling and Walking Infrastructure Plans
Policy 4 – Strategic Active Travel Network
Policy 5 – Public Rights of Way
Policy 6 – Greenways
Policy 9 – Health Impact Assessment
Policy 15 – Vision Zero
Policy 31 – Network Management

6. The Principle of the Development

Key Policies

Table 2 - Development Plan policies relevant to the Principle of Development

NPS	Overarching National Policy Statement for Energy (EN-1)
Cherwell	CLP ESD1: Mitigating and Adapting to Climate Change CLP ESD2: Energy Hierarchy and Allowable Solutions CLP ESD5: Renewable Energy
Vale of White Horse	LPP1 CP1: Presumption in Favour of Sustainable Development LPP1 CP40: Sustainable Design and Construction LPP1 CP41: Renewable Energy
West Oxfordshire	WOLP OS1: Presumption in favour of Sustainable Development WOLP OS2: Locating Development in the right places WOLP EH6: Decentralised and renewable or low carbon energy development
Oxfordshire County Council	N/A

Policy Detail

- 6.1 The OHA support, in principle, renewable energy developments within their administrative areas.
- 6.2 Paragraph 4.1.5 of NPS EN-1 states that in considering any proposed development, in particular when weighing its adverse impacts against its benefits, the Secretary of State should take into account:
- its potential benefits including its contribution to meeting the need for energy infrastructure, job creation, reduction of geographical disparities, environmental enhancements, and any long-term or wider benefits
 - its potential adverse impacts, including on the environment, and including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for any adverse impacts, following the mitigation hierarchy.
- 6.3 **In Cherwell**, policies allow for making use of renewable energy, in order to achieve reductions in carbon emissions and support renewable and low carbon energy provision wherever any adverse impacts can be addressed satisfactorily.
- 6.4 Potential adverse impacts to be addressed are:
- Landscape and biodiversity including designations, protected habitats and species, and Conservation Target Areas

- Visual impacts on local landscapes
 - The historic environment including designated and non-designated assets and their settings
 - The Green Belt, particularly visual impacts on openness
 - Aviation activities
 - Highways and access issues, and Residential amenity.
- 6.5 In terms of climate change, Policy ESD1 seeks to mitigate the impact of climate change within the district and promotes the adoption of decentralised, renewable, and low carbon energy where appropriate.
- 6.6 **VWHDC** encourages schemes for renewable and low carbon energy generation through policy CP41 of LPP1. The policy states:
- 6.7 Planning applications for renewable and low carbon energy generation (excluding wind energy) will be supported provided they do not cause a significantly adverse effect to:
- landscape, both designated AONB and locally valued
 - biodiversity, including protected habitats and species and Conservation Target Areas
 - the historic environment, both designated and non-designated assets, including by development within their settings
 - the visual amenity and openness of the Green Belt
 - local residential amenity, and
 - the safe movement of traffic and pedestrians.
- 6.8 Policy CP40 of LPP1 encourages developers to incorporate climate change adaptation and design measures to combat the effects of changing weather patterns in all new development.
- 6.9 **For West Oxfordshire**, Policy EH6 of the WOLP states that in principle, renewable and low-carbon energy developments, especially run-of-river hydropower and the use of biomass will be supported. Battery energy storage developments that aid the deployment of renewable and low carbon development across the wider electricity network will generally also be supported.
- 6.10 Renewable or low-carbon energy development should be located and designed to minimise any adverse impacts, with particular regard to conserving the district's high valued landscape and historic environment.
- 6.11 Policy OS 2 of the WOLP sets out a series of general principles that all development in West Oxfordshire should adhere to. Key to considering the suitability of the Botley West proposals is whether they are of a proportionate and appropriate scale to the receiving environment, having regard to the potential cumulative impact of development in the locality. In addition to this, consideration is given to whether

proposals form a logical complement to the existing scale, and pattern of development and /or the character of the area.

Commentary

- 6.12 The OHA support the Oxfordshire Strategic Vision to achieve carbon neutral status and a carbon neutral future by 2050, and the Government's commitment to deliver a zero-carbon electricity system by 2035.
- 6.13 To achieve this aim, the 2018 Oxfordshire Energy Strategy and the subsequent 2021 Pathways to a Zero Carbon Oxfordshire report, both adopted by the OHA, set out a requirement for a four-fold increase in installed PV capacity in Oxfordshire by 2030 and 13-fold by 2050. Both envisage a significant increase in ground mounted solar farms, along with other methods such as installations on buildings. In this regard a development such as this is acknowledged as an important development for the future energy needs of the county, and the UK.
- 6.14 Building on this, Cherwell District Council published a Solar PV Strategy on 16th April 2025 (see Appendix 2 of this report). Although this is not an adopted planning policy, the purpose of this strategy is to assess the importance of solar energy as a technology in supporting the Council in meeting both its own climate targets and in supporting area-wide decarbonisation and is a material planning consideration. In doing this, the Council seeks to identify a target range of solar for the area that is consistent with its own aims and supports decarbonisation national targets. Whilst this strategy acknowledges that there is a role for roof-mounted solar it accepts that ground mounted options will be required. It should be noted that this strategy has not taken BWSF into account.
- 6.15 It is also acknowledged that the developer has secured a grid connection with National Grid, to provide 840MW of energy to the Grid, and that this will involve the installation of additional primary substation capacity to the west of Oxford. The improvement to the electricity infrastructure would partially address very significant network capacity constraints in Oxfordshire and would help to support increases in local renewable energy generation (recognising that energy will directly feed into the National Grid) and the electrification of homes and transport across the county.
- 6.16 However, based on information produced by Distribution Network Operators such as SSEN and made publicly available via the Embedded Capacity Register, the full 840MW of capacity which the proposed development is predicted to generate is not necessarily required in order to meet the solar generation targets set in 'Pathways to Zero Carbon Oxfordshire' (PaZCO) report.
- 6.17 The PaZCO Report at page 104 outlines that Oxfordshire must have between 1,679 – 2,253 MW (1.68-2.25GW) of solar generation capacity by 2050 in order to ensure that the county continues to produce around 3% of solar generation nationally (as it

currently does). This statistic has been picked up by the applicant in their Supplementary Statement of Need [**PBD-014**] at paragraph 3.2.8.

- 6.18 The Distribution Network Operators within Oxfordshire produce an embedded capacity register (ECR) which details generation and storage resources that are connected or accepted to connect to the network. They separate this out into above 1MW and between 50KW and 1MW. This means that rooftop solar PV isn't picked up unless it's a large installation that is above 50KW. The below table shows the solar PV schemes already connected and with accepted connection offers for both size categories:

Table 3 - Capacity of connected solar P.V. and solar P.V. with accepted connection offer in Oxfordshire

Above 1MW	SSEN (MW)	NGED (MW)	UKPN (MW)	Total
Already Connected	227.883	13.700	9	250.583
Accepted to Connect	1,531.043	0.00	0	1,531.043
Between 50KW and 1MW	SSEN (MW)	NGED (MW)	UKPN (MW)	Total
Already Connected	0.892	2.197	0.479616	3.569
Accepted to Connect	0.24	0.150	0.24096	0.631
Total	1,760.057	16.047	9.721	<u>1.785.826</u>

- 6.19 This table indicates that that there is 1.8GW of solar PV (installations above 50KW) either connected, or with accepted connection offers, to the distribution network already. This does not include the capacity produced by rooftop solar due to the capacity of rooftop solar being below 50KW. It also does not include the capacity of the proposed development as this would connect at a transition level straight to the National Grid.
- 6.20 Whilst it is noted that not all the schemes which are accepted to connect to the network have received planning permission, this table helps to indicate that BWSF is not the only solar generation scheme coming forward within the county. It also indicates that, should these schemes with approved connections come forward, BWSF would only need to deliver an additional 0.5GW (500MW) of capacity to meet the PaZCO target for the county by 2050.
- 6.21 In Cherwell, taking account of the current deployment of solar PV and the capacity for roof top solar PV, the Cherwell Solar PV Strategy concludes that a reasonable target for

the district for ground mounted solar PV is an additional 125MW by 2030. Based on a rough estimate of the number of hectares of solar panels proposed by this development in this district it would provide more than this MW capacity for Cherwell.

- 6.22 Given this, the OHAs consider there is a need to provide a strong and robust case for development of this scale, particularly to demonstrate very special circumstances to justify development within the Green Belt; to justify impacts on the setting of a number of heritage assets including the setting of the Blenheim Palace World Heritage Site; along with mitigating other environmental impacts.

Conclusion on the Principle of the Development

- 6.23 To comply with the policies set out it must be demonstrated that there are no significant adverse environmental impacts that cannot be appropriately managed and/or mitigated through the DCO process. The topic sections of this LIR therefore consider the potential impacts of the development in other respects and the ExA will need to balance these positive impacts against any negative impacts set out in this LIR.

7. Local Impacts

- 7.1 Chapter 7 and sub-chapters consider the local impacts of the proposed development.
- 7.2 Each chapter identifies the relevant policies within development plans and other local policy, the key issues raised by the proposed development, the extent to which the applicant addresses them and thus the degree to which the councils consider the proposal to comply with local policy and where applicable the NPSs.
- 7.3 Where applicable, additional mitigation or amendments to the scheme deemed necessary to reduce its local impacts are suggested.
- Green Belt
 - Historic Environment
 - Landscape and Visual Assessment
 - Ecology, Nature Conservation and Trees
 - Hydrology and Flood Risk
 - Ground Conditions
 - Mineral Safeguarding
 - Traffic and Transport (including Public Rights of Way)
 - Noise and Vibration
 - Climate Change / Resilience
 - Socio-economic
 - Human Health

- Agricultural Land Use
- Waste and Resources
- Air Quality
- Aviation Activities
- Cumulative Effects and Inter-relationships

7.4 In assessing the local impacts of the proposals, the OHA have drawn on the expertise of both relevant qualified officers of their councils e.g. environmental health, ecology, landscape, alongside that of external professional consultants to ensure that a suitably qualified response, based on local knowledge and expertise, is provided on each of the issues. Each local impact is considered in turn below.

7.1 Green Belt

Summary

- The proposed development is established to be inappropriate development in the Oxford Green Belt.
- Inappropriate development in the Oxford Green Belt is, by definition, harmful and carries very substantial weight.
- Very Special Circumstances are not sufficient to outweigh the harm.

Mitigation / Improvements

- Remove areas of the Central Site in the Oxford Green Belt
- Remove the Southern Site entirely.

Key Policies / Compliance

Table 4 - Development Plan policies relevant to Green Belt

NPS	Overarching National Policy Statement for Energy (EN-1)	Not assessed
Cherwell	CLP ESD14: Oxford Green Belt	Conflict identified
Vale of White Horse	LPP1 CP13: The Oxford Green Belt CNP DBC4: Development in the Green Belt	Conflict identified with both policies
West Oxfordshire	WODC: Policy OS2	Conflict identified
Oxfordshire County Council	N/A	

Policy Detail

- 7.1.1 The Overarching National Policy Statement for Energy (EN-1) states at paragraph 5.11.37 that:

“...when considering any planning application affecting Green Belt land, the Secretary of State should ensure that substantial weight is given to any harm to the Green Belt when considering any application for such development, while taking account, in relation to renewable and linear infrastructure, of the extent to which its physical characteristics are such that it has limited or no impact on the fundamental purposes of Green Belt designation. Very special circumstances may include the wider environmental benefits associated with increased production of energy from renewables and other low carbon sources.”

- 7.1.2 The proposed development is identified as CNP infrastructure. Paragraph 4.2.17 of EN-1 confirms that the Secretary of State will take as a starting point that schemes defined as CNP infrastructure meet (amongst other things) the test of very special circumstances within a Green Belt.
- 7.1.3 Cherwell Local Plan Policy ESD14: Oxford Green Belt seeks to ensure that the Oxford Green Belt boundaries within Cherwell District will be maintained, in order to:
- Preserve the special character and landscape setting of Oxford
 - Check the growth of Oxford and prevent ribbon development and urban sprawl
 - Prevent the coalescence of settlements
 - Assist in safeguarding the countryside from encroachment
 - Assist in urban regeneration, by encouraging the recycling of derelict and other urban land.
- 7.1.4 Development proposals within the Green Belt will be assessed in accordance with government guidance contained in the NPPF and NPPG. Development within the Green Belt will only be permitted if it maintains the Green Belt's openness and does not conflict with the purposes of the Green Belt or harm its visual amenities.
- 7.1.5 Policy CP13 of LPP1 addresses development in the Oxford Green Belt and seeks to ensure the Green Belt is protected to maintain its openness and permanence. This policy specifies that within the Green Belt development will be restricted to those limited types of development which are deemed appropriate by the NPPF, unless very special circumstances can be demonstrated.
- 7.1.6 Policy DBC4 of CNP is a local iteration of national and local Green Belt Policy and recognises the importance of the Green Belt to the neighbourhood area.
- 7.1.7 WOLP OS2 states that all development in the Green Belt should comply with national policies for the Green Belt.

Commentary

- 7.1.8 The proposed development area is approximately 1,400 Ha with approximately 960 Ha falling within the Oxford Green Belt, which equates to approximately 60% of the total area.
- 7.1.9 The NPPF states that development in the Green Belt is inappropriate unless it falls within specified categories, which would not apply to the proposed development, and the main purpose of 'openness' would be preserved. Due to the size and nature of the development, the proposed solar farm would not comply with any such NPPF provisions, and the proposal would therefore be deemed to be inappropriate development in the Oxford Green Belt in respect of both the Central and Southern site areas.
- 7.1.10 NPPF paragraph 153 explains that inappropriate development in the Green Belt is, by definition, harmful and carries substantial weight. Such development should not be approved except in very special circumstances (VSC). It continues that very special circumstances will only exist if the harm to the Green Belt by its inappropriateness, and any other harm, would be clearly outweighed by other considerations.
- 7.1.11 Despite harm to the Green Belt attracting substantial negative weight, it has been established that renewable energy projects and associated infrastructure are not prohibited outright in the Green Belt. It is therefore a matter of balancing the benefits against any harm that would result from the development.
- 7.1.12 The NPPF adds (paragraph 160) 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.
- 7.1.13 The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open. As advised in the NPPF (paragraph 142) the essential characteristics of Green Belts are their openness and their permanence. The openness of the Green Belt has both a spatial and visual aspect.
- 7.1.14 In addition, the Green Belt in West Oxfordshire provides a degree of policy protection for the outstanding universal value of the Blenheim Palace World Heritage Site. Previous consideration as to whether to impose a buffer for the Blenheim Palace WHS have been discounted due to the additional policy protection provided by the Oxford Green Belt.
- 7.1.15 From a spatial perspective, the proposal would introduce a substantial amount of development into an open area. This includes the panels and transformer units, along with the associated development of access tracks and security fencing. The visual

impacts of the development are assessed in detail under the landscape and visual impact section of the LIR, but the development will result in the loss of visual openness of the Green Belt and thereby diminish the spatial openness of the Oxford Green Belt.

- 7.1.16 In the Planning Supporting Statement [APP-225] the Applicant recognises that “some parts” of the proposal constitutes inappropriate development in the Green Belt (paragraph 2.4.5). Very Special Circumstances (VSC) are therefore required to be demonstrated, and the OHA accept the proposed development meets the criteria of CNP infrastructure where the Secretary of State will take as the starting point for decision making that such infrastructure would constitute Very Special Circumstances (VSC) to justify development.

Adequacy of the application/DCO

- 7.1.17 The applicant’s VSC are listed in paragraph 8.4.57 of appendix 8 of the Planning Supporting Statement [APP-225] and the OHA respond to each as follows.

VSC 1 - Meeting the urgent need for secure, clean, renewable energy;

- 7.1.18 Limited weight – the same benefits could be achieved elsewhere on land outside of the Oxford Green Belt.

- 7.1.19 There is little detail currently provided of what alternative sites outside of the Green Belt have been considered. The applicants have provided some information about their reasons for choosing the current site in Chapter 5 – Alternatives Considered of the ES [APP-042] but this does not include a detailed account of why other sites were discounted. Bearing in mind the significant impacts upon the Green Belt, this needs to be thoroughly tested by the ExA.

VSC 2 - Overall compliance with relevant NPS and relevant parts of approved and emerging plans;

- 7.1.20 Neutral weight – all sustainable development would need to comply with adopted development plans and national policy.

VSC 3 – Renewable energy to power the equivalent of 330,000 homes;

- 7.1.21 No weight – the same benefits could be achieved elsewhere on land outside the Oxford Green Belt.

- 7.1.22 Furthermore, as the main benefit in this case will be the renewable energy generated by the scheme, it is crucial for the Secretary of State to ascertain that 840MW per annum (enough to power 330,000 homes) can be achieved, as the amount of renewable energy that can be produced should be reflected in the weight applied to it as a benefit.

VSC 4 - Biodiversity Net Gain;

7.1.23 No weight – the same benefits could be achieved elsewhere on land outside of the Oxford Green Belt.

VSC 5 – Economic, Educational and Sustainability Benefits;

7.1.24 No weight – the same benefits could be achieved elsewhere on land outside of the Oxford Green Belt.

VSC 6 - Landscape and Access legacy;

7.1.25 No weight – Landscaping is only being provided to mitigate harm of the proposed development, and this is not a landscape in need of repair.

VSC 7 - Community Benefit Fund;

7.1.26 No weight – this is not a material planning consideration.

VSC 8 - Discounted electricity prices;

7.1.27 No weight – this is not a material planning consideration.

Conclusion on Green Belt

Impact – Negative

7.1.28 The proposal would introduce a substantial amount of new development into open countryside and have a significant impact on openness for more than a generation, conflicting with the purposes of Green Belt.

7.1.29 In support of this assertion an Inspector dismissed an appeal for a solar farm in the Green Belt stating *“I acknowledge the appellant’s argument that the proposal is temporary in nature (40 years) and that the development would be removed and the land restored to its former condition – in essence openness would be restored at that point. Leaving aside the discussion as to what may happen at the end of the 40-year period – which can only be speculation - I do not find this argument to be persuasive in terms of reducing the effect on Green Belt openness. Although the proposal is for a limited period, the length of that period is very substantial. But even more importantly, the fundamental aim of national Green Belt policy is to prevent urban sprawl by keeping land permanently open. With that well established policy background it cannot be right that the fact that approval is sought for a 40-year period is accorded more than very limited weight in favour of the scheme in relation to the loss of openness. To do so would go against the concept of permanence.”* See Paragraph 19 of planning appeal reference: APP/A1910/W/23/3317818.

7.2 Historic Environment

Summary:

- The setting of designated and non-designated heritage assets, as well as the Blenheim World Heritage Site is related to their landscape context as well as other factors like topography and land use. The OHA consider the proposed development will result in harm to these settings.
- The OHA consider that the applicant's assessment of the impact on heritage assets is too reliant on the visual link to heritage assets and does not sufficiently consider other links between the site and the heritage assets such as agricultural land use.
- The OHA are concerned that the proposed mitigation methods such as hedges around Public Rights of Way will fundamentally change the way heritage assets are appreciated.
- The applicant has not yet submitted an Archaeological Evaluation Report. As such an assessment of the significance of any archaeological remains beneath the proposed development cannot be undertaken.

Mitigation / Improvements

- The OHA consider the applicant should revisit their assessment of impacts on Heritage Assets within the ES, taking into account all factors which contribute to the setting of a Heritage Asset.
- The OHA would like panels to be removed from the scheme where they cause significant harm to heritage assets or their setting.
- The OHA would like the applicant to revisit their proposed mitigation to ensure it does not impact the way in which heritage assets are appreciated.
- OCC will comment on the impact on archaeological assets once an Archaeological Evaluation Report has been submitted by the applicant. It may be the case that further panels need to be removed from the scheme where these would cause harm to significant archaeological remains.

Key Policies / Compliance

Table 5 - Development Plan policies relevant to Historic Environment

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP ESD15: The Character of the Built and Historic Environment Saved Policy of CLP 1996 C25: Development affecting the site or setting of a schedule ancient monument Saved Policy of CLP 1996 C33: Protection of important gaps of undeveloped land.	Conflict identified

Vale of White Horse	LPP1 CP39: The Historic Environment LPP2 DP36: Heritage Assets LPP2 DP38: Listed buildings LPP2 DP39: Archaeology and Scheduled Monuments CNP DBC6: Conserving and Enhancing Local Heritage Assets	Conflict identified
West Oxfordshire	EH9 – Historic Environment EH10 – Conservation Areas EH11 – Listed Buildings EH13 – Historic Landscape Character EW9 – Blenheim Palace World Heritage Site	Conflict identified
Oxfordshire County Council	N/A	

Policy Detail

Built Heritage

- 7.2.1 Paragraphs 2.10.117 and 2.10.118 of NPS EN-3 state that the impact of solar farms on the settings of heritage assets must be carefully considered and minimised.
- 7.2.2 Paragraph 2.10.160 of NPS EN-3 states that solar farms are generally consented on the basis that they will be time-limited in operation. The Secretary of State should therefore consider the length of time for which consent is sought when considering the impacts of any indirect effect on the historic environment, such as effects on the setting of designated heritage assets.
- 7.2.3 Policy ESD15 of CLP: The Character of the Built and Historic Environment. Amongst other things, developments should contribute positively to an area's character and identity by creating or reinforcing local distinctiveness and respecting local topography and landscape features, including skylines, valley floors, significant trees, historic boundaries, landmarks, features or views, in particular within designated landscapes, within the Cherwell Valley and within conservation areas and their setting. Proposals should sustain and enhance designated and non-designated heritage assets. Paragraph B.267 in the introductory text to this policy highlights the importance of taking "into account heritage assets located outside of the District such as Blenheim Place, a World Heritage Site".
- 7.2.4 Saved Policy of CLP 1996 C25: Development affecting the site or setting of a scheduled ancient monument seeks to ensure that proposals do not damage the character or setting of SAMs.
- 7.2.5 Saved Policy of CLP 1996 C33: Protection of important gaps of undeveloped land seeks to retain undeveloped gaps important in preserving character of settlements or

maintaining settings of listed buildings or preserving views/features of recognised amenity/historical value.

- 7.2.6 Policy CP39 of LPP1 seeks to ensure that new development conserves, and where possible enhances, designated heritage assets and non-designated heritage assets and their setting in accordance with national guidance and legislation.
- 7.2.7 Policies DP36, DP37 and DP38 of LPP2 sets out the approach to conserve and enhance heritage assets in the Vale and seeks development within conservation areas and within the curtilage and setting of a Listed Building to conserve or enhance its special architectural or historic interest and significance.
- 7.2.8 In addition, Policy DBC6 of CNP identifies Local Heritage Assets. The effect which development proposals would have on the significance of the identified Local Heritage Assets should be considered in determining the planning applications concerned. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be taken having regard to the scale of any harm or loss and the significance of the heritage asset.
- 7.2.9 All development proposals should conserve and/ or enhance the special character, appearance and distinctiveness of West Oxfordshire's historic environment, including the significance of the District's heritage assets, in a manner appropriate to their historic character and significance and in a viable use that is consistent with their conservation, in accordance with national legislation, policy and guidance for the historic environment.
- 7.2.10 In determining applications, great weight and importance will be given to conserving and/or enhancing the significance of designated heritage assets, including:
- the outstanding universal values for which Blenheim Palace and Park is inscribed as a World Heritage Site (WHS), as guided by its WHS Management Plan;
 - the special architectural and historic interest of Listed Buildings, with regard to their character, fabric and their settings;
 - the special architectural and historic interest, character and/or appearance of the District's Conservation Areas and their settings, including the contribution their surroundings make to their physical, visual and historic significance;
 - the special archaeological and historic interest of nationally important monuments (whether Scheduled or not), both with regard to their fabric and their settings;
 - the special cultural, architectural and historic interest of Registered Parks and Gardens, including the contribution their surroundings make to their physical, visual and historical significance.
- 7.2.11 All development which has the potential to affect heritage assets should

- avoid adverse impacts on the significance of the asset(s) (including those arising from changes to their settings) and, wherever possible, enhance or better reveal the significance of the asset(s);
- minimise any unavoidable and justified (by the public benefits that would accrue from the proposed development – see below) adverse impacts and mitigate those impacts in a manner proportionate to the significance of the asset(s) and the nature and level of the impact, investigate and record changes to or loss of physical fabric, features, objects or other remains and make the results publicly available.

7.2.12 Policy EW9 of the WOLP states that the exceptional cultural significance (Outstanding Universal Value) of the Blenheim World Heritage Site will be protected, promoted and conserved for current and future generations.

7.2.13 Accordingly, proposals which conserve and enhance the attributes and components that comprise the Outstanding Universal Value of the Site, as identified in the Statement of Outstanding Universal Value Statement and in line with the Blenheim Palace World Heritage Site Management Plan, will be supported. Great weight will be given to the conservation of the Outstanding Universal Value of the World Heritage Site and any harm or loss to its significance will require clear and convincing justification.

7.2.14 Development proposals that would lead to substantial harm to or loss of those attributes and components of the Site will be unacceptable, unless it can be demonstrated that any such harm or loss is necessary to achieve substantial public benefit that outweigh that harm or loss. Such harm will be wholly exceptional. Where development proposals would lead to less than substantial harm to those attributes and components, that harm will be weighed against the public benefits of the proposals.

7.2.15 Consideration of impact will be made of proposals within, or potentially affecting, the World Heritage Site and its setting, including areas identified as being of special importance for the preservation of long-distance views to and/or from the Site (as shown on the Blenheim Palace Management Plan). Particular regard will be given to the design quality of the proposal (including scale, form and massing), its relationship to context (including topography, built form, views, vistas and effect on the skyline) and the implications of the cumulative effect of changes.

Archaeology

7.2.16 CLP 1996 Saved Policy C25 - Development affecting the site or setting of a scheduled ancient monument. In considering proposals for development which would affect the site or setting of a scheduled ancient monument, other nationally important archaeological sites and monuments of special local importance, the council will have

regard to the desirability of maintaining its overall historic character, including its protection, enhancement and preservation where appropriate.

- 7.2.17 DP39 of LPP2 states that development will be permitted where it can be shown that it would not be detrimental to the site or setting of Scheduled Monuments or nationally important designated or non-designated archaeological remains.

Commentary

Built Heritage

- 7.2.18 As the significance of a heritage asset derives not only from its physical presence but also from its setting, careful consideration should be given to the impact of large-scale solar farms which depending on their scale, design and prominence, may cause substantial harm to the significance of heritage assets (NPS-EN3).
- 7.2.19 The applicant has identified the presence of a number of significant heritage assets within, adjacent to, and in close proximity to, the project boundary and has sought to avoid harm to them by restricting development within designated sites and areas of archaeological interest.
- 7.2.20 The OHA have emphasised through their relevant representations that there is likely to be substantial harm to heritage assets as a result of development within their setting.
- 7.2.21 The landscape setting of heritage assets in proximity to the project area contributes to the significance of these assets, particularly the Blenheim Palace World Heritage Site – The Outstanding Universal Value of which is intrinsically linked to the landscape surrounding the palace walls.
- 7.2.22 The wider setting of heritage assets such as World Heritage Sites includes the topography, natural and built environment, land use and visual relationships, social and cultural practices and more intangible dimensions such as perceptions and associations. Management of the wider setting is important in supporting the outstanding universal value of the World Heritage Site.
- 7.2.23 The rural landscape of the Oxfordshire countryside within and around the project area is fundamental to the significance of heritage assets in the area including;
- Blenheim Palace World Heritage Site
 - Historic Parks and Gardens
 - Scheduled Ancient Monuments
 - Grades 1, 2* and 2 Listed Buildings
 - Conservation Areas
- 7.2.24 With regard to the WHS, it is considered that development within the countryside setting would detract from the significance of the setting which is characterised as

traditional English countryside dotted with picturesque villages, mainly built using a uniform palate of materials. These significances are important individually and together in achieving a strong sense of community through the pride in the WHS and connecting it with the local area.

World Heritage Site: Blenheim Palace

- 7.2.25 Blenheim Palace is a designated World Heritage Site, Grade 1 Listed Building and Grade 1 Registered Park and Garden. It incorporates 5 scheduled ancient monuments within its parkland.
- 7.2.26 In accordance with Paragraph B.267 of the CLP (i.e. the importance of taking “into account heritage assets located outside of Cherwell District such as Blenheim Place, a World Heritage Site”) the impacts of the development upon Blenheim Palace should be thoroughly examined.
- 7.2.27 Policies EH9 and EW9 of the WOLP specifically refer to Blenheim WHS as a designated heritage asset with great weight to be applied to conserving and/or enhancing the significance of the asset including the outstanding universal values for which Blenheim Palace and Park is inscribed as a World Heritage Site (WHS), as guided by its WHS Management Plan.
- 7.2.28 Policy EH9 goes on to reiterate that all development which has the potential to affect heritage assets should avoid adverse impacts on the significance of the asset (including those arising from changes to their settings) and, wherever possible, enhance or better reveal the significance of the asset.
- 7.2.29 Consideration of impact will be made of proposals within, or potentially affecting, the World Heritage Site and its setting, including areas identified as being of special importance for the preservation of long-distance views to and/or from the Site (as shown on the Blenheim Palace Management Plan). Particular regard will be given to the design quality of the proposal (including scale, form and massing), its relationship to context (including topography, built form, views, vistas and effect on the skyline) and the implications of the cumulative effect of changes.
- 7.2.30 The OHA are concerned about the impact of the BWSF on the setting of the Blenheim Palace World Heritage Site and the impact that this could have on the Outstanding Universal Value of this asset of the highest significance. This is primarily a result of the proximity, scale and massing of the solar farm proposals, extending from close proximity to the listed wall that encircles the World Heritage Site and out into the open countryside to abut historic rural settlements throughout the rural landscape which define the setting of the WHS.
- 7.2.31 In addition to the scale, proximity and massing of the solar farm proposals themselves, the OHA are concerned about the cumulative impact of this with other proposed

development within the setting of the WHS, particularly residential development at Woodstock. ICOMOS in their Relevant Representation [RR-0413] have expressed concern about the cumulative impact of development within the setting of the World Heritage Site.

- 7.2.32 It is useful to reproduce content from the Blenheim Palace WHS Management Plan setting study at this point to provide some additional context with regard maintenance of the setting of the Blenheim Palace WHS;

“As a traditional landed estate, much of the land is retained in open agricultural and enclosed forestry use - another attribute which contributes to OUV. The grazed pastoral landscapes around the river valleys, along with the fields and woodlands are particularly significant as these reflect the land-use and character of the landscape that would have been appreciated during the 18th century. Contrasts between these features is muted and gentle, representing the historic character of the farmed landscape of middle England. The appropriate management and enhancement of these landscape features is therefore an important objective, and the areas which make a particular contribution to the setting of the WHS are highlighted on the accompanying map (Figure 5 from the WHS Management Plan). In terms of management, therefore, it would be helpful to encourage on-going management of the open elements of the landscape and river meadows through effective agricultural practices and appropriate grazing. The opportunities for other land management practices such as community woodlands, agri-environment schemes and community supported agriculture can also positively contribute to the appropriate care of the setting”.

- 7.2.33 When considering residential development projects (3 approved developments at Woodstock) in the context of the large scale BWSF, it can be concluded that the current protection and management system for the setting of the property may not be adequate to withstand development pressures in its setting that may affect its Outstanding Universal Value. It can be said however that offsetting harm to the OUV against potential benefits through the raising of funding for maintenance is not appropriate to World Heritage properties.

- 7.2.34 The OHA recognise that views into and out of the Blenheim Palace WHS are important and that the applicant has introduced some measures to their scheme, such as removal of panels from certain locations, to minimise the intervisibility between the WHS and the solar farm. Limiting the impact on the setting of the WHS to views and intervisibility however, underrepresents the contribution of the setting to the OUV of the WHS. It is the impact on the landscape character of the surrounding the park as a result of the scale, massing and form of the Solar Farm that the OHA remain concerned about.

- 7.2.35 While it is welcomed that the Applicant has provided baseline information on, and an assessment of effects on, historic landscapes ([APP-131] paragraphs 1.5.244-259),

this is largely divorced from any consideration of the rest of the historic environment. This is particularly apparent with the open agricultural landscapes that form the setting of the Blenheim Palace WHS and Registered Park and Garden. This agricultural landscape provides important context for the designed landscape, was part of the source of the wealth of successive Dukes that contributed to the development of the landscape park and is indivisible from its significance – including through its contribution to the settings of these assets. The Applicant is therefore advised to revisit the consideration of historic landscape and make greater use of the evidence available to better understand the contribution of historic landscapes to the significance (and Outstanding Universal Value) of Blenheim – and better articulate how the proposed development will change this. On the face of it, ‘minor adverse’ impacts to the historic landscape would not appear to do justice to the extent or totality of change within areas of historic character. It is therefore recommended that the approach is disaggregated and deals with significance and change at a character area level. This would provide decision-makers with greater specificity and certainty with regard to impacts.

Conservation Areas

- 7.2.36 In Cherwell there are four conservation areas that could potentially be affected: Begbroke, Hampton Gay, Shipton on Cherwell, and Kidlington.
- 7.2.37 In the Vale, there is one conservation area that could be affected, the Cumnor Village Conservation area.
- 7.2.38 In West Oxfordshire, there are five Conservation Areas within and adjacent to the project boundary at Wootton, Bladon, Church Hanborough, Cassington and Eynsham
- 7.2.39 For Cherwell, Policy ESD15 of CLP seeks to ensure that new developments will contribute positively to an area’s character and identity by creating or reinforcing local distinctiveness and respecting local topography and landscape features, including skylines, valley floors, significant trees, historic boundaries, landmarks, features or views, in particular within designated landscapes and within conservation areas and their settings.
- 7.2.40 For Vale, Policy DP37 of LPP2 states development within or affecting the setting of a conservation area must demonstrate that it will conserve or enhance its special interest, character, setting and appearance. Considerable importance and weight are therefore given to the desirability of protecting or enhancing the character or appearance of the conservation area.
- 7.2.41 For the WOLP, proposals for development in a Conservation Area or affecting the setting of a Conservation Area will be permitted where it can be shown to conserve or enhance the special interest, character, appearance and setting, specifically provided that, the location, form, scale, massing, density, height, layout, landscaping, use,

alignment and external appearance of the development conserves or enhances the special historic or architectural interest, character and appearance of the Conservation Area, and the development conserves or enhances the setting of the Conservation Area and is not detrimental to views within, into or out of the Area.

7.2.42 The OHA have concerns about the impact on the setting of Conservation Areas as a result of the scale, massing and layout of the proposals in proximity to the Conservation Areas and particularly affecting views into and out of the Conservation Areas.

7.2.43 For Cherwell, as previously advised, the development area would come into proximity with the boundary of the Begbroke Conservation Area and surround it on two sides. The setting of this conservation area will be altered and there is potential for some harm to the significance of the conservation area through development within its setting as is identified in the ES.

7.2.44 For West Oxfordshire, the setting of Conservation Areas would be impacted at Wooton, Bladon and Church Hanborough where the project boundary extends to the edge or into each Conservation Area. The Cassington Conservation Area lies to the south of the central area project boundary.

7.2.45 Although the applicant has sought to limit development within the Conservation Areas, particularly at Church Hanborough where land has been made available for community food growing, the topography of the surrounding countryside and the scale and siting of the development mean that views into and out of the Conservation areas will be affected by the proposed development.

7.2.46 The designation of the Bladon Conservation is supported by a Conservation Area Character Appraisal¹

7.2.47 which identifies a number of significant views out of the Conservation Area to the south and east towards the proposed solar farm.

7.2.48 The designation of the Cassington Conservation Area is also supported by a character appraisal² which identifies a number of significant views from the Conservation Area to the north towards the project area.

7.2.49 The removal of panel arrays from fields to the south of the A4095 and to the north and south of the public footpath that extends to the west of the Bladon could mitigate harmful impacts on the setting of the Conservation Area and significant views from within it.

¹ <https://www.westoxon.gov.uk/media/5qofp2vq/bladon-conservation-area-character-appraisal.pdf>

² <https://www.westoxon.gov.uk/media/nfyj1j5j/cassington-conservation-area-character-appraisal.pdf>

- 7.2.50 For the Vale, there is particular concern on the lack of assessment of the relationship of Cumnor Village Conservation Area to its surroundings and whether the existing context contributes to the understanding of its significance or not. Whilst the Cumnor Neighbourhood Plan assessment has been referred to, no reference is made to the adopted Cumnor Conservation Area Appraisal (Jan 2011) or the way it is described in its landscape context within this document.
- 7.2.51 The way the approach to Cumnor village from the north is currently experienced will fundamentally alter both from the B4017 Cumnor Road and the Public Rights of Way that cross the landscape to the north of the village. Whilst it is accepted that the conservation area will not be directly impacted by the proposal, the open agricultural and rural approach to the village will be significantly changed as a result and this has not been assessed within the ES. Scoping reasons provided as purely on whether the site can be seen from the conservation area and not in how it is experienced in its current context, is not considered a robust or consistent way of assessing the contribution made by the setting of assets in accordance with good practice guidance. The transformation of the character of this area from rolling countryside to a solar farm landscape will impact the way Cumnor Conservation Area is understood and experienced from its wider setting, eroding the sense of the settlement as a small hill-top village set in open countryside on the edge of the more suburban area of Oxford City.
- 7.2.52 VWHDC considers the area forms an important rural transition between countryside and city and the proposals will erode this along with the contribution it makes to the significance of the designated historic village conservation area. Whilst it could be a low level of impact, not more than Negligible Adverse, it is an adverse impact that should have been more thoroughly examined as the way assets are experienced from the wider context, where there is a direct visual connection or not, does not appear to have been considered.
- 7.2.53 Furthermore, hiding the scheme behind hedgerows and enclosing PROW with high hedges will also significantly change the way in which the character of the agricultural landscape can be experienced in the context of the conservation area and listed buildings around the application site and is not necessarily encouraged as mitigation.
- 7.2.54 It is accepted that the temporary construction compound proposed to the east of the B4017 on the rising land towards Cumnor village will be temporary through the construction phase only and replaced by PV arrays prior to completion of the construction phase. The visual and character change here is mitigated only by its temporary nature, but this should be secured by appropriate conditions requiring removal during the operational phase.

Listed Buildings

- 7.2.55 Host Authorities are content that Chapter 7 of the ES [APP-044] identifies all known listed buildings within 2km of the application site boundary or those within the Zone of Theoretical Visibility (“ZTV”) where this extends beyond the 2km mark.

The Northern site

- 7.2.56 The northern part of the proposal area is located between Woodstock and the A4260 and sits within the wider landscape setting of Hampton Gay, Shipton on Cherwell, and Thrupp Conservation Areas. There are three Grade 2 listed structures and buildings on the west side on the edge of Shipton on Cherwell closest to the development site, these include: The Manor and attached outbuildings, Kitchen Garden Walls, and the Church of the Holy Cross. These haven’t been specifically considered in the ES, possibly because they are outside of the 2km zone, however it is considered that the historic landscape and therefore the wider setting of these heritage assets could potentially be affected.
- 7.2.57 The Northern Section of the development site is also located within the wider setting of the Wootton Conservation Area with a number of Grade 2 Listed Buildings in proximity to the project boundary including a collection of listed buildings at Lower Dornford Farm, Milford Bridge Cottage and the Grade 2* Listed Hordley House.
- 7.2.58 The OHA are concerned about the impact of proposed development to the south and east of Hordley House on the setting of the Grade 2* Listed Building, particularly as the setting of such assets can be appreciated from the Public Rights of Way network to the south and east. It is considered that the removal of PV arrays from this location could reduce the impact on these properties.

The Central site.

- 7.2.59 For Cherwell, because of the small size of Begbroke Conservation Area the listed buildings of The Old Rectory (Grade 2), St Michaels Church (Grade 2*) and St Phillips Priory (Grade 2) (located within the conservation area) and Hall Farmhouse (Grade 2) (located outside of the conservation area) will potentially be affected by the development within their setting. The ES only identifies the conservation area and St Michaels Church as being impacted.
- 7.2.60 Further south, although the village of Yarnton is not a conservation area, the complex of buildings which includes Yarnton Manor (Grade 2*) and the Church of St Bartholemew (Grade 1) which sit outside of the village of Yarnton, are considered susceptible to harm through development within their wider setting. This is largely due to their location within the historic landscape.
- 7.2.61 The scale of the proposed development in the central area mean that proposed development is to be situated within the setting of heritage assets of the highest significance. The OHA have considered the impact the WHS above, but in addition to this there are concentrations of Listed Buildings at Bladon, Church Hanborough and

Cassington of significant historic and cultural value which the OHA remain concerned about the impacts on them. These include the Grade 2 Listed Church of St Martin at Bladon which is the location of Sir Winston Churchill's grave, a place of pilgrimage and quiet reflection for many as well as Grade 1 Listed Churches of St Peter and St Paul at Church Hanborough and St Peter's at Cassington.

- 7.2.62 Although the proposed development will not impact the fabric of such heritage assets the OHAs are concerned about the impact of development within the setting of the assets. As the significance of a heritage asset derives not only from its physical presence but also from its setting, careful consideration should be given to the impact of large-scale solar farms which depending on their scale, design and prominence, may cause substantial harm to the significance of heritage assets. The OHAs consider that the scale and prominence of the Botley West proposals will result in local impacts to the significance of these heritage assets and that the removal of solar arrays from a number of locations that form the setting of these assets is necessary to mitigate the impacts.

The Southern Site

- 7.2.63 The construction of a large solar farm on the Southern Site would have a large impact on the site's appearance and landscape character which contributes to the understanding of surrounding heritage assets, in particular historic listed farm buildings and the wider setting of the Cumnor Conservation Area.
- 7.2.64 Whilst there will be no direct physical impacts on any heritage assets from this scheme, there are assets where the contribution made to their significance by elements of their setting will be impacted and the proposal will result in harm to some heritage assets.
- 7.2.65 Both the grade II listed Toll Gate House at Swinford Bridge and the Grade II* and Scheduled Ancient Monument of Swinford Bridge have been assessed as suffering No Change because of the proposals. These assets lie near to possible cable routes between the Southern and Central sites. VWHDC agrees that the significance of these assets is unlikely to experience any change because of the proposals.
- 7.2.66 Upper Whitley Farm, a grade II listed farmhouse, is assessed as suffering No Change. The assessment has focused on the views out from the main farmhouse but has not considered how the asset is experienced from its wider setting or how it is viewed in its wider setting. Having reviewed the proposed layout plans, the way in which the farmhouse will be understood in its agricultural context will only be impacted to a minor degree with most of the area closest to the house either preserved as woodland or grassland not under solar panels. There may be glimpsed views of the arrays to the east when approaching the farmhouse, but these are filtered by existing woodland planting and do not impact the experience of the agricultural approach to the listed building. It is therefore agreed that there will be no change here.

- 7.2.67 Milestone on the Oxford Road (NHLE number 1181978) lies within the cable route area. The impact assessment is that there will be a minor adverse impact during construction, operation and decommissioning. It is not proposed to move the asset which is significant both for its age and its specific location relative to the areas it marks. As it is not proposed to change the asset's location, VWHDC is satisfied that the impact to its significance will be minor changes to the road conditions largely during construction and decommissioning.
- 7.2.68 In order to be satisfied that there is no risk to the asset during these periods it is suggested that should consent permission be granted for the scheme, a requirement is attached to any order which agrees, prior to commencement, protection measures to be installed during commissioning and again during decommissioning which protect the asset from any damage. These agreed measures must be retained in place until such time that all construction and decommissioning works have been completed. The reason is to preserve the asset in line with both Local Policy and Sections 16 and 66 of The Planning (Listed Buildings and Conservation Areas) Act 1990.
- 7.2.69 Red House Farm, a grade II listed farmhouse which lies to the northeast of the application site is noted as likely to suffer a Negligible Adverse impact because of the development within its setting. This is due to a loss of the character of the agricultural land to which it was historically related, and which still forms part of its wider context. It is acknowledged that there will be no direct impact to the listed building. However, the manner of the agricultural countryside in which the building sits will be eroded by the presence of the proposed PV panels. The way the historic function of the farmhouse and its associated agricultural buildings is understood will be somewhat eroded by the loss of wider agricultural land. It is also noted that grazing is proposed under the panels, but this will not be readily visually understood beyond the 2.2m – 2.3m height of the panels, the fencing, proposed lighting and security systems and other infrastructure which will result in a semi-industrial appearance to the land instead of one of rolling Oxfordshire Countryside. An area of landscape enhancement is proposed to the north of the area in proximity to Red House Farm however this will only provide visual mitigation to some areas in the setting of the listed building. It will remain largely exposed and a change to the character of the land with some proposed hedgerow planting along the boundary edge used to soften it. Hiding the scheme behind hedgerows and enclosing PRow with high hedges will also significantly change the way in which the character of the agricultural landscape can be experienced which is not necessarily encouraged as mitigation.
- 7.2.70 Although there is some intervening land remaining as an agricultural buffer to the farmhouse and farm group, the impact goes beyond negligible and will have an adverse impact on the manner in which the listed building is understood and gains significance from its wider context. The impact is Minor Adverse and should be outweighed by public benefits as per National and Local Policy Tests.

Non-designated heritage assets (NDHA)

- 7.2.71 Cherwell has a draft list of NDHAs but even if buildings are not formally included on a local list they can still be identified as non-designated heritage assets and therefore should be considered when assessing the impact on built heritage. Few NDHS have been identified in the ES.
- 7.2.72 For VWHDC, Tumbledown Cottage is a non-designated heritage asset identified within the Cumnor Neighbourhood Plan. The ES concludes that the proposals will have a Minor Adverse impact on the significance of this non-designated asset as a result of changes to its wider setting, in particular from the proximity of the panel and large substation which will disconnect it from the historic agricultural land to which its occupants likely once worked following enclosure of the area. It is agreed that the proposals will have a minor adverse effect on the local heritage significance of this asset.

Areas of unknown impact

- 7.2.73 The lack of information about grid connections and the NGET substation which is anticipated to be very large and sited somewhere in or adjacent to the southern parcel substation is a concern. Although it will occupy a smaller area than the fields of panels, the scale of the infrastructure needed is unlike anything else in this area and will likely rely heavily on topography to reduce its impact from some areas.
- 7.2.74 There is a real concern that the impacts will be entirely unmitigated due to necessity if the proposal is granted approval. It should therefore be proposed alongside this scheme in order that it can all be appropriately assessed with holistic mitigation used where possible.
- 7.2.75 The Photomontages of Viewpoint 50 show a visualisation of the substations proposed in this area. The indicative scale of the Main and Secondary Substations (Work No.3a and 3b on the Works Plans) are very large structures in an area not characterised by built form of any real scale beyond historic farm buildings. It is clear even from these visualisations that this will result in a significant change to the character of the landscape and its contribution to nearby assets. The impact of this has not been fully assessed as specific plans do not appear to form part of this application. This forms a fundamental part of the overall proposal being a necessary part of the scheme for it to become operational. Likewise, the NGET connection is an absolute necessity for the scheme but there are no details provided other than the anticipated size of the building footprint of 87m x 30m, a 12m height and additional 12.5m gantry heights on an area of land up to 3.8ha in area. This will have a considerable impact on the character of the area that forms the setting of the assets noted above but heritage impact assessment from detailed proposals has not been done.

Archaeology

- 7.2.76 This proposed solar farm covers a large area and as such the archaeological interest and potential within the scheme is both complex and varied. The applicant has engaged with County Archaeological Services from a very early stage in the application process and as a result of these discussions the applicant has confirmed that they will not be using cable trenches behind the line of panels to connect them, often the largest impact of such solar farm proposals, which is welcome and has reduced the potential archaeological impact of the scheme.
- 7.2.77 However, there will be below ground impacts associated with this proposal. These will be caused by the main cable trenches, the construction activity associated with the construction for compounds, haul roads and the main grid connection as well as impacts associated with the decommissioning phase of the works. These will have a negative effect on any surviving archaeological deposits including the potential to impact on archaeological remains of the highest significance.
- 7.2.78 The applicant has submitted an archaeological desk-based assessment [**APP-131**] which has been used to inform the production of the Cultural Heritage chapter of the Environmental Statement [**APP-044**]. This assessment also includes the results of a geophysical survey of the site. Overall, this assessment does highlight the archaeological interest based on the existing Historic Environment Records and geophysical survey at the time of its production appropriately.
- 7.2.79 This assessment concludes that the main impacts of the development would be during the construction and decommissioning phases with little impact resulting from the operational and maintenance phases and we would concur with this assessment. The assessment also highlights that the impact on below ground archaeological remains would range up to high, which we would also agree with.
- 7.2.80 A geophysical survey of the site has been undertaken in line with an agreed written scheme of investigation (WSI) and the results of this has also been incorporated into the heritage assessment. A draft copy of this report has been submitted with this application [**AP-133 – AP-140**]. Based on the results of this survey a number of areas of the highest archaeological interest and likely significance have been removed from any intrusive works likely to have an impact on this significance which has further reduced the potential archaeological impact of the proposed scheme.
- 7.2.81 These areas are proposed for non-intrusive planting schemes which we strongly support. Removing these areas from current agricultural use will have a positive effect on these archaeological heritage assets.
- 7.2.82 Following this geophysical survey, an archaeological evaluation has been undertaken across the site which has identified a range of archaeological deposits including several significant sites that could be considered to be of demonstrable equivalent significance to a scheduled monument. These include a likely Roman Temple site, high

status Bronze Age barrow, another Bronze Age barrow associated with a later Early Medieval cemetery, a Roman Villa and further aspects of the scheduled Roman Small Town at Sansom's Platt and its previously unidentified cemetery.

7.2.83 The report for this evaluation has yet to be completed however and so the results have not been fully incorporated into the submitted Cultural Heritage chapter. As such the assessment of the significance of any heritage assets affected by this proposed development does not take into account the detailed data produced by the evaluation on the nature, date and level of survival of these archaeological heritage assets required to appropriately assess their significance.

7.2.84 These sites are within the areas that have been proposed to be removed from any intrusive works and so will mainly be preserved within the development. The evaluation has however provided further detail on the nature and level of survival of these archaeological sites which affects the assessment of significance. In the case of the Roman small town at Sansom's Platt it has identified a previously unknown associated cemetery.

7.2.85 Whether or not these non-intrusive planting areas are of an appropriate size to preserve important remains, and their setting, within the development will need to be based on the results of this evaluation.

7.2.86 In the absence of the report for this evaluation submitted with this application detailing the data required to appropriately assess the significance of any archaeological remains the impact of this proposed development cannot be adequately understood from the supporting documents submitted with this application alone as required by the Overarching National Policy Statement for Energy, EN-1 – paragraph 5.9.12

7.2.87 The need for the results of this field evaluation to be submitted to inform the assessment of the significance of the impact of these proposals and the suitability of the areas proposed for non-intrusive works is reiterated in Historic England's relevant representation [RR-0398], particularly for the areas around the scheduled site at Sansom's Platt. where they state that

'We understand that trial trenching has been carried out around the scheduled monument, but without the results of that trenching it is not possible to be sure of the true extent. Should the remains beyond the scheduled area be found to be of national importance, we may revise our assessment of the impact upon the setting of the whole settlement.'

7.2.88 There are also several proposed grid connection routes proposed that have not been subject to archaeological evaluation as the specific locations have not yet been finalised. These works could impact on currently unidentified archaeological deposits which could be of such significance to require physical preservation.

7.2.89 In the absence of any evaluation of these areas the significance of any heritage assets that may be impacted by this proposal cannot be understood. Given that other, previously unknown, sites of such significance to require physical preservation have been identified within the scheme this has the potential to have a considerable impact on the viability of the scheme or would be a strongly negative impact on the historic environment. These areas will also need to be subject to archaeological evaluation before the impact of this proposed scheme on this significance can be assessed.

Adequacy of the application/DCO

Built Heritage

7.2.90 The OHA appointed LUC to review ES Chapter 7 - Historic Environment [**APP-044**]. Their review can be found at Appendix 1 to this report.

7.2.91 The overall conclusion of the review indicates that the contribution of setting to the heritage assets' significance, and the contribution of the proposed development site to their setting, have been underplayed. There are methodological issues with the assessment, alongside the unsupported importance of views. Consequently, it is difficult to understand the impact and effects of the development upon the historic environment based on the current assessment.

7.2.92 The applicant is requested to:

- Revisit the approach taken to non-designated heritage assets to ensure that:
 - All locally listed buildings or assets otherwise identified have been reviewed and, where of local or greater importance and with the potential to experience effects, these have been scoped into the assessment.
- Revisit the methodology applied to the assessment to ensure that statutorily designated assets are afforded a 'high' degree of importance.
 - In turn, this should address the apparent systemic under-estimation of effects as a consequence of setting change on assets currently assigned 'medium value' (e.g. Grade II listed buildings and conservation areas)
 - Provide updated assessment outcomes for the relevant assets
- Revisit the approach to conservation areas in particular, where screening created by proposed landscape mitigation has been taken into account as a mitigant – which appears to be at odds with the character and significance of most of the affected assets of this nature.
- Revisit the approach taken to assessing and describing the effects on historic landscapes – drilling down to the character area level, rather than expressing impacts at the level of the historic landscape as a whole, and providing greater spatial specificity as to where impacts will be concentrated, how this will vary spatially and how this could/should shape design.

- It is anticipated that this information will provide important context to inform judgements on where design changes may be required.
- With regard to the assessment of impacts on the OUV of the WHS adverse effects are noted. While not judged to be significant, the attention is drawn to the fact that UNESCO guidance is clear that any adverse effect to OUV should be considered unacceptable.
- It is suggested that, taking into account the measures requested above, there may be merit in the Applicant revisiting their WHS HIA to ensure that effects are properly understood – particularly in the context of change to the historic landscape forming the setting of the WHS and contributing to OUV.
- Provide the Examining Authority and relevant parties with further information on how heritage matters (particularly the setting of conservation areas) have informed landscape mitigation proposals – and provide an assessment of effects on heritage assets of the same.

7.2.93 The overall size of the solar installation will unavoidably change the wider landscape in this area and therefore the potential impact on significance of the individual heritage assets due to development within their setting as a result of the overall proposal should not be disregarded.

7.2.94 Heritage impacts are consistently concluded by the applicant as being reversible. Paragraph 1.10.6 of Appendix 7.5: Settings Assessment [**APP-142**] for example concludes "All effects would be fully reversible." This is on the basis that the proposal is 'temporary' in nature for a period of 45 years. Discussion and debate on how much weight should be given to this 45-year period should form part of a robust balancing exercise. This period would mean that an entire generation will experience the proposed semi-industrial appearance of the landscape as the character which forms the setting of these assets. This would also result in a large proportion of the population not experiencing the reinstatement of the agricultural landscape in the setting of these again in their lifetime.

7.2.95 For these reasons it is recommended that it should be carefully considered how much weight 'temporary' should be given and whether assessment should be as if the proposed works will be permanent in terms of how heritage assets are experienced by a generation of persons. This should also be considered against the proposed environmental and bio-diversity enhancements which are likely to become permanent features of the landscape.

7.2.96 With respect to built heritage assets in Cherwell, there is particular concern about harm to the setting of Begbroke Conservation Area and to the setting of all the listed buildings in this part of Begbroke; i.e. St Michaels Church (Grade 2*), The Old Rectory (Grade 2), St Phillips Priory (Grade 2) and Hall Farmhouse (Grade 2).

7.2.97 With respect to built heritage assets in the Vale area, VWHDC broadly agree with the assets which have been specifically identified as adversely impacted by the proposal. In addition, VWHDC considers that the Cumnor Conservation Area will also be adversely impacted by change in the landscape character of the northern approach to the area which contributes to the understanding of the context of the settlement and its historic conservation area. As such, there are adverse impacts to the historic environment where panels on the southern site area should be removed to address such impacts.

7.2.98 A specific heritage related requirement is recommended for inclusion in any Development Consent Order:

7.2.99 The Grade II listed Milestone located on Oxford Road (NHLE number 1181978), shall be protected by fencing during construction and decommissioning phases. A detailed scheme of protection for the listed milestone shall be submitted to *relevant Council/body* prior to commencement and agreed in writing. The approved details shall be implemented in full. Reason: To protect and safeguard the milestone during construction.

7.2.100 With respect to built heritage assets in West Oxfordshire it is particularly concerned about development within the setting of Listed buildings at Wootton, Bladon, Church Hanborough and Cassington.

Archaeology

7.2.101 The applicant has submitted an outline written scheme of investigation (OWSI) [**APP-237**] for the subsequent investigation of archaeological deposits during the development. This outline WSI however will need to be based on the results of the archaeological evaluation, which is yet to be completed, as such we cannot agree this is an acceptable scheme at this stage.

7.2.102 This outline written scheme also contains a number of technical issues which are not in line with our standard requirements which would need to be addressed before we could accept this as an appropriate scheme of investigation. These technical issues have been highlighted to the applicant's archaeological consultant, but a revised outline scheme has not yet been submitted, either to us directly or through this application.

7.2.103 As the OWSI will be a standalone document that is directly referenced in the DCO requirements it is paramount that the document is approved by Oxfordshire County Council Archaeological Services early in the examination process, following the submission of the evaluation report.

7.2.104 The applicant has also submitted a draft requirement for securing archaeological mitigation post consent. In the absence of a report for the archaeological evaluation to inform the assessment of the significance of any archaeological heritage assets, the impact to this significance, including any contribution made by its setting, has not yet been justified as set out in the Overarching National Policy Statement for Energy, EN1 – paragraph 5.9.17.

7.2.105 Currently however the DCO proposed wording for an archaeological Requirement (Schedule 2, Requirement 10), does not allow for reporting and archiving of the archaeological works. This proposed requirement also assumes that the outline written scheme of investigation is an appropriate agreed strategy and so OCAS would recommend the following revised wording:

Archaeology

10.—(1) No part of the authorised development may commence and no part of the permitted preliminary works for that part comprising the intrusive archaeological surveys may start, until an archaeological written scheme of investigation for that part has been submitted to and approved in writing by the relevant planning authority.

(2) For the purposes of sub-paragraph 8(1), “commence” includes part (a) of the permitted preliminary works insofar as the works relate to intrusive archaeological surveys.

(3) The archaeological written scheme of investigation must be substantially in accordance with an outline written scheme of investigation, approved in advance by the relevant planning authority, and must be implemented as approved.

(4) within two years of the completion of the archaeological mitigation fieldwork an updated project design and post excavation assessment detailing all processing, research and analysis necessary to produce and secure the delivery of an accessible and useable archive and a full report for publication must be submitted to and approved in writing by the relevant planning authority.

Conclusion on Historic Environment

Impact on Built Heritage – **negative**

Impact on Archaeology – **neutral**

7.3 Landscape and Visual Impact Assessment (“LVIA”)

Summary:

- The OHA consider the proposed development would result in significant effects to both Landscape Character and Views.
- The approach and methodology used in the LVIA [PDB-006] underplays the impact of the development. The LVIA assesses the development as not causing significant effects on the landscape character, and with regard to visual effects, no significant effects are anticipated by year 15.
- The OHA are concerned that the LVIA is not clear in how it has been used to inform the siting, scale and design of the scheme, including master planning to avoid areas of most significant landscape and visual impacts and how landscape character and visibility have been used to inform the mitigation strategy.
- The OHA are concerned that the proposed mitigation methods such as hedges around Public Rights of Way will fundamentally change the way the landscape and views are appreciated.

Mitigation / Improvements

- The applicant should revisit their LVIA assessment and address concerns raised with regards to methodology/scope/ process, baseline information, assessment of effects, mitigation & design and visualisations. Issues to be addressed include (more information is covered below):
 - The duration, geographical extent, reversibility, cumulative effects, thresholds of significance, assessments of effects, effects of lighting especially during construction and worst-case scenario winter year 15.
 - Revising the landscape character assessment including addressing issues regarding landscape susceptibility, judgements regarding landscape sensitivity, assessment of landscape character and landscape features of the site, providing information on sensitivity of the site, the assessment of landscape effects during construction and operation on site and landscape character areas “LCAs” / landscape character types “LCTs” and the approach taken in assessing and describing effects on landscape character.
 - Revising the visual assessment including visual susceptibility to local communities, judgements regarding visual sensitivity, the assessment of visual effects on PRowS, the viewpoint assessments where levels of effects have reduced between years 1 and 15 but where the proposed planting will not provide any screening.
 - Revisit the LVIA with regards to providing further information on how landscape and visual matters have informed landscape mitigation proposals and reconsider the appropriateness of the proposed mitigation measures where new planting will completely change the experience afforded to users of PRowS.
 - Revisit the assessment with regards to the relationship of the site with the Cotswolds National Landscape including landscape and visual

effects and the visual effects on visitors to Blenheim Palace Park and Gardens.

- Clarity regarding the justification for scoping out the Residential Visual Amenity Assessment (RVAA), as the current reasoning in the LVIA appears flawed.
- Revisit the visualisation methodology including ZTV production, photography height, field of view of the proposed development, single frame visualisations, modelling of visualisations, accuracy of visualisations, annotations of viewpoints, including the scheme layout on location plans.
- Improve the provided mapping for the scheme to aid understanding, including providing a plan combining the proposed layout of the scheme with locations of photo viewpoints and numbered PRoW routes. Improved mapping of the locations of schemes considered in cumulative assessment in association with the scheme layout should also be provided.
- The OHA would like the revised LVIA work to inform the siting, scale and design of the scheme including creating a Constraints and Opportunities plan to aid the master planning of the site. Panels should be removed from the scheme where they cause significant harm to landscape character and visual amenity. The applicant should revisit their proposed mitigation to ensure it does not impact on the way in which landscape and views are appreciated.

Key Policies / Compliance

Table 6 - Development Plan policies relevant to Landscape and Visual Assessment

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP ESD13: Local Landscape Protection and Enhancement CLP ESD17: Green Infrastructure CLP 1996 Saved C15: Prevention of Coalescence of Settlements CLP 1996 Saved C33: Protection of Important Gaps of Undeveloped Land	Conflict identified
Vale of White Horse	LPP1 CP41 – Renewable Energy LPP1 CP44: Landscape LPP2 DP21: Lighting CNP DBC7: Important Views CNP EBC2: Farmoor Reservoir	Conflict identified with CP41, CP44, DBC7 and EBC2
West Oxfordshire	OS2 – Locating Development in the Right Places EH1 – Cotswolds National Landscape EH2 – Landscape Character Salt Cross AAP – Policy 7 Green Infrastructure Salt Cross AAP – Policy 28 – Spatial Framework	Conflict identified

Oxfordshire County Council	N/A	
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Policy Detail

- 7.3.1 A large number of the Overarching National Policy Statement for energy (EN-1) and National Policy Statement for renewable energy infrastructure (EN-3) paragraphs are listed below as these illustrate the points that the OHA consider are missing or not adequately addressed within the application.
- 7.3.2 EN-1 (para. 4.7.5) states *‘Whilst the applicant may not have any or very limited choice in the physical appearance of some energy infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting relative to existing landscape character, landform and vegetation...’*
- 7.3.3 EN-1 (para. 5.10.4) states that landscape effects arise not only from the sensitivity of the landscape but also the nature and magnitude of the change proposed by the development, whilst specific siting and design issues make the assessment a case by-case judgement.
- 7.3.4 EN-1 (paragraph 5.10.5) states that virtually all nationally significant infrastructure projects will have adverse impacts on the landscape, but there may also be beneficial landscape character impacts arising from mitigation. EN-1 requires energy infrastructure to be of good design (para.4.7.7) in that applicants must demonstrate in their application documents how the design process was conducted and how the proposed design evolved. Where a number of different designs were considered, applicants should set out the reasons why the favoured choice has been selected. It also requires *“Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.” (para. 5.10.6).*
- 7.3.5 EN-1 (para. 5.10.8) covers the duty to seek to further the purposes of nationally designated landscapes also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them.
- 7.3.6 EN-1 (para. 5.10.13 and 5.10. 14) acknowledges that all proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites and the Secretary of State will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project.

- 7.3.7 EN1 (para. 5.10.19) states *‘The applicant should consider landscape and visual matters in the early stages of siting and design, where site choices and design principles are being established. This will allow the applicant to demonstrate in the ES how negative effects have been minimised and opportunities for creating positive benefits or enhancement have been recognised and incorporated into the design, delivery and operation of the scheme.’*
- 7.3.8 EN1 (para. 5.10.27) states ‘Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within its development site and wider setting. The careful consideration of colours and materials will support the delivery of a well-designed scheme, as will sympathetically landscaping and management of its immediate surroundings’.
- 7.3.9 EN1 (para 5.10.28) states ‘Depending on the topography of the surrounding terrain and areas of population it may be appropriate to undertake landscaping off site. For example, filling in gaps in existing tree and hedge lines may mitigate the impact when viewed from a more distant vista.’
- 7.3.10 In decision making, paragraph 5.10.35 of EN-1 states that the ExA should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits of the project. Moreover, the ExA should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape by including appropriate mitigation.
- 7.3.11 EN-3 (para 3.10.8) acknowledges that the scale of solar development will inevitably have impacts, particularly if sited in rural areas.
- 7.3.12 EN-3 (para 3.10.28) states *‘Applicants are encouraged where possible to minimise the visual outlook from existing public rights of way, considering the impacts this may have on any other visual amenities in the surrounding landscape.⁸⁰’* For example, screening along public right-of-way networks to minimise the outlook into the Solar Park may, impact on the ability of users to appreciate the surrounding landscapes’.
- 7.3.13 EN-3 (para 3.10.32) states *‘Applicants should assess the visual impact of these security measures, as well as the impacts on local residents, including for example issues relating to intrusion from CCTV and light pollution in the vicinity of the site.’*
- 7.3.14 EN-3 (para 3.10.33) states *‘Applicants should consider the need to minimise the impact on the landscape and visual impact of security measures.’*
- 7.3.15 EN-3 (3.10.86) states *‘However, whilst it may be the case that the development covers a significant surface area, in the case of ground-mounted solar panels it should be*

noted that with effective screening and appropriate land topography, the area of a zone of visual influence could be appropriately minimised.'

7.3.16 EN-3 (3.10.87) states '*Landscape and visual impacts should be considered carefully preapplication. Potential impacts on the statutory purposes of nationally designated landscapes should form a part of the pre application process*'.

7.3.17 EN-3 (3.10.88) states '*Applicants should carry out a landscape and visual assessment and report it in the ES. Visualisations may be required to demonstrate the effects of a proposed solar farm on the setting of heritage assets and any nearby residential areas or viewpoints*'.

7.3.18 EN-3 (3.10.89) states '*Applicants should follow the criteria for good design set out in Section 4.6 of EN-1 when developing projects and will be expected to direct considerable effort towards minimising the landscape and visual impact of solar PV arrays especially within nationally designated landscapes*'

7.3.19 EN-3 (3.10.90) states '*Whilst there is an acknowledged need to ensure solar PV installations are adequately secured, required security measures such as fencing should consider the need to minimise the impact on the landscape and visual impact (see paragraphs 2.10.31 – 2.10.33 above)*'

7.3.20 With specific reference to Solar Photovoltaic Generation, EN-3 highlights (paragraph 2.10.94) that: "*Solar farms are likely to be in low lying areas of good exposure and as such may have a wider zone of visual influence than other types of onshore energy infrastructure*". Paragraph 3.10.86 states that: "*whilst it may be the case that the development covers a significant surface area, in the case of ground-mounted solar panels it should be noted that with effective screening and appropriate land topography, the area of a zone of visual influence could be appropriately minimised.*"

Local Policy

7.3.21 Policy ESD13 of CLP: Local Landscape Protection and Enhancement. Development will be expected to respect and enhance the local landscape character, securing appropriate mitigation where damage to local landscape character cannot be avoided. Proposals will not be permitted where they:

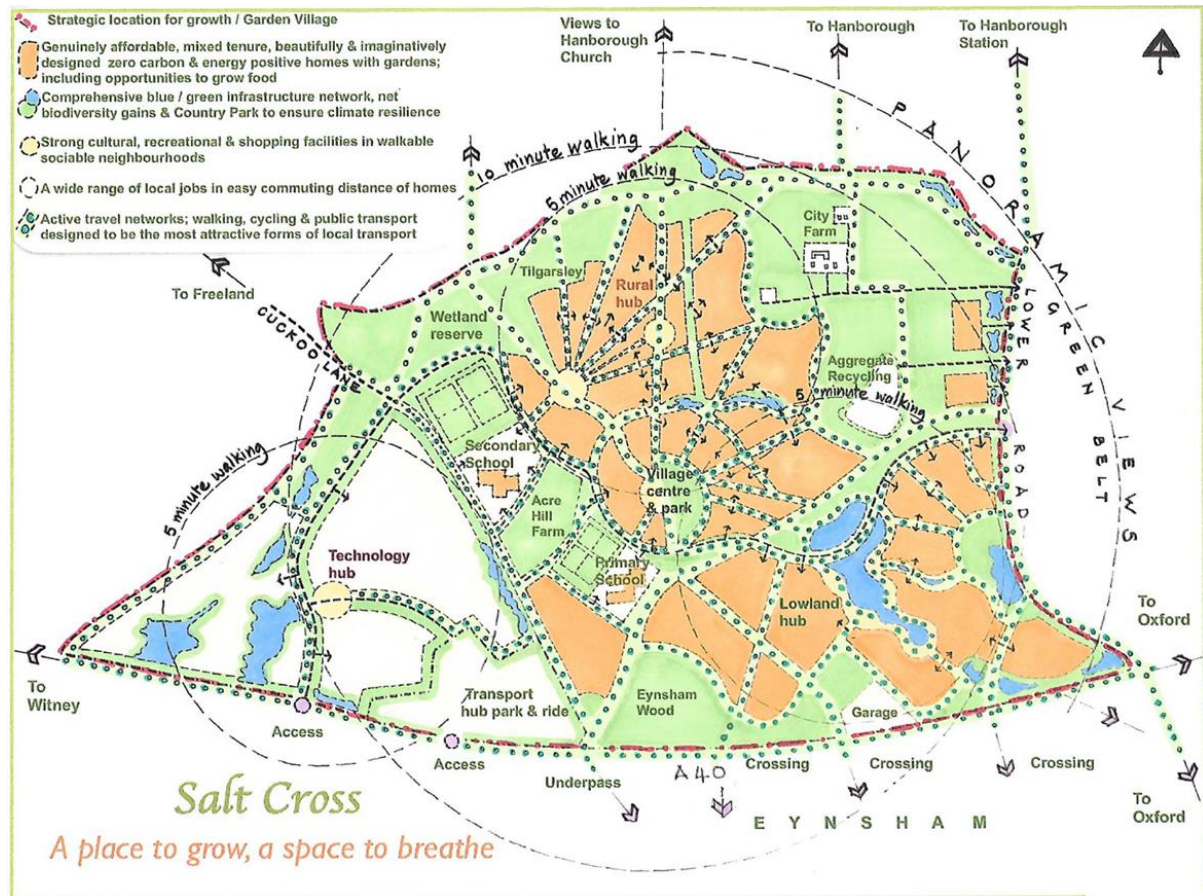
- Cause undue visual intrusion into the open countryside
- Cause undue harm to important natural landscape features and topography
- Be inconsistent with local character
- Impact on areas judged to have a high level of tranquillity
- Harm the setting of settlements, buildings, structures or other landmark features, or
- Harm the historic value of the landscape.

- 7.3.22 Policy ESD17 of CLP: Green Infrastructure. The GI network will be maintained and enhanced via a number of measures, including ensuring the Green Infrastructure network considerations are integral to the planning of new development.
- 7.3.23 Saved Policy C15 of CLP 1996 – Prevention of the coalescence of settlements. Restriction of development on areas of open land between settlements to prevent their coalescence.
- 7.3.24 Saved Policy C33 of CLP 1996 - Protection of important gaps of undeveloped land. Retention of undeveloped gaps important in preserving character of settlements or maintaining settings of listed buildings or preserving views/features of recognised amenity/historical value.
- 7.3.25 Policy CP44 of LPP1 sets out the approach to protecting the important landscape setting of the Vale. It seeks to protect key features that contribute to the nature and quality of the Vale of White Horse District's landscape from harmful development and where possible enhanced. These key features include:
- features such as trees, hedgerows, woodland, field boundaries, watercourses, and water bodies
 - important landscape settings of settlements
 - topographical features
 - areas or features of cultural and historic value
 - important views and visually sensitive skylines, and
 - tranquillity and the need to protect against intrusion from light pollution, noise, and motion.
- 7.3.26 Policy DP21 of LPP2 confirms development that involves external lighting will be permitted provided the lighting proposed is the minimum necessary to undertake the task for which it is required, and that there would not be an adverse effect on the character of the area, amenity of neighbouring uses or on local biodiversity, and there would not be a hazard to pedestrians or people using any type of transportation.
- 7.3.27 Policy DBC7 of CNP identifies important views that contribute to the rural character of the parish. The policy advises that proposals should preserve, or where practicable enhance, the local character of the landscape in general and should take account of the important views identified. Development proposals which would have an unacceptable impact on the local character of the landscape and/or on an identified important view will not be supported.
- 7.3.28 Policy EBC2 of CNP states development proposals located within the environs and setting of Farmoor Reservoir which would enhance the recreational use of the reservoir, and its surroundings will be supported subject to the reservoir's function and

setting being retained and public access to the reservoir is safeguarded and where practicable enhanced.

- 7.3.29 WOLP Policy EH2 seeks to conserve and enhance the quality, character and distinctiveness of West Oxfordshire's natural environment, including its landscape, cultural and historic value, tranquility, geology, countryside, soil and biodiversity. Many of these considerations are cross cutting and relate to other chapters of the LIR. New development should conserve and, where possible, enhance the intrinsic character, quality and distinctive natural and man-made features of the local landscape, including individual or groups of features and their settings, such as stone walls, trees, hedges, woodlands, rivers, streams and ponds. (The remaining paragraphs of Policy EH2 are set out in paragraphs 7.3.30 to 7.3.32).
- 7.3.30 Proposals which would result in the loss of features, important for their visual, amenity, or historic value will not be permitted unless the loss can be justified by appropriate mitigation and/or compensatory measures which can be secured to the satisfaction of the Council.
- 7.3.31 Proposed development should avoid causing pollution, especially noise and light, which has an adverse impact upon landscape character and should incorporate measures to maintain or improve the existing level of tranquillity and dark-sky quality, reversing existing pollution where possible.
- 7.3.32 Special attention and protection will be given to the landscape and biodiversity of the Wychwood Project Area.
- 7.3.33 The spatial framework of the emerging Salt Cross AAP identifies panoramic views to the North and east towards the proposed Botley West development area, Landscape Figure 1. Policy 7 and the AAP requires that the existing landscape within and around the Garden Village informs the community and GI network including, long distance views to Wytham Wood and Church Hanborough spire.

Landscape Figure 1 - Salt Cross Spatial Framework Plan



Commentary

7.3.34 The OHA consider the proposed development is not acceptable in landscape and visual terms.

Adequacy of the application/DCO

7.3.35 The LVIA is provided in revised chapter 8 of Volume 1 of the ES [PDB-006]. There has been very limited engagement with the OHA on landscape and visual matters and neither the methodology nor the viewpoints were agreed with all authorities in advance of the LVIA being carried out. The OHA raised concerns in relation to the methodology and the approach taken in assessing the landscape and visual impacts of the development in their responses to EIA Scoping, the PEIR, pre-submission meetings and their RR ([RR-0164], [RR-0793], [RR-1086] and [RR-1102]) but these appear not to have been addressed in the LVIA. There have been no landscape working groups with the applicant and engagement has been *ad-hoc*. Furthermore, no discussion has been undertaken with regards to the design of the scheme and its mitigation.

7.3.36 Para 8.14.4 of the ES [PDB-006] provides a summary of the LVIA findings. The LVIA assesses the development not to cause significant effects on the landscape character. For visual effects, it considers 12 viewpoints to be significantly affected by year 1, with

no significant effects anticipated by year 15 on the basis that mitigation planting will have sufficiently matured.

7.3.37 The OHA consider the ES grossly underestimates the impact of the development on local landscape character and views. This is supported by the review by LUC of the ES chapters relating to Landscape and Visual Impacts [**APP-045**], which is provided in Appendix 1 to this LIR.

7.3.38 The review covers methodology/scope/ process, baseline information, assessment of effects, mitigation & design and visualisations. The OHA do not wish to repeat all the detail here but expect the report to be taken into account in full.

7.3.39 The LUC report includes in paras 2.70-2.72 the following conclusions and recommendations for the LVIA:

“Overall, it appears that the landscape and visual effects reported in the LVIA have been underplayed and some methodological issues are also highlighted.

The lack of the above elements makes difficult to accurately and fully understand the impact and effects upon the landscape and on visual amenity.

The Applicant is therefore requested to:

- *Revisit the methodology applied to the assessment to ensure and clarify that:*
 - *the duration of the project has been correctly considered (i.e. the long-term nature of the operation phase should be considered as part of the magnitude of change).*
 - *the reversibility of the project has been correctly considered (as aspects of the development such as earthworks, and the mitigation planting will not be reversible). Confirmation is also required as to what will happen to the substations and access tracks beyond the operational phase.*
 - *detailed information regarding the production of the ZTVs is provided (including how the heights of existing buildings and vegetation have been derived), and to provide clarity as to if a worst case ‘bare earth’ ZTV has been included or not.*
 - *the geographical extent, duration and reversibility has been correctly considered for the visual assessment for the representative viewpoints.*
 - *the assessment of cumulative effects considers the full scenario; whereby multiple projects may co-exist in the landscape.*
- *Revisit the threshold of significance which currently considers effects of Moderate or less to not be significant (given the definition provided for a medium magnitude of effect sounds like a significant effect).*
 - *Provide an updated assessment as currently the significance of effects appears to have been downplayed.*

- *Provide an assessment that considers the effects of lighting, including temporary lighting during construction, or stronger justification as to why this has been scoped out.*
- *Provide confirmation that the exclusion of the Residential Visual Amenity Assessment (RVAA) was agreed with relevant consultation bodies, and clarity regarding the justification for scoping it, out as the current reasoning appears flawed. The proposed 25m offset for properties, settlements and communities requires consideration on a case by case basis, so that aspects such as topography and vegetation are fully considered. A standard 'buffer' approach is unlikely to be sufficient in terms of mitigation of significant effects at all locations.*
- *Revisit the approach to assessing and describing the landscape and visual effects at year 15 ensuring that the worst-case scenario (i.e. winter) has been assessed.*
- *Provide clarification as to how the judgements (and their definitions) of susceptibility and value correspond to sensitivity by revisiting Tables 8.9 and 8.10.*
- *Revisit and expand the criteria used for landscape susceptibility to clearly set out the characteristics of the landscape which are being considered to determine its susceptibility.*
- *Revisit and expand the criteria used for visual susceptibility to ensure that consideration has been given to local communities, and that they have been appropriately assessed. The LVIA does not state why local communities have been scoped out, and given the scale of the Proposed Development and the number of settlements surrounding the Site, the apparent exclusion of local communities is considered to be an omission.*
- *Revisit the judgements regarding landscape and visual sensitivity (Tables 8.15 and 8.17 respectively) to provide justification as to how each sensitivity rating has been reached, in terms of the contribution of judgements on susceptibility and value.*
- *Provide a clear summary of the landscape character and landscape features of the Site, and show how the descriptions from the various published landscape character assessments, GI Strategy etc have informed the proposed landscape and visual related mitigation / design. Set out clearly the lengths and areas of vegetation to be lost (including numbers and quality of trees), as well as the lengths of new hedgerows /numbers of new trees etc. Consider the planting of copses of woodland to help reduce effects, where appropriate to landscape character.*
- *Provide further information relating to the sensitivity of the Site, which appears to be missing.*
- *Revisit the judgement of sensitivity relating to the Cotswolds National Landscape (Table 8.16) and consider the national landscape as having a 'very high' sensitivity, or provide justification as to why it has been judged to have*

the same level of sensitivity (high) as users of public rights of way and access land.

- *Provide an assessment that considers the visual effects on visitors to Blenheim Palace Park and Gardens, or justification as to why this has been scoped out.*
- *Revisit the assessment of landscape effects during construction and operation on the Project Site and the host LCA/LCTs, as effects have been understated as it is considered that locally significant effects on landscape character are inevitable given the extensive change in land use across a site of this scale.*
- *Revisit the approach taken to assessing and describing the effects on landscape character – drilling down to the character area level, rather than expressing impacts at the level of the ‘LCA as a whole’ and providing greater spatial specificity as to where impacts will be concentrated, how this will vary spatially and how this could/should shape design.*
 - *It is anticipated that this information will provide important context to inform judgements on where design changes may be required.*
- *Revisit the assessment of landscape and visual effects on the Cotswolds National Landscape as effects appear to have been understated, and provide a representative viewpoint from it (e.g. from Wychwood Way walking trail at Combe), so that the effects on the National Landscape can be fully understood.*
- *Revisit the assessment of visual effects on PRoWs as there are several inconsistencies with the methodology as noted in this review. Ensure sequential effects on users are fully considered, noting the nature and frequency of views (in summer and winter conditions).*
- *Revisit viewpoint assessments where the levels of effect have been reduced between years 1 and 15, but where the proposed planting will not provide any screening.*
- *Provide or refer to a mapped figure illustrating the locations of the schemes considered in the cumulative assessment.*
- *Provide the Examining Authority and relevant parties with further information on how landscape and visual matters have informed landscape mitigation proposals.*
- *Re-consider the appropriateness of the proposed mitigation measures where new planting will completely change the nature and openness of the view, and the experience afforded to users of PRoWs. In particular, consider the nature of the planting, its proposed height and the way it is to be managed (traditional techniques such as laying should be employed).*

7.3.40 LUC have also undertaken a similar review of the Applicant's visualisations, and this is provided below and in Appendix 1, Chapter 3.

7.3.41 In addition to the above, the OHA wish to expand on the following topics of concern and disagreement based on their previous comments to the PEIR and RR, and the LUC review, as there are fundamental concerns about this NSIP application with regards to the LVIA assessment and how this has informed the design and layout of the solar scheme. Concerns are not just about the assessment methodology, but whether the level of assessment has been undertaken at a scale appropriate to inform the development of the Botley West scheme.

Significance levels and their application in the assessment

7.3.42 The OHA are concerned about how significance levels are being set in the methodology and how they are applied in the assessment. This issue of what is considered 'Significant' is covered in both the LUC response Appendix 1 and in the OHAs' previous responses.

7.3.43 Concerns also relate to the significance of impacts being based on spot receptors rather than looking at the project more holistically. PRow routes are an example for this, paragraph 8.5.22 [PDB-006] states *"For the purpose of this assessment, any effects with a significance level of Moderate or less are not considered to be significant in terms of the EIA Regulations."*

7.3.44 However, the OHA consider this approach to be too simplistic, setting the bar too high in terms of the significance thresholds. The OHA are also of the view that impacts should be considered significant when the assessment results in multiple negative effects, such as on connecting PRow routes. Assessment of an effect should not be looked at in isolation and discarded as not significant but viewed holistically as part of the whole picture and reflect the impact of the receptors journey through the landscape along the PRow.

7.3.45 The appropriateness of this is recognised in the last row of table 8.6 (Summary of consultation relevant to this chapter) on page 24 of Chapter 8, where it states *'Assessment considers effects from individual Representative Viewpoints. But it is acknowledged within the LVIA that effects may be present along length of the PRow or roads for example.'* The LVIA states in section 8.9.125 of: *'However, where Moderate significance of effect has been identified at multiple points along the same PRow, sequentially these Moderate adverse effects could be considered significant.'* This is recognised in relation to viewpoints 37, 38 and 39 but is not picked up elsewhere in the LVIA, and the OHAs therefore do not consider that the landscape and visual impact of the development including the PRow network is adequately covered in the LVIA.

Temporary nature and reversibility of the development

7.3.46 The OHA disagree with how the applicant addresses 'duration' and 'reversibility' in the LVIA. It is unclear what weighting is given to the different sections in the 'Magnitude of

Change' methodology. In addition, there is also some confusion in the terminology, and this is covered in the LUC comments, Appendix 1.

7.3.47 The assessment downplays the long-term nature of the project by classing the Operation and Maintenance phase as 'temporary'. Whilst technically speaking, a 40-year lifespan is temporary, (as explained in paragraph 7.3.49) not all works will be temporary. The long-term nature of the operation phase should be considered as part of the magnitude of change, and this does not seem to have been the case throughout the assessment.

7.3.48 It should be noted that a recent decision on a solar development in the Greenbelt concluded that 40 years should not be judged as "temporary" (APP/A1910/W/23/3317818 Little Heath Lane, Little Heath, Berkhamstead).

7.3.49 Paragraphs 8.5.9 and 8.5.11 of the ES both state '*For the purposes of this assessment the Project is considered to be fully reversible*', and this has an influence on the assessment values. However, this statement is incorrect as aspects of the development such as earthworks, and the mitigation planting (which forms part of the Proposed Development) will not be fully reversible. For example, it is not clear what will happen to the access tracks, the electrical connection to the grid and whether all structures will be removed. The applicant has confirmed in the first Issue Specific Hearing (ISH1) on 15th May that mitigation planting such as hedgerows is proposed to remain in place. Whilst this might be appropriate in some locations, it has the potential to also result in permanent changes to the local landscape character and views.

7.3.50 The OHA also have concerns about how 'reversibility' is being applied to the assessment of effects. i.e. paragraph 8.9.119 states "*The magnitude of impact, for those parts of the PRoW where views are available, would be Medium, resulting in a Moderate adverse significance of effect. Considering users' High sensitivity, reversibility of the solar farm and proposed mitigation, albeit not yet having matured and reached its' intended design function. This effect is not significant.*" High sensitivity, medium impact would give a *Moderate to Major adverse significance*, which is significant under EIA assessment. This significance should not be reduced because the Applicant considers the solar farm "reversible".

Viewpoints and Visualisations

7.3.51 Concerns with the presentation of photo viewpoints and visualisations were raised in the Councils' responses to the Scoping dated June 2023 and the PEIR, and some of these concerns remain.

Visualisations

7.3.52 Concerns regarding visualisation are supported by the review by LUC, which is provided in Appendix 1. The review offers the following conclusions and recommendations (paras. 3.17-3.18) on the visualisations:

“Overall, it appears that there are some issues with how the visualisations have been prepared and presented.

7.3.53 *The Applicant is therefore requested to:*

- *Revisit the methodology applied to ensure all information as advocated by the Landscape Institute’s Technical Guidance Note 06/19: Visual Representation of Development Proposals is provided and provide clear justification as to why photography was taken at a height of approximately 1.7m instead of the recommended 1.5m.*
- *Ensure that the full field of view occupied by the Proposed Development is shown in visualisations where this exceeds 90 degrees.*
- *Re-consider the single frame visualisations used where they have been selected to demonstrate the point of least visual impact.*
- *Ensure that the height of proposed planting has been accurately represented in visualisations, and that alongside proposed fencing, has been modelled correctly.*
- *Re-consider the accuracy of the visualisations noted as concern within this review.”*

7.3.54 In addition to the above LUC comments, the OHA have remaining concerns about the visualisation that were not addressed in the LVIA. The OHA consider the representative photographs do not meet the requirements of the Landscape Institute’s technical guidance note on visualisations (TGN-06-19: Visual Representation of Development proposals), which requires as a minimum that the location of the development is identified in the views (Type 1 visualisations).

7.3.55 ES Volume 3 Appendix 8.4: Photomontage Methodology [**APP-149**] 1.1.1 refers to the methodology used for annotated photographs, photomontages or photo wireline, but predominately only covers the photomontages. Due to the scale and public interest of the project, the OHA requested at PEIR stage that all viewpoint plans be annotated. Annotations should include key features and have wirelines to highlight the location and extent of areas of the proposed solar arrays (but not necessarily full modelling of the arrays), so that the extent of the scheme can be easily understood by all. A map extract to indicate the location of the view would also be useful and is recommended by Landscape Institute guidance TGN-06-19.

7.3.56 The LVIA information is not easily accessible, and it would be helpful to have a plan that includes the Masterplan Layout, Viewpoint locations and the PRow clearly marked and numbered, to help with the understanding of the submitted visualisations.

7.3.57 The OHA (as explained in paragraph 7.3.51) expressed concerns that some viewpoints and visualisations did not cover the whole extents of the view of the solar farm from a specific viewpoint, for example in relation to viewpoints VP48 and VP45. Views from VP5 are presented in three views, 5a, 5b and 5c, covering different viewing directions. This approach should also be provided for other viewpoints such as VP48 where the scheme covers areas to the East and West of the northern viewpoint included in the ES. This request was not satisfactory addressed in the LVIA.

Viewpoints

7.3.58 *Guidelines for Landscape and Visual Impact Assessment 3rd edition (GLVIA3)* expects the LVIA to identify people within the area who will be affected by the changes in views and visual amenity. The OHAs raised concerns (both in the Scoping and PEIR) about the limited range and number of viewpoints, such as limited coverage of the wider footpath network to the North and East of the site.

7.3.59 For comparison, withdrawn planning application (VWHDC ref: P23/V2624/FUL) for Red House solar farm (a similar scale to, and adjoining, the Southern Site of Botley West and now resubmitted under reference P24/V2489/FUL) used 30 different photo locations covering 13 different routes in its assessment report. In contrast, Botley West uses 12 to cover the southern extents of the application with 5 visualisations. The OHA consider this not to be comprehensive enough for the scale of proposed development and to sufficiently cover views from the PRoW network. There are numerous places where views have not been taken, including those highlighted in the Cumnor Neighbourhood Plan such as Viewpoint 5b, 12, 23, 7, 12 and 17.

7.3.60 The LVIA for the proposed development only uses 55 viewpoints despite it being approximately 17 times greater than the Red House application, and consisting of three different areas of solar, the grid connection area and the cable routes. This indicates that the assessment has not been undertaken at a scale that is proportional to that of the proposal.

7.3.61 There was no change in the number of viewpoints between the PIER assessment, the Scoping and the LVIA. The ZTV for the proposed buildings and associated infrastructure was only provided at LVIA stage to inform the number of viewpoints, but this has not led to an adjustment in the number of viewpoints to consider the wider ZTV.

7.3.62 The LVIA does also not include any viewpoints in areas where cabling is proposed on the basis that effects are limited to the construction phase, however, with the level of impact and duration not being clear, the OHA suggest that assessments from selected viewpoints are included to demonstrate the level of impact of these measures, e.g. a view from the Thames Path near Swinford Bridge.

7.3.63 The OHA also highlighted in previous comments [RR-0793 (para 3.2) and [RR-1086] (page 19) that the impact of mitigation measures on views and landscape character needs to be considered in the LVIA assessment. Many available views are large-scale over the wider landscape, whereby screening a view so that solar panels or other development cannot be seen also has an impact as the landscape-scale view is no longer obtainable. This potential impact of mitigation should be covered and factored into the assessment of views. The OHA do not consider there has been assessment in the EIA on how mitigation will impact on the ability to enjoy the changing views of the landscape especially from the PRow network as per EN-3 (para 3.10.28).

Landscape Baseline and Assessment

7.3.64 GLVIA 3 states in Establishing the landscape baseline, paragraph 5.3:

‘Baseline studies for assessing landscape effects require a mix of desk study and field work to identify and record the character of the landscape and the elements, features and aesthetic and perceptual factors which contribute to it. They should also deal with the value attached to the landscape (see paragraph 5.19). The methods used should be appropriate to the contexts into which the development proposals will be introduced and in line with the current guidance and terminology.’

7.3.65 And paragraph 5.34 of GLVIA3 is as follows:

- *“The first step is to identify the components of the landscape that are likely to be affected by the scheme, often referred to as the landscape receptors, such as overall character and key characteristics, individual elements or features, and specific aesthetic or perceptual aspects.*
- *The second step is to identify interactions between these landscape receptors and the different components of the development at all different stages, including construction, operation and, where relevant, decommissioning and restoration / reinstatement.”*

7.3.66 While the baseline work in the LVIA covers the hierarchy of published Landscape Assessments (although not Neighbourhood Plans LCAs), no site-specific landscape character assessment has been prepared and there is no reference to what features from the existing assessments are present in the site and where they are located on site.

7.3.67 The Key Characteristics of the published Landscape Character Assessment Types and Areas are detailed in Appendix 8.1 of the ES [APP-143] however this assessment looks unfinished. The text for each section starts with similar sentences for example 1.3.30 *‘The Vale Farmland LT covers part of the Project Site (fields x) in the south of the Study Area and the key characteristic features relevant to the Application Site and the surrounding areas are summarised as:’*

- 7.3.68 It is difficult to see where the Baseline assessment of the site is presented in the LVIA [PDB-006], as per section 5.33 of GLVIA3 to identify and record the different characters of the landscape, and the elements, features and aesthetic and perceptual factors which contribute to it. The only reference the OHA could see is contained in paragraphs 8.6.33 and 8.6.34, which state

Fieldwork indicates that the landscape of the Project Site is a series of small to medium size predominantly arable fields with several mature scattered trees bounded by largely intact hedgerows with trees. The landscape is one of generally good quality and has some landscape attributes (e.g. designations, scenic qualities, special interests or uses) in common to that of the Cotswolds National Landscape, to the west, which would confer a higher value for much of the Project Site.

Overall, it is considered that the Project Site is of good quality and typical of the landscape within the wider Study Area. It is considered that the Project Site is of medium to high landscape value.

- 7.3.69 It is unclear how landscape effects have been predicted and described in the LVIA if there is no clear baseline information to base these effects on. Without this level of baseline information, it is not clear how the GLIVA methodology has been followed.

- 7.3.70 The LVIA states in the Operation and Maintenance Phase in the Landscape Effects section:

8.9.109 With the retention, enhancement and management of existing characteristic landscape features during the lifetime of the Project, the overall structure of the landscape would remain. The Project would not result in any significant harm to the landscape value of the Project Site, with limited loss of important landscape characteristics. Following the construction phase, on completion, at winter Year 1, a Medium magnitude of direct impact upon the Project Site would result in a Moderate adverse significance of effect.

8.9.110 At summer Year 15, the establishment of proposed planting and the continued grassland management would help to integrate the Project into the landscape. On balance, there would be an overall magnitude of impact of Low, with a Minor adverse significance of effect, which is not significant.

8.9.111 The Project would be located within LCA 4: Eastern Parks and Valleys; LCA 11: Eynsham Vale; LCA LM19: Whiteley Copse to Chawley Corallian Limestone Ridge with Woodland and LCA LM20: Farmoor to Botley Corallian Limestone Ridge with Woodland. The development of a large-scale solar farm within generally well contained farmland would cause a Low magnitude of impact upon the LCA as a whole

with any change in character confined to the Project Site of Medium to High sensitivity and result in Minor adverse significance of effect, which is not significant.

8.9.112 At summer Year 15, the establishment of proposed planting and the continued grassland management would help to integrate the Project into the landscape. When considering the scale of the development relative to the LCA as a whole there would be remain a magnitude of impact of Low, with a Minor adverse significance of effect, which is not significant.'

7.3.71 The OHA have found it difficult to follow the assessment with regards to landscape effects on the project site and have concerns about the reported '*overall magnitude of Low, with minor adverse significance effect, which is not significant*'.

7.3.72 The OHA have similar concerns with how the assessment of effects on the LCAs have been undertaken, including the statement '*When considering the scale of the development relative to the LCA as a whole, there would be remain a magnitude of impact of Low, with a Minor adverse significance of effect, which is not significant.*'

7.3.73 Many of the key characteristics that contribute to the LCA, such as the lack of development in the landscape and open views would be lost or impacted within the site and in the wider surrounding landscape. The development would fundamentally change the character of sections of the LCAs.

7.3.74 The points highlighted above with regards to Landscape Effects indicate the OHAs concerns about the submitted LVIA, mitigation and associated Masterplan and what evidence it has been based on.

7.3.75 EN-1 requires energy infrastructure to be of good design and landscape and visual matters considered in early stages (paragraphs 4.7.7 and 5.10.19) in that applicants must demonstrate in their application documents how the design process was conducted and how the proposed design evolved. Where different designs were considered, applicants should set out the reasons why the favoured choice has been selected. It also requires:

"Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate." (paragraph 5.10.6).

7.3.76 The LVIA does not clearly describe how the design of the scheme was created with regards to minimising the potential impact on the landscape (or visual) effects. As covered in VWHDC RR [RR-1086 pages 14 –16] there has been little evolution of the scheme between the initial consultation on the PEIR and the submitted NSIP, and limited information within the NSIP to explain changes to the scheme and associated

Masterplan. The OHA can only assume this might be due to fact that the LVIA assessment predominately assesses the Landscape Effects and Visual Effects as not significant, and therefore the applicant did not see a need to develop the Masterplan to further reduce Landscape and Visual effects.

Design evolution/iterative design

- 7.3.77 It is unclear how the LVIA has informed the design. The National Policy Statement EN-1 states:

Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate (Para 5.10.6).

- 7.3.78 It further requires applicants to demonstrate in their application documents “... *how the design process was conducted and how the proposed design evolved. Where different designs were considered, applicants should set out the reasons why the favoured choice has been selected.*”

- 7.3.79 It is unclear how findings in the ES including the LVIA have informed the siting, scale and design of the project as required by EN-1. Chapter 5 (alternative options) seems to suggest that the site location was primarily chosen based on land availability (willing landowners) and availability of a grid connection. Whilst the importance of these factors is understood, it is not clear how environmental factors have informed the layout and design, e.g. how considerations relating to landscape character, topography, views, ecology surveys, heritage, historic landscape character or agricultural land classifications have been considered. The only environmental issues that appear to have been included are designated sites and archaeological areas.

- 7.3.80 The OHAs remain concerned about how the evidence base of this application has fed into the Masterplan and site proposals. Chapter 4 Approach to Environmental Assessment [**APP-041**] states in section 4.1.2:

The key elements in EIA for a Nationally Significant Infrastructure Project (NSIP) are:

- a. Iterative project design, taking feedback from consultation and applying it to the development design process on an ongoing basis throughout the EIA process;*
- b. Scoping and ongoing consultation, including consideration of responses and how these should be addressed as part of the EIA process;*
- c. Technical environmental impact assessments, including baseline studies, input to the design process, and identification and reporting of likely adverse or beneficial significant environmental effects;*

- d. Proposed measures to avoid, reduce or mitigate likely significant adverse effects;
- e. Consultation on a Preliminary Environmental Information Report (PEIR); and
- f. Preparation and submission of the Environmental Statement (ES).’

- 7.3.81 However, there has been very limited change in the proposed Masterplan during the process. The site layout was indicated in the Phase One consultation documents, the Botley West Solar Farm Concept Plan and the Phase One Community Consultation Leaflet, November 2022. The overall layout proposed in the EIA is still very similar.
- 7.3.82 It is also noted that most site fieldwork and reports were undertaken after the publication of the concept plan. LVIA field work started in Winter 2022, Archaeology Geo-physical work took place between March 2023 and August 2024, PRow surveys were conducted between May and August 2024, and Soils were considered between 2023 and 2024. While there have been changes to the Masterplan, these have been very much constraint-driven, such as the removal of Areas of Archaeological Interest and adding standard offsets. There is little evidence that the Masterplan has been revisited for a sense-check (especially after areas of constraints have been removed) or that the Masterplan has been looked at in any detail in how it could be changed to reduce the impact of the proposed scheme.
- 7.3.83 There is further concern about the LVIA work and how this underplays the impacts of the scheme. Without taking these concerns into account, the OHAs are unsure of how the LVIA work has been used to inform the scheme Masterplan, especially for location of solar arrays. There has been little adjustment to the layout of solar arrays in reference to where impacts including significant impacts have been found to reduce Landscape and Visual effects.
- 7.3.84 This issue was touched on in VWHDC’s response to the PEIR where it indicated that *‘the layout of the scheme does not indicate that there has been much modification to the design of the scheme to minimise impacts in response to receptors and constraints. For example, small areas of solar panels within the southwestern area of the site either side of the footpath and adjacent to the ancient woodland are retained rather than a broader look at the project at a landscape and project scale to see if it would be more appropriate not to include these small areas of solar. Again, small areas of solar arrays are formed once servicing constraints are added south of Denman’s Farm. It may be more appropriate due to the proximity to the PRow and the residential property not to have these small areas under solar panels.’* There does not seem to have been a review of the masterplan in response to these comments.
- 7.3.85 Another example of this is the area around Stratford Lane and the B4027, Illustrative Masterplan Figure 2.1B North Site Area 2 of 2 [APP-062]. This illustrates that the Masterplan should be revised to reduce the impact of the scheme.

- 7.3.86 Extract from Figure 2.1B Illustrative Masterplan Northern Site Area 2 of 2 [**APP-062**]:
The removal of areas of land due to archaeological constraints, has left two small areas of solar either side of PRow 416/24/10, and a small area of solar to the south on the higher land. The Masterplan proposes a new cycle link through this area to connect to the National Cycle Route, which runs through the centre of the northern site area.
- 7.3.87 Section 8.9.162 of the EIA [**PDB-006**] covers representative Viewpoint 8: View looking southeast from footpath 416/24/10, near Hordley House. It states a part of the northern site would be visible on top of the pronounced ridgeline across the view. Solar panels would appear as a single row over the ridge. However, the viewpoint description does not describe the impact on the rest of the footpath as it passes through the middle of the solar panels.
- 7.3.88 Section 8.9.168 [**PDB-006**] Representative Viewpoint 11: View looking west from bridleway 379/10/20 (Clause Duval Way). The LVIA states that solar panels would occupy rising ground to a ridgetop in the middle view. The OHA queries whether the assessment of the viewpoint is correct. If it is a high sensitivity user with a noticeable change, then the impact would be higher than Moderate and would be Significant.
- 7.3.89 The above examples illustrates that if the Masterplan was looked at holistically after constraints were added, more isolated areas of solar panels which are prominent in views from PRow, that have PRow routes passing through them or adjacent to them, and often on higher ground should have been removed to better balance provision against impact.
- 7.3.90 The Masterplan therefore needs to be revisited and revised to reduce the impact of the scheme in numerous areas, including other areas with similar concerns with regards to locations of solar panels such as Bladon, Worton Heath, the Priory Area east of Begbroke, east of Pinsley Wood, south of Church Hanborough, north of Cassington / Yarnton Road and east and west of Cumnor Road.
- 7.3.91 The issues listed above and in the LUC report, are a review to highlight those areas that make no sense in master planning terms. This list is not exhaustive as the LVIA does not present an assessment of the site that can be used to assess the full appropriateness of the Masterplan in Landscape and Visual terms.

Denman's Farm

- 7.3.92 Section 5.6 of the EIA [**APP-042**] covers site location and scale and paragraph 5.6.15 says *'After negotiations with many other landowners in the area, the Applicant secured land at Denman's Farm, immediately under the 400kV line to the west of Botley'*.

However, it does not necessarily follow that the offered land is suitable for solar development. With regards to the Denman's Farm area, the proposed solar development in the Vale is predominately on open exposed slopes in the Greenbelt, which the VWHDC do not assess as suitable for solar development due to the harm to the open and rural landscape character and impact on views.

7.3.93 This is supported by the comments from Cultural Landscapes and Historic Gardens Committee of ICOMOS-UK (International council on monuments & sites) **[RR-0413]** - '3. South Solar Farm, SE of Farmoor Reservoir:

7.3.94 *(2km E-W; 0.7 km maximum width; substation with access to overhead power line which crosses this site.)*

7.3.95 *At least half of this proposal is on exposed north facing arable slopes, which would be highly visible, almost certainly also being obvious from Farmoor Reservoir recreation area. All the area is in an important part of Oxford's Green Belt related to Oxford City and University, visible from footpaths above or below, useful to the population of the nearby city, being accessible by bus. This South site is a totally unsuitable place for a solar farm and should be omitted from the proposal. Care will need to be taken over the siting of and screen planting around the substation connecting to the overhead line.'*

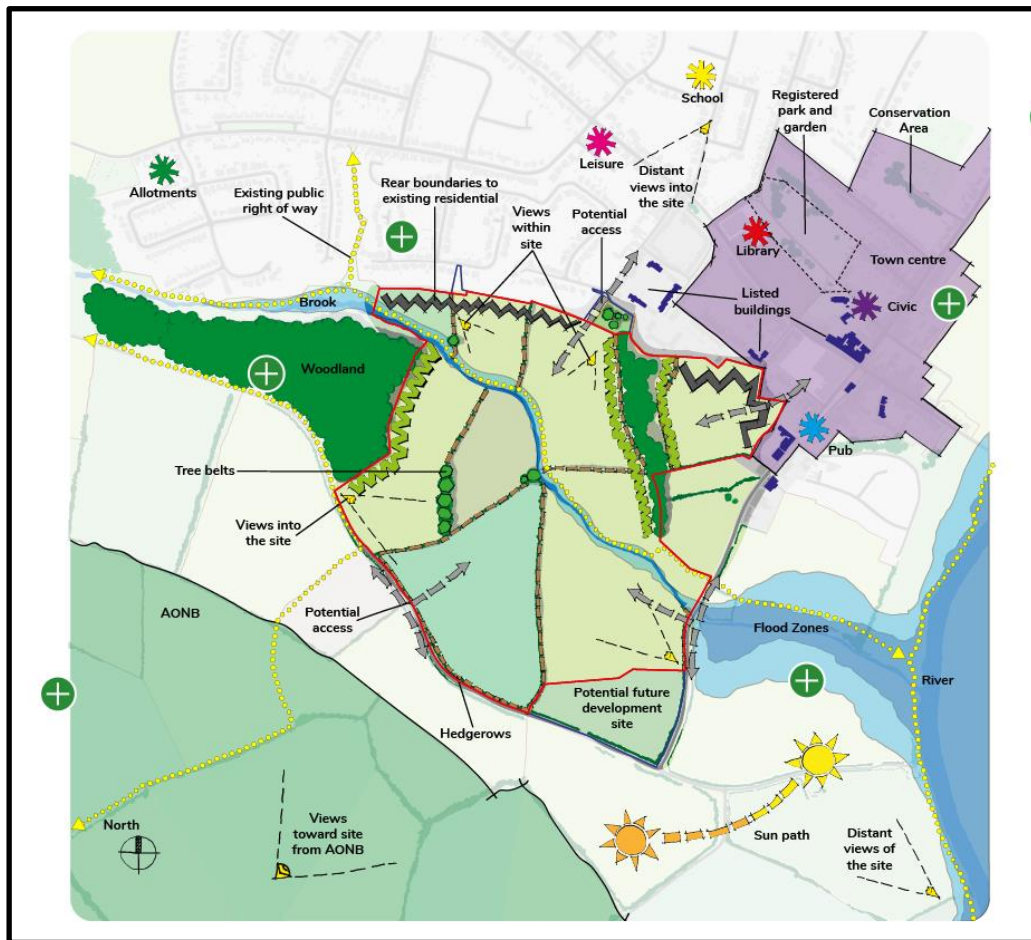
7.3.96 Furthermore, the emerging evidence base of the South Oxfordshire and Vale of White Horse Joint Local Plan 2041 includes suitable broad locations for renewable energy schemes, including ground-mounted solar on the Emerging Policies Map and under the CEQ Climate and Environmental Quality Evidence Base. It does not, however, indicate capacity for solar development within the proposed development Southern Site area. VWHDC therefore request the Masterplan is revised to remove all solar from its area.

Constraints & Opportunities Plan

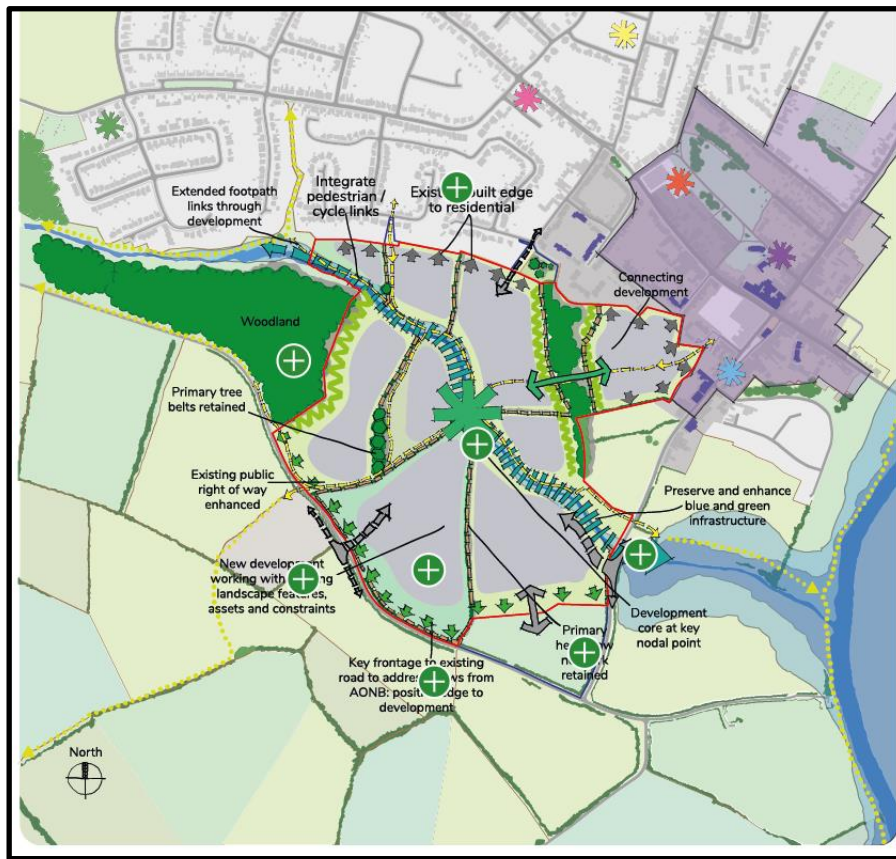
7.3.97 The Government's National Design Guide (last updated June 2021) covers the importance of understanding the context of development including issues relating to the site, its local and wider context. This is covered in the Vale of White Horse and South Oxfordshire Joint Design Guide, "Place and setting" chapter.

7.3.98 The chapter covers the importance of undertaking a contextual analysis, which looks beyond the red line of the application site to create a Constraints and Opportunities plan for a development, (Landscape Figure 2). This can then be developed into a design rationale (Landscape Figure 3), which uses the site's features and context to shape the design. The OHA suggest that a Constraints and Opportunities plan is prepared outlining landscape and visual sensitivities to inform and shape the design and mitigation, as this is not covered in the submitted Landscape Resources Plan **[APP-081]**.

Landscape Figure 2 - Illustrative example of a constraints and opportunities plan (extract from the Joint Design Guide)



Landscape Figure 3 - Develop a design rationale based around site features, opportunities and constraints (extract from the Joint Design Guide)



Project Elements and Design

7.3.99 Information on the project elements and design have been provided in Chapter 6 Project Description [APP-043] but questions regarding appearance, design and impact remain. The following paragraphs provide some examples:

- EN-3 (paras 3.10.32 & 3.10.90) requires the impacts of security measures such as fencing and lighting to be assessed and minimised. The ES provides insufficient detail of fencing and lighting, but it is assumed that different types of fencing are required such as security fencing around buildings compared to the proposed deer fencing for the wider scheme. Further detail on these design choices should be provided, and their impacts assessed. In point 3.2.2 of the Scoping Opinion [APP-126], “Night-time assessment during all phases” it states ‘*In the absence of such information the Inspectorate is not in a position to scope this matter out at this stage. The ES should describe the nature of the lighting strategy for all stages of the development and assess any significant effects where they are likely to occur.*’ Limited information has been provided about the use and impact of lighting during the construction and decommissioning phase including the movement of vehicles and the effect of this on Landscape Character and Visual Amenity.

- The development seeks to connect to the grid, which requires additional infrastructure including an additional substation that is not part of this application. This is recognised, but it is important that the impacts of all elements related to this development are assessed comprehensively to understand the landscape and visual impact of the development on the area and potential cumulative impacts.
- There is concern relating to the uncertainty of the requirements for the grid connections. This is a large and major component of the application, and the expected infrastructure and grid connections associated with the project should be included to allow the cumulative impacts of the structures to be assessed. Information provided about the appearance of the grid connection is limited, but these are often very industrial in appearance. It is also noted from other recent solar applications in Oxfordshire, that Battery Energy Storage Systems (BESS) are often included or followed closely after, such as southwest of Cowley Substation, Nuneham Courtenay, Oxford, OX44 9PA. If battery storage is expected to be associated with this project, the cumulative impacts of this should also be covered in the ES, especially due to its greenfield, rural and greenbelt location.
- Four main temporary construction compounds are being proposed across the area. The appearance of the compound areas is not explained in detail, but they are large (approximately 100x100m and 100x200m) and will comprise structures and material storage secured by fencing, lighting and CCTV. The project description states ([APP-043] para 6.3.4) that these compounds are proposed to remain in place after construction albeit being taken over by solar panels. It is therefore important to understand their appearance and related impacts.

7.3.100 Project design is particularly relevant as the Temporary Facilities Plans [APP-229] suggest that the majority of the temporary construction compounds are placed in highly visible locations. For example, the southern compound appears to be sited on a slope and thus is likely to require levelling of the land, which in turn is likely to increase its impact in landscape character and views. It is unclear whether and how this has been fully assessed in the LVIA and how the findings have informed the siting and design of the compounds.

7.3.101 EN-1 paragraph 4.7.7 requires projects to be designed carefully taking account of the potential impact on the landscape. Further detail on the siting, design and impact of each of the compounds should be provided.

7.3.102 Information on cable laying methods ([APP-130] appendix 6.2: cable laying methodology and indicative HDD crossing locations) has been provided, but the impact of this method on the locations is still insufficiently clear. The safeguarded areas are of large extent in places and limited information has been provided about the compounds on either end of the drilling holes. The OHA are concerned that these

could adversely affect local character and views, for example through the loss of mature vegetation. The entrance and exit hole compounds are shown on the plan, but with the burial depth varying between 1.5m to 30m (para 6.3.11), it is not clear how the location of the compound has been determined at this stage. It is also unclear whether any ancillary structures such as cabinets or fencing will remain after construction.

7.3.103 Further information should also be provided on decommissioning, i.e. what exactly it will entail and what mitigation planting and land use changes introduced as part of the development will remain in place to deliver long-term landscape benefits. EN-3 states to this respect: *“Applicants should set out what would be decommissioned and removed from the site at the end of the operational life of the generating station, considering instances where it may be less harmful for the ecology of the site to keep or retain certain types of infrastructure, for example underground cabling, and where there may be socio-economic benefits in retaining site infrastructure after the operational life, such as retaining pathways through the site or a site substation.”* (para 2.10.69).

7.3.104 Further information should include details on the removal of the piling to better understand any potential impact of this might have on landscape character and views.

Mitigation

7.3.105 Mitigation measures are listed in the LVIA [**PDB-006**] (table 8.20), the *Illustrative Masterplan* [**APP-062**] and the *Landscape, Ecology and Amenities Plan* [**APP-228**]. Mitigation comprises hedgerow reinforcement and planting, meadow grasslands, planting of individual trees and of woodland blocks, but it does not include substantial changes of the extent or layout of the development. There are no obvious differences in the layout between the Illustrative Masterplan in the PEIR and the current Masterplan except the addition of the archaeological areas.

7.3.106 As already outlined above, the LVIA does not explain how information from the local landscape character assessments apply to the site, and it is therefore not clear how mitigation measures have been chosen for each location. Whilst many of the suggested measures are appropriate in general terms, it is important that the right measure is chosen for the right place to ensure that mitigation is in keeping with the local character. In some places the proposed planting of trees or hedgerows can adversely affect landscape character and views. For example, the photomontage for VP 23 and 54 shows how the proposed planting will fundamentally change the character of the view from open to enclosed, adversely affecting the experience of the PRow users. Mitigation in other locations is likely to have a similar effect on the landscape and users of public rights of way (PRow).

7.3.107 The effects on PRowS are of particular concern as they are an important recreational resource for existing and future residents from within and outside the area. EN-3 states

in para 2.10.43: *“Applicants are encouraged where possible to minimise the visual impacts of the development for those using existing public rights of way, considering the impacts this may have on any other visual amenities in the surrounding landscape.”*

- 7.3.108 It is important that the impact of mitigation measures on views and landscape character is also considered in the LVIA assessment. Many available views are large-scale over the wider landscape and screening a view so that solar panels or other development cannot be seen can also have an adverse effect, as the landscape-scale view is no longer obtainable. This potential impact of mitigation should be covered and factored into the assessment of views. The OHAs currently do not see that there has been assessment on how mitigation to prevent seeing the solar panels, impacts on the ability to enjoy the changing views of the landscape within the EIA.
- 7.3.109 The development will by its scale and nature adversely affect the experience of public rights of way users travelling through the area. In many locations PROW users will either travel through large areas of solar infrastructure or walk through corridors of hedgerows or tree belts with no or limited views of the surrounding landscape.
- 7.3.110 The OHAs raised numerous concerns in relation to the visual assessments in their comments on the PEIR and in their RRs ([**RR-0164**], [**RR-0793**], [**RR-1086**] and [**RR-1102**]). It is likely that the LVIA is underestimating the impacts on several PROWs, partly because it insufficiently recognises the length of PROWs affected and by overestimating the effectiveness of mitigation planting.
- 7.3.111 Other measures to reduce impacts on PROWs such as by removing areas of solar panels where, in several locations, impacts are then limited to only one side of the PROW rather than both sides (e.g. near 8, 16, 21-23, 33, 51) should also be adopted.
- 7.3.112 There also appears to be limited joined up thinking and coordination between mitigation measures required for different topic areas. For example, archaeological areas could potentially also act as sky lark plots. Woodland creation and links between existing woodland blocks could support bat mitigation and enhance the landscape character.
- 7.3.113 The OHAs consider the proposed mitigation does not match the scale and impact of the development. As outlined in OCC’s comments on the PEIR, councils encourage a landscape-scale approach to be adopted, that offers a more holistic approach to mitigation that matches the scale of the development, e.g. by creating substantial links between habitats and woodlands, maximising benefits for biodiversity and infrastructure (informed by the ecological survey information and the emerging Local Nature Recovery Strategy) and maximising opportunities to expand and improve the PROW network. This is in line with EN-3 which encourages applicants to

consider and maximise opportunities to facilitate enhancements to the public rights of way and the inclusion, through site layout and design of access, of new opportunities for the public to access and cross proposed solar development sites ... (paragraph 2.10.44).

- 7.3.114 Considering the scale of the development, the OHAs would like to see a more ambitious approach to mitigation that is informed by LVIA work and which goes beyond planting linear features that screen the development from particular viewpoints, but which delivers real benefits for nature and people, and enhances the local landscape character.
- 7.3.115 The OHAs consider it important that, in line with the mitigation hierarchy, adverse effects on landscape character and views are avoided in the first instance, e.g. by avoiding sensitive slopes, before considering mitigation.

Impacts on residential areas and communities

- 7.3.116 Adverse effects on residential areas and heritage areas and their setting are also of concern. As outlined in the LUC report in Appendix 1 there appears to be no consideration of local communities as a visual receptor despite the ZTV indicating theoretical visibility from the edge of settlements within the study area (e.g. Wootton, Woodstock, Kidlington, Long Hanborough, Cassington, Freeland, Eynsham, Bladon, Farmoor and Cumnor). EN-3 states in paragraph 3.10.88 that applicants should carry out landscape and visual assessment and that visualisations may be required to demonstrate the effects of a proposed solar farm on the setting of heritage assets and any nearby residential areas of viewpoints. The LVIA does not state why these have been scoped out and, given the scale of the Proposed Development and the number of settlements surrounding the Site, the exclusion of local communities is an erroneous omission.
- 7.3.117 This is particularly relevant as the LVIA also scopes out the need for a Residential Visual Amenity Assessment (RVAA) despite this being requested by the Inspectorate in the Scoping consultation. LUC questions the applicant's approach and justification for not carrying out a RVAA in their review in Appendix 1 paragraphs 2.41-2.42. The impact on settlements and their communities are therefore not considered to be adequately considered in the LVIA.
- 7.3.118 The DCO application ([**PDB-006**] page 15) proposes a standard minimum buffer of 25m to adjacent residential areas, however, this distance does not appear to be informed by any assessment work, and the justification for this approach is not clear. The OHA consider this approach too simplistic and believe that the distance and treatment of buffers should be determined on a site-by-site basis and informed by assessment work.

Impacts on vegetation

- 7.3.119 Cable trenches, construction compounds and access points have the potential to cause the loss of existing characteristic vegetation including mature trees and hedgerows. Such losses have the potential to significantly affect local character and views not only during construction but also in the long-term as mature vegetation cannot be readily replaced by new planting.
- 7.3.120 EN-3 states in para 2.10.101 *“The impact of the proposed development on established trees and hedges should be informed by a tree survey and arboricultural/ hedge assessment as appropriate”*
- 7.3.121 Impacts on vegetation are proposed to be addressed through *Strategic Arboricultural Impact Assessment and Method Statement* [**APP-145-148**], however, this provides insufficient detail about the retention and removal of trees and hedgerows to allow a judgement on related impacts.
- 7.3.122 The draft DCO ([**APP-015**] article 38 (felling or lopping of trees and removal of hedgerows)) suggest that vegetation removal can take place without requiring further consent. If this is the case, it is important that vegetation removal is sufficiently understood and mitigated prior to consent being given. If this is not possible the DCO consent should be clarified, and processes put in place to ensure any vegetation loss is agreed with the relevant parties prior to any works being carried out. This should clearly relate to hedgerow removal plans and AIA, and this must also include vegetation removal or works to facilitate wider highways and access works.

Cumulative Effects

- 7.3.123 The OHA have previously voiced their concerns about the cumulative impacts in their comments to the PEIR and RR ([**RR-0164**], [**RR-0793**], [**RR-1086**] and [**RR-1102**]).
- 7.3.124 GLVIA3 para 7.4 states that the scope of cumulative landscape and visual effects should be agreed at the outset, in discussion with the competent authority and consultation bodies. An agreement has not taken place to date, and OHAs remain concerned about the cumulative effects of the development with other solar farms and major developments in the area.
- 7.3.125 These concerns don’t only relate to direct effects between the development and other schemes but also to the impact on the landscape and PRowS as a recreational resource for existing and future residents and visitors.
- 7.3.126 The LUC review in Appendix 1 includes a section on cumulative effects (paras 2.56 – 2.58). In this it states that whilst the proposed schemes included in the cumulative assessment seem appropriate, the location of the schemes are not clearly presented in a mapped figure. It also highlights that the cumulative assessment only seems to consider cumulative interactions between the Proposed Development and each

cumulative project on its own, rather than all the cumulative projects at the same time. This approach could potentially downplay the extent of cumulative effects, as it does not consider the full scenario, whereby multiple projects may co-exist in the landscape.

7.3.127 LUC therefore requests in its conclusions (paragraph 2.68) that the assessment methodology is revisited to ensure that *“the assessment of cumulative effects considers the full scenario, whereby multiple projects may exist in the landscape.”* It is further requested in the same paragraph *“that a mapped figure illustrating the locations of the schemes considered in the cumulative assessment is provided.”* (para 2.68). The OHAs support these requests.

7.3.128 The OHAs consider it important that all impacts related to the development are considered cumulatively and comprehensively. This also applies to the development itself, which effectively comprises four developments (the northern, central, southern site, and the substation). The need for a comprehensive assessment of all related structures also remains important, even if the NGET substation was to be moved outside the site boundary.

Landscape Management

7.3.129 The LVIA states that landscape management would be required for a period of five years (paragraph 8.9.259), which is wholly insufficient and in stark contrast to the approximately 40 years lifespan of the proposal and with the 30 years management referred to in the LEMP. Woodland creation and hedgerow establishment require long-term management to provide long-term benefits.

7.3.130 Ongoing landscape management will be fundamental to the success of this mitigation and would need to extend to the 40-year lifespan of the project. This will need to be embedded in the relevant control documents and, afterwards, implemented through contractual obligations and monitored to check that they meet the requirements.

Ease of access and presentation of the documentation

7.3.131 The information in the Landscape Chapter of the ES is presented in a way that makes it difficult to follow the submitted information, and cross-referencing between multiple sets of information is required to be able to look at the submitted information.

7.3.132 For example, the Representative Viewpoints: The location of these is given on the Representative Viewpoints Figure Number 8.11. This uses 1:50,000 as base mapping, which makes it difficult to see the exact locations of these Representative Viewpoints on the ground. The 1:50,000 mapping also gives limited information with regards to field boundaries and other landscape elements. The use of 1:25,000 mapping as a base map would therefore be preferable as it is easier to follow even if it is not to scale.

- 7.3.133 The ZVT shading on plans makes it hard to follow the PRow network in and adjacent to the site. There are no plans where the viewpoints are shown on the Masterplan layout to help understand what can be seen in the Representative Viewpoints. Due to the scale of the application, it is difficult to cross-reference plans to understand how viewpoints relate to the site layout.
- 7.3.134 There are no plans in the landscape package which clearly illustrate the existing and proposed Rights of Way (by type) including associated PRow numbering, which are referred to in the text. While a numbered PRow plan is given in Figure 17.5, there is no plan where this information is projected on the Masterplan to aid understanding of the Representative Viewpoint locations. Whilst Representative Viewpoints are presented on a 1:50,000 plan extract, they do not contain the scheme layout to aid understanding of the view. Mapping at 1:50,000 also does not aid with the understanding of field boundaries, as the viewing arrow is small and does not illustrate the extents of the view on the photograph.
- 7.3.135 Photomontages do not contain a map extract to aid their understanding and illustrate the section of view shown and how that relates to the site layout.

Conclusion on Landscape and Visual Impact Assessment

Impact – **Negative.**

- 7.3.136 The OHA consider the proposal for BWSF is not acceptable in landscape and visual terms. For the reasons outlined above the OHA lack confidence in the adequacy and accuracy of the LVIA and hence the Masterplan and consider the impacts of the development on the local landscape character and views to be underestimated. More detail and a revision of the LVIA is required in line with the recommendations in the LUC report in Appendix 1 to address the issues raised.
- 7.3.137 As part of the Development Consent Order process, the LVIA, EIA and associated documents should be revised to cover the impacts of the proposed development and then be used to assess the acceptability of the development and to help shape an amended Masterplan to reduce its impact.
- 7.3.138 The OHA consider that following the revision of the application documents, many areas of solar panels need to be removed from the proposed development to prevent significant landscape harm.
- 7.3.139 VWHDC request that the proposed Southern Site in their district be removed from the application.
- 7.3.140 WODC have previously indicated a number of locations that should be excluded from development to minimise harmful landscape and visual impacts including sloping land

to the west of Lower Road, the sloping sides of the Evenlode valley, rising ground to the north of Cassington and land to the south of Bladon Conservation Area

- 7.3.141 As this is a larger scale project over multiple areas, the EIA needs to acknowledge this and cover these impacts in sufficient detail for all areas so the journey from baseline to the Masterplan can be clearly understood and the scheme designed to minimise its impact.

7.4 Ecology, Nature Conservation and Trees

Summary

- It is not clear how ecological surveys have informed the design of the scheme including layout and mitigation.
- The OHA believe that the surveys and assessment submitted to date with regards to bats, otters and water vole, great crested newts, 'the lake effect', nature recovery, woodlands and BNG are not sufficient to consider the full impacts related to each of these receptors/issues. There is also a need to improve the enhancement methods proposed within the submitted documentation.
- There has been insufficient avoidance, mitigation and compensation methods for farmland birds.
- The proposed cabling routes appear to significantly impact the Root Protection Areas of multiple trees
- The applicant has not justified why such wide-ranging powers to remove trees and hedges within the scheme as described in article 38 and 39 of the DCO are justified.

Mitigation / Improvements

- The OHA require further survey work to be carried out in relation to bats, otters and water voles.
- A detailed arboricultural survey needs to be carried out for the whole site. This survey needs to feed into the Arboricultural Impact Assessment. There should be a minimum buffer around ancient and veteran woodland, and this should be in line with Natural England and Forestry Commission Guidance.
- The proposed development needs to deliver BNG for watercourses as well as woodland connectivity and expansion.
- The OHAs require additional enhancement/mitigation measures to be provided in relation to bats, otters and water voles, great crested newts, farmland birds, nature recovery and ancient woodlands.
- A legal agreement needs to be put in place to provide for offsite mitigation as well as the ongoing monitoring and management of all proposed enhancement and mitigation measures.
- The applicant needs to indicate which method of Great Crested Newt licensing they will be pursuing.

- Cable routing should avoid the Root Protection Areas of all trees within and adjacent to the site boundary.
- Individual tree protection plans must be provided for all the sites.
- Article 38 and 39 of the DCO should include the need for prior approval of the host authorities for all tree and hedge removal within the site.

Key Policies / Compliance

Table 7 - Development Plan policies relevant to Ecology, Nature Conservation and Trees

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP ESD10: Protection and Enhancement of Biodiversity and the Natural Environment	Conflict identified
Vale of White Horse	LPP1 CP44: Landscape LPP1 CP45: Green Infrastructure LPP1 CP46: Conservation and Improvement of Biodiversity LPP2 DP30: Watercourses CNP RNE1: Green Infrastructure	Conflict identified with CP44, CP45, CP46 and RNE1.
West Oxfordshire	EH2 – Landscape Character EH3 – Biodiversity and Geodiversity EH4 – Public Realm and Green Infrastructure	Conflict identified
Oxfordshire County Council	Tree Policy for Oxfordshire: Policy 11 Policy 14 Policy 16	Conflict identified

Policy Detail

- 7.4.1 Policy ESD10 of CLP: Protection and Enhancement of Biodiversity and the Natural Environment. Of particular relevance to this application this policy seeks: net gains in biodiversity; to protect existing trees and increase the number of trees; the reuse of soil; and the provision of new and preservation of existing features of nature conservation value. Development that would result in significant and unavoidable harm which cannot be adequately mitigated or (as a last resort) compensated will not be permitted. Damage or loss will not be permitted unless the benefits clearly outweigh the harm.
- 7.4.2 Policy CP44 of LPP1 seeks to protect key features that contribute to the nature and quality of the Vale of White Horse District's landscape from harmful development.

These key features include features such as trees, hedgerows, woodland, field boundaries, watercourses, and water bodies. Policy CP45 of LPP1 confirms that a net loss of Green Infrastructure, including biodiversity, through development proposals will be resisted.

- 7.4.3 Policy CP46 of LPP1 requires development to avoid adverse impacts on valuable ecological receptors (priority habitats, protected species, designated sites, etc.) and secure net gains for biodiversity. Where impacts are predicted, proposals must meet the tests outlined under policy CP46 (related to need, benefit, and reasonable alternatives) to be acceptable. Net losses to biodiversity will not be supported.
- 7.4.4 Policy DP30 of LPP2 seeks to protect the district's watercourses and requires new development to be buffered from watercourses by a minimum of 10 metres. Culverting of watercourses is not supported and opportunities to de-culvert sites should be explored.
- 7.4.5 Policy RNE1 of CNP also confirms development proposals should protect, and where possible enhance, valued landscapes, sites of biodiversity or geological value and soils.
- 7.4.6 WOLP Policy EH2 requires that the quality, character and distinctiveness of West Oxfordshire's natural environment, including its landscape, cultural and historic value, tranquillity, geology, countryside, soil and biodiversity, will be conserved and enhanced.
- 7.4.7 Policy EH3 requires that the biodiversity of West Oxfordshire shall be protected and enhanced to achieve an overall net gain in biodiversity and minimise impacts on geodiversity, including by:
- giving sites and species of international nature conservation importance and nationally important sites of special scientific interest the highest level of protection from any development that will have an adverse impact;
 - requiring a Habitats Regulations Assessment to be undertaken of any development proposal that is likely to have a significant adverse effect, either alone or in combination, on the Oxford Meadows SAC, particularly in relation to air quality and nitrogen oxide emissions and deposition;
 - protecting and mitigating for impacts on priority habitats, protected species and priority species, both for their importance individually and as part of a wider network;
 - avoiding loss, deterioration or harm to locally important wildlife and geological sites and sites supporting irreplaceable habitats (including ancient woodland, Plantations on Ancient Woodland Sites and aged or veteran trees), UK priority habitats and priority species, except in exceptional circumstances where the

importance of the development significantly and demonstrably outweighs the harm and the harm can be mitigated through appropriate measures and a net gain in biodiversity is secured;

- ensuring development works towards achieving the aims and objectives of the Conservation Target Areas (CTAs) and Nature Improvement Areas (NIAs);
- promoting the conservation, restoration and recreation of priority habitats, ecological networks and the protection and recovery of priority species populations, particularly within the CTAs and NIAs;
- taking all opportunities to enhance the biodiversity of the site or the locality, especially where this will help deliver networks of biodiversity and green infrastructure and UK priority habitats and species targets and meet the aims of CTAs;

7.4.8 The following policies within the OCC Tree Policy for Oxfordshire, are applicable where impacts are proposed to OCC trees (including highway trees).

Policy 11: The County Council will retain and maintain existing, healthy OCC trees and removal will only be considered for the following reason(s):

- Dead, dying and / or dangerous
- Proven to be causing significant structural damage
- Considered by the Tree Service to be an inappropriate species for the location.

Or:

- When removal is required as part of an agreed tree management programme.

Policy 14: The County Council will seek compensation from any organisation or individual requesting removal of any public tree(s) related to an approved planning application that are the responsibility of the County Council.

Compensation will be determined as calculated by Capital Asset Valuation of Amenity Trees (CAVAT).

Policy 16: All organisations, companies or operatives must be able to demonstrate adherence to national guidelines and standards related to the protection and retention of trees listed in the reference and supporting documents section of this policy when working on land owned by the County Council; under the responsibility of the County Council; or within the Public Highway of Oxfordshire. When working near to or under trees, this must be referenced in their relevant method statements.

Reference & Supporting Documents

- BS 3998:2010 – Tree Work: Recommendations (or as revised)
- BS 5837:2012 – Trees in relation to design, demolition and construction (or as revised)

- BS 8545:2014 – Trees from nursery to establishment in the landscape (or as revised)
- Oxfordshire Street Design Guide
- Application of Tree Policy Guidance (or as revised)
- Manual for Streets
- Highways Act (or as revised)
- Common sense risk management of trees (FCMS024)
- Roots and Routes: Guidelines on Highways Works and Trees
- Joint Mitigation Protocol
- National Planning Policy Framework (NPPF)
- National House Building Councils Standards - Chapter 4.2 (or as revised)
- NJUG Publication Volume 4: Issue 2 (or as revised)
- National Tree Safety Group (NTSG) - Risk Limitation Strategy
- Forestry Commission - Operations Note 051
- Capital Asset Valuation of Amenity Trees (CAVAT)
- Oxfordshire Together (OxTog)
- Urban tree selection may be aided by Trees and Design Action Group (TDAG)

Commentary

- 7.4.9 Given the very large area of the proposed development, it constitutes a landscape scale change which cannot fail to have an impact on ecology and biodiversity. There is little research on the impact of solar farms of this scale on species in the UK and therefore a precautionary approach should be applied when considering how best to avoid or mitigate negative effects.
- 7.4.10 Whilst it is welcomed that the application seeks to deliver biodiversity net gain, a key principle of biodiversity net gain is that it does not change the protection afforded to biodiversity, therefore the legislation and policy considerations with regard to irreplaceable habitats, designated sites, local wildlife sites, protected species, ecological networks and priority habitats and species still apply.
- 7.4.11 Ecological survey over this significant area of Oxfordshire has highlighted the presence of some important species for the County, most notably the presence of maternity roosts for Bechstein's bats (a rare species listed under Annex II of the Conservation of Habitats and Species Regulation 2017, which has not previously recorded breeding in Oxfordshire) and barbastelles (also an Annex II species), as well as the presence of dormice and nightingale which are very rarely reported in Oxfordshire. These are exciting records for the County, and whilst it is likely that many of the important species found can be accommodated alongside the scheme (with the exception of farmland birds, especially skylarks), for many of the species found, it is not apparent how the ecological surveys have informed design of the scheme to avoid, mitigate or compensate for impacts and provide species-relevant enhancements. We also have

concerns that the aquatic environment, both in terms of habitat and species it supports, has been somewhat overlooked in the assessment and project design.

7.4.12 Regard should be had to the Relevant Representation of the Environment Agency [**RR-0308**] and Natural England [**RR-0761**], and Natural England's Procedural Deadline A Submission in relation to outstanding bat survey information and mitigation measures [**PDA-009**].

Table 8 - Summary of ecological issues

Ecological Issue	+/- Impact*	Adequate survey and assessment submitted	Further mitigation needs	Further enhancement needs	Changes required
Bat populations of national importance	-ve	No	Dependant on outcome of surveys – as a minimum commuting and foraging habitats need to be protected and buffered.	Woodland and hedgerow management and expansion to link up habitats in line with emerging LNRS priorities	Further survey to inform mitigation and enhancements which then need to be included in Masterplan, oCCoP [APP-232-233] oLEMP [APP-235] and management and monitoring secured through legal agreement.
Otter and water vole	-ve	No	Unknown without survey data	Enhancements of watercourse habitats (currently excluded from BNG metric)	Survey required to inform mitigation and enhancements which then need to be incorporated into, oCCoP, oLEMP and Masterplan and management and monitoring secured through legal agreement.
Great crested newts	-ve	No	Recommend use of NatureSpace District Licence Scheme	Onsite enhancement through provision of ponds and terrestrial habitat	Clarification of the licencing route to be used. The District licence would need appropriate wording in DCO requirements. Onsite enhancements need to be incorporated into the Masterplan and oLEMP and management and monitoring secured through legal agreement.

Ecological Issue	+/- Impact*	Adequate survey and assessment submitted	Further mitigation needs	Further enhancement needs	Changes required
Farmland birds (in particular skylarks)	-ve	Yes	Current proposed mitigation not adequate – off site compensation likely required	Enhancements could also be possible offsite	Off-site compensation needs to be secured by legal agreement
Assessment of 'lake effect' during operation on wetland birds and aquatic invertebrates	-ve	No	Unknown without assessment	-	Assessment needed and resulting mitigation measures incorporated into plans
Nature recovery	-ve	No consideration of emerging LNRS, including draft measures	Yes	Potential to contribute to some of the priorities identified in the draft Oxfordshire LNRS	Further enhancements included within the Masterplan to reflect priorities and measures in the emerging LNRS
Ancient Woodlands	-ve	Partially (see comments regarding ancient and veteran trees)	Larger buffers (e.g. 50m+)	Woodland management and expansion to link up woodlands in line with emerging LNRS priorities.	Mitigation and enhancements included in Masterplan, oCCoP [APP-232-233] and oLEMP [APP-235] and management secured through legal agreement.
BNG	/	No	-	Demonstration of net gain in watercourse units is needed to achieve overall biodiversity net gain. Greater grassland habitat diversity, expansion of woodlands and measures for species are recommended.	Watercourse metric calculation needed, BNG management and monitoring needs to be secured through LEMP and 42 yr legal agreement
Wider environmental net gains	/	No	-	-	A statement demonstrating how opportunities for delivering wider environmental net gains have been considered and incorporated into

Ecological Issue	+/- Impact*	Adequate survey and assessment submitted	Further mitigation needs	Further enhancement needs	Changes required
					proposals as part of good design.
Dormice		Yes	Yes (see Natural England advice on page 11 [RR-062])	Woodland and hedgerow management and expansion to link up habitats in line with emerging LNRS priorities and mapping	Enhancement measures included in Masterplan, oCCoP [APP-232-233] and oLEMP [APP-235] management and monitoring secured through legal agreement.
Nightingale	/	Yes	-	Woodland and scrub management and expansion in line with emerging LNRS priorities	Enhancement measures included in Masterplan and oLEMP [APP-235] and management and monitoring secured through legal agreement
Management and monitoring	/	-	-	-	Clarification within the oLEMP [APP-235] that ecological management and monitoring will be undertaken for the lifetime of the project as a minimum. Section 106 agreements needed to secure management and monitoring.

*-ve impacts includes issues where inadequate information has been submitted, and we therefore cannot conclude otherwise based on the evidence provided.

Adequacy of the application/DCO

Bats

7.4.13 The Bat Survey Report [APP-153] concluded that the assemblage of bats present is of at least national importance, that two Annex II bat species (barbastelle and Bechstein's) use woodlands adjacent to the site for roosting and that the mosaic of habitats within the Zone of Influence is of at least national importance. The assemblage of bat species uses the woodlands and intervening habitats adjacent to,

within and across the site for roosting (including maternity), foraging and commuting, including the River Evenlode as a water source.

- 7.4.14 There is currently only brief information on how these bats could be impacted. There is no assessment of whether the scale of the proposals, with large areas of solar arrays between woodlands, could have a discouraging impact on the movement and foraging of these bat species, and important bat flight lines have not been identified. More information on this aspect is required to provide certainty that these species would not be negatively affected. In particular, buffer widths alongside important flight lines (foraging/commuting routes) such as hedgerows and the treatment of these in terms of habitat creation/management have not been specified. It is also necessary to consider the impact of vibration, noise and lighting during the construction and operation phases.
- 7.4.15 It is noted that OHA concerns regarding identification of key areas for bats and measures to avoid or mitigate impacts are shared by Natural England, who have set out, in detail, concerns around survey approach and baseline data and how this has informed project design, including details of mitigation and enhancement (see pages 4-11 [RR-0761] and [PDA009]).

Otter and water vole

- 7.4.16 In earlier stages of consultation, the OHAs expressed concern about the lack of survey for otter and water vole; the Environmental Statement sets out the approach taken, indicating that there is no need to survey for water vole, as they are considered as a receptor by virtue of assessment of the effects on watercourses (see paragraph 9.6.77 [APP-046]). Otters are considered as a receptor within the Environmental Statement (see paragraph 9.6.78 of Chapter 9 [APP-046]), but no survey has been undertaken to determine their presence or use of the watercourses.
- 7.4.17 The Environmental Statement indicates that it is assumed that otter forage and commute within the project site, and that there may be holts along the river, but there has been no survey to confirm this (paragraph 9.9.195 of [APP-046]). It is recognised that short term disturbance to otter could occur due to noise and vibration during construction (paragraph 9.12.180 of [APP-046]); the assessment of the impact of such disturbance would be better informed if it were understood whether there were otter holts along the river as it passes through the project area.
- 7.4.18 This needs to be considered in relation the protection otters receive under the Conservation of Habitats and Species Regulations 2017. Equally, noise and vibration during construction could disturb water vole, again this needs to be considered in relation to the protection water vole receive under the Wildlife and Countryside Act 1981. This is particularly relevant in terms of HDD crossings of watercourses but could also apply to the installation of solar panels in proximity to watercourses.

7.4.19 The lack of otter and water vole surveys has also been raised by the Environment Agency in its Relevant Representation (see page 55 [RR-0308]).

Great Crested Newts (GCN)

7.4.20 It is noted that only a low population of GCN was recorded in 2 ponds outside the project boundary. Given the presence of low populations nearby (including previous records at City Farm within the Salt Cross Garden Village site), it would be beneficial to improve the habitat for GCN in the scheme area through biodiversity enhancements including the creation of more ponds and connected terrestrial habitats such as woodland, scrub, ditches, hedgerows and tussocky grassland.

7.4.21 Great crested newts exist in metapopulations and move around between ponds during an individual season (in 1 year) and also between years. Newts could be found breeding in a pond one year, but not in the next. This is why Natural England usually require at least four years' worth of absence data for a pond to be considered not to be used by the species (for licensing purposes). A single eDNA survey is therefore not sufficient to confirm absence from a pond. Previous records of presence should be taken into account and a "worst case scenario" approach taken with regard to this species and its potential to move across the site using suitable habitats. Before the DCO is made, thorough consideration must be given to the licensing approach for this development due to its size and potentially significant impact. The Environmental Statement refers to both the potential use of the district licensing scheme and the standard Natural England licence. However, this would need to be confirmed before the DCO can be completed, as the district licensing scheme would require certain conditions to be written into it. Consultation with the NatureSpace Partnership who run the scheme on behalf of the local planning authorities in Oxfordshire should therefore be carried out to explore the use of Oxfordshire County Council's licence (as they cover the whole region).

7.4.22 The district licensing scheme's approach incorporates onsite mitigation where required and also incorporates a proportionate requirement for off-site compensation for delivery by the Newt Conservation Partnership. This is based on a landscape-scale conservation strategy for great crested newts whereby ponds and terrestrial habitats are created in strategic locations to bolster and re-connect existing populations. Even if the district licensing scheme is not used, the proposed solar farm must incorporate the creation of suitable aquatic and terrestrial habitats for great crested newts, which would also provide significant benefits for other species, such as Common toad, Grass snake and Otter, and wider environmental benefits.

Farmland Birds

- 7.4.23 The bird surveys [APP-158] and [APP-159] have identified significant numbers of breeding and wintering farmland birds many of which are red list, or priority or protected species. The breeding bird survey report indicates the breeding bird assemblage to be of County importance, although this is not correctly reflected in the Environmental Statement which assesses the assemblage as being of local importance only.
- 7.4.24 Whilst areas of archaeological importance would be managed as grassland to benefit species associated with farmland, it does not seem likely that the extent of this area will offer sufficient opportunity to offset the loss of farmland habitat to these birds and other farmland species, in particular for skylarks. These grasslands add up to approximately 36 hectares of suitable habitat (if managed appropriately), but they comprise lots of smaller discrete parcels that would be unsuitable for breeding skylarks.
- 7.4.25 Skylark plots are scattered through the panel areas. The purpose of these seems unclear (11.6 of oLEMP [APP-235]). They do not fit with the description and management for AB4 of the Countryside stewardship and management as stated. It is unlikely that skylark plots will be successful in maintaining the breeding population within a solar farm. Skylark plots are not designed to provide nesting sites, but to open up the sward in agricultural settings to increase accessibility to invertebrate prey. Leaving areas unsown within the grassland around the arrays is unlikely to perform the same function as undrilled areas in winter crops (which ensure there are areas which are not too dense or high for skylarks to access). Skylarks require long, unbroken sightlines; but the solar panels reduce the openness of the landscape and therefore reduce the desirability of the area for nesting skylark due to perceived risk of predation. Post construction monitoring of over 100 solar farms in England and Wales found no evidence of nesting skylarks (In Practice, CIEEM Issue 117, Sept 22). It is therefore considered likely that the construction of the new solar farm would result in the loss of the local skylark population. This would have a significant impact on a priority species.

Ancient Woodlands (Habitat)

- 7.4.26 There are several Ancient woodlands within and adjacent to the site; ancient woodlands are irreplaceable habitats, and any deterioration of these habitats must be for wholly exceptional reasons and unavoidable. Current mitigation measures state a minimum of a 15m buffer will be retained to ancient woodland areas in line with NE guidance however it should be noted that The Woodland Trust recommends at least a 50m buffer (Planning for ancient woodland: planners manual for ancient woodland and veteran trees, July 2019) unless otherwise justified. This is best practice to reduce the impact of edge effects and given the presence of Annex II bat species associated with woodland (maternity roosts for both Bechstein's and Barbastelle bats) and uncertainty of the impact of a solar farm of this scale next to Ancient woodland any deviation from best practice should be fully justified.

Trees

- 7.4.27 An assessment of the impacts of the proposed development on ancient and veteran trees is essential. Section 193c of the NPPF states *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.*
- 7.4.28 The OHA have reviewed the Strategic Arboricultural Impact Assessment & Method Statement Parts 1-4 [**APP-145**, **APP-146**, **APP147** and **APP148**], but consider this to be inadequate.
- 7.4.29 The proposed development covers a very large area. Section 1.4 of the Strategic Arboricultural Impact Assessment & Method Statement states *'Due to the wide spreading nature of the site and the inherent low impact of solar farm installation, a full site survey was deemed impractical and unnecessary, however, a walkover survey of the proposed cable routes between sites was carried out to help inform the best route for the cable to take'.*
- 7.4.30 The OHA consider that without a detailed survey of all trees and woodlands adjacent to all works that have the potential to impact on these features, it is not possible to make an accurate and detailed assessment of the arboricultural impact of the proposed development.
- 7.4.31 Furthermore, as shown within the report [**APP-145**], between sections 5.13 – 5.17, each section (1-5) has the potential to have significant impacts, particularly the high voltage cables, where it states tree removal will be most likely.
- 7.4.32 The report also refers to Ancient Woodland in section 2.23 and the requirement to provide suitable buffers in accordance with Forestry Commission and Natural England standing advice. 15m is a minimum requirement for ancient woodland buffers as guidance states *'Where assessment shows other impacts are likely to extend beyond this distance, the proposal is likely to need a larger buffer zone'.* To accord with Forestry Commission and Natural England standing advice, buffers for ancient and veteran trees should be calculated as: *'For ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter. This will create a minimum root protection area'.* The OHA suggest a 50m buffer is therefore applied as per the Woodland Trust's Planning for Ancient Woodland: Planners Manual for Ancient Woodland and Veteran Trees July 2019.
- 7.4.33 It is noted that the applicant has undertaken a Veteran Tree Survey [**APP-164**] which sets out the importance of ancient and veteran trees and provides a description of them. Clarification should be provided on whether this survey includes both ancient and veteran trees, as early on in the report it refers to these separately, whereas in the survey section it refers only to veteran tree data. If ancient trees were not recorded as part of this survey, a further survey is required.

- 7.4.34 Clarification is also required on whether this survey included all ancient and veteran trees located off the site outside the redline boundary, where their buffer extends into the site.
- 7.4.35 Whilst the information within the Veteran Tree Survey [**APP-164**] is helpful in demonstrating the location of veteran trees within the site, without it being included within an arboricultural impact assessment, and which clearly provides accompanying plans showing all works proposed in relation to the tree's locations, it is again not possible to accurately assess the impact of the works on these trees.
- 7.4.36 It is not clear from information submitted where the exact routes of the high voltage cables will be located. From reviewing various plans within the report, it appears to show a wide route located within the roads. However, more specific details of exact locations are required before a detailed arboricultural impact assessment can be made, as locating the cable route in verges would be completely unacceptable due to the significant impact that would have on the roots of a very significant number of trees that are located adjacent. The routes for cabling between the separate blocks of solar panels also do not appear to be shown on plans. Therefore, the impact of these works is unknown and has the potential to be very significant.
- 7.4.37 There also appears to be various areas on the plans where the route for the cables will have significant impacts to tree root protection areas (RPAs), that would appear avoidable by relocating the route to avoid RPAs. Whilst the specific routes have not been confirmed, it has the potential to impact on the following trees, where its shown within the RPAs of the following trees as identified in [APP-146] and [APP-147]: T92, T94, T95, T96, T110, H16, T160, T161, T173, T175, T178, T185, T186, T187, T199, T204, T206, G42, T215-T217, T222, G46, T229, T230-T234, T237, T238, T248, T249, T271, G60, G59, T279, T283, T284, T286, T287, G70, T394, T395, T404, T405, T406, T407, T408, T410, T411, T415, T416-T421, T422-T424, T426, T428-T430, T432, T434, T437, T438, T439-T446, G101, T449, T456. Plans to the South of Tree Survey (Page 13 of 16) also appear to be missing and therefore, the impact of the route for cables further South is not defined.
- 7.4.38 The Tree Protection Protocol found at Appendix C [**APP-148**] requires amending and supplementing with additional information to ensure it is more site specific. Individual tree protection plans must be provided for all sites, so it is clear to the construction team, where exactly tree protection barriers, ground protection, utility routes etc is to be located. This is also a requirement as set out at Table B.1 of BS 5837:2012 and is standard practice for protecting trees during construction works.
- 7.4.39 The Tree Protection Protocol Scenario 6 is not acceptable. Using machinery to excavate within RPAs is likely to lead to excessive and adverse arboricultural impacts, contrary to section 7.2.1 of BS 5837:2012 which states *'To avoid damage to tree roots, existing ground levels should be retained within the RPA. Intrusion into soil (other than for piling) within the RPA is generally not acceptable, and topsoil within it should be retained in situ. However, limited manual excavation within the RPA might be acceptable, subject to justification. Such excavation should be undertaken carefully,*

using hand-held tools and preferably by compressed air soil displacement'. NJUG Volume 4 also provides guidance for installing utilities within proximity to trees.

- 7.4.40 Similarly, Tree Protection Protocol Scenario 9 is not acceptable. Strip foundations within the RPA of trees can lead to extensive root loss and should be avoided. Machinery for excavating in RPAs should also be avoided.

Operational impacts on wetland birds and aquatic invertebrates: The 'Lake Effect'

- 7.4.41 No assessment has been provided of the potential effects during operation of the solar farm on wetland birds and aquatic invertebrates. The Zone of Influence for the assessment should take this into account, particularly given the proximity of large waterbodies of value to birds in the wider area, including Farmoor Reservoir, Cassington Gravel Pits, Blenheim lakes, and in the wider area, Otmoor and the Lower Windrush Valley complex. An understanding of the use of the wider landscape by wetland birds and aquatic invertebrates is needed to assess how the solar panels might influence behaviour of these species (evidence suggests that the polarised light of solar panels can be confused by these species for open water) and consequent impacts on their populations through mortality or reduced breeding success.

Required Mitigation and Enhancements

- 7.4.42 Measures to avoid, minimise and compensate for ecological impacts from the surface infrastructure and of the cable route will be required, as well as enhancement measures both to achieve BNG and deliver enhancements for species.

Bats

- 7.4.43 The Environmental Statement concludes that the impact on the local bat population will be negligible on the basis that all landscape features that are used by foraging, commuting and roosting bats will be retained and protected by buffers (paragraphs 9.9.131 to 9.9.135 of [APP-046]). However, very little information has been presented regarding proposed avoidance or mitigation measures in relation to bats, particularly Bechstein's and Barbastelles. Mention is made of provision of a suitable buffer to protect all important bat flightlines being incorporated into the 'detailed masterplan' (commitment 9.20 of Table 9.8.1 of [APP-046]). However, important bat flightlines are not identified in the Illustrative Masterplan [APP-062], or other documentation including the oLEMP [APP-235], outline Operational Management Plan (oOMP) [APP-234] or outline Code of Construction Practice [APP-232 and APP-233]. What would be considered a 'suitable' buffer in terms of size has not been defined, even though this would potentially affect the layout of the solar panels. The landscape features used by foraging commuting and roosting bats need to be identified for protection on relevant plans, with appropriate buffers defined in terms of buffer width and proposed management in order to ensure that these are implemented as part of the DCO.

7.4.44 The Environmental Statement indicates that gaps to be created in hedgerows are mostly <5m and unlikely to cause change in foraging/commuting habitat (paragraph 9.9.132 of [APP-046]). However, again no information is presented in terms of which hedgerows are important bat flightlines to justify this conclusion. Important bat flightlines need to be identified for protection on relevant plans, and creation of gaps in vegetation along these flightlines avoided or mitigated.

7.4.45 It is noted that Table 1.1 (documents to support the implementation of the CoCP) of the outline Code of Construction Practice (oCoCP) [APP-232] includes a commitment to produce a construction artificial light emissions plan, however no specific link is made between this and particularly sensitive features for bats, or bat flightlines

Otter and Water Vole

7.4.46 Surveys for these species are required to inform avoidance, mitigation and compensation measures. Without this information it is not possible to advise on appropriate measures.

Great Crested Newts

7.4.47 The licensing options for the development have been kept open, in terms of applying for a Natural England mitigation licence or using the NatureSpace District Licensing Scheme.

7.4.48 We strongly recommend that the District Licensing Scheme should be used to ensure a robust impact assessment and provision of off-site compensation if needed.

7.4.49 Use of the District Licensing Scheme can be secured via the appropriate wording from the standard planning conditions and translated into planning requirements within the DCO. NatureSpace should be consulted for their comments to inform the Examination to understand the details of the likely impacts to this species.

7.4.50 It would be beneficial to improve the habitat for GCN in the scheme area through biodiversity enhancements including provision of more ponds and connected terrestrial habitat.

Farmland Birds

7.4.51 The timing of cutting of grassland should not include April if the intention is to provide skylark nesting habitat as they typically nest on the ground between April and June.

7.4.52 It is recommended that evidence and research of the efficacy of leaving 5mx5m bare plots in solar array fields, in mitigating for losses to farmland birds, is included in the justification and that these features are not relied on as the main mitigation for

farmland bird species. An alternative option to provide foraging habitats may be to manage the grassland habitat beneath and around the solar arrays to provide a diverse structure including tussocky areas that are left uncut for 2-3 years, short-sward grassland and areas of bare ground that could be disturbed. However, this would not mitigate the loss of suitable nesting habitat.

- 7.4.53 The OHA recommend development of a farmland bird strategy for the proposed development, which should consider the need for off-site measures as well as incorporating features for the full range of wintering and breeding birds affected by the scheme. Such an approach could be secured through a requirement for submission of a Farmland Bird Strategy, but since delivery is needed off-site then a legal agreement is likely to be necessary. There are existing successful local schemes working with landowners on improving habitats for farmland birds, which might be able to support delivery. Options could include securing measures to increase the carrying capacity of surrounding farmland for farmland birds, including skylark, either on other landholdings under the applicant's control or through funding facilitation work with nearby landowners and organisations to deliver such measures.

Lake Effect

- 7.4.54 There is no discussion within the documents of the potential 'lake effect' caused by the solar panels, its potential impacts and how this could be ameliorated. There are a number of options for reducing this effect, which should be informed by such an assessment. It is likely that options to reduce the effect should be considered particularly in those areas closest to wetland habitat of value to birds and invertebrates.

Ancient Woodland (Habitat)

- 7.4.55 In line with best practice, 50m buffers to ancient woodland should be identified on the Masterplan, and appropriate management of these buffers set out in the oLEMP. Any deviation from this best practice approach should be fully justified.
- 7.4.56 The siting of panels between and around the areas of Ancient woodland within the central site not only risks deterrent effects for wildlife but also constitutes a lost opportunity for providing connectivity with habitat corridors between these areas of woodland which could have brought substantial benefits. As currently proposed the solar farm would essentially end up "locking" these woodlands up for the lifetime of the development (42 years) with no potential for expansion or connectivity. These areas are included in the draft Local Nature Recovery Strategy mapping and connecting habitats could have a significant positive impact, not least for the rare bat species that have been found roosting in the woodlands (see comments under Biodiversity Net Gain). The 50m buffer area would provide suitable space for natural regeneration and expansion of the woodlands with an opportunity to allow for natural succession, which would benefit many invertebrates, birds and other species. A larger buffer may be required in order to fully connect the woodlands in some locations. This

opportunity must be explored further, otherwise the opportunity for significant contributions towards local nature recovery and climate resilience would be missed.

Trees

7.4.57 Additional arboricultural information is required:

- An updated detailed arboricultural survey, in accordance with BS 5837:2012 of all trees and woodlands adjacent to all works that have the potential to impact on these features. As currently the report only covers trees adjacent to cable routes. The survey should include trees and woodlands adjacent to all other works and all other parts of the site, including the photovoltaic (PV) solar farm and associated infrastructure.
- The arboricultural survey would need to be completed to determine the presence and the precise location of all veteran or ancient trees that may be present on the site. The survey should also include all ancient and veteran trees located off the site outside the redline boundary, where their buffer extends into the site. As this does not appear to have been carried out in the current report. For ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter.
- An updated detailed arboricultural impact assessment once the above surveys have been completed, to cover all works, including the exact location of cable routes.
- An updated Arboricultural Method Statement (Tree Protection Protocol) in accordance with BS 5837:2012, to address the above comments, and also to include individual Tree Protection Plans, in accordance with BS 5827:2012 must be provided for all the sites.
- The above information may then require changes to the design and layout of the development to avoid identified arboricultural impacts

Biodiversity Net Gain

7.4.58 We welcome the commitment to deliver biodiversity net gain above the minimum mandatory requirement of 10% due to come into force for NSIPs in 2026. We note that the statutory metric has been used to calculate biodiversity net gain in line with the recommendations in Section 4.6 of EN-1, reporting a predicted 80.80% net gain in habitat units and 57.93% net gain in hedgerow units.

7.4.59 It is notable that no calculation has been made of baseline or post development watercourse units. According to the Statutory Metric User Guide, if the site boundary crosses into the riparian zone (as is the case for this scheme), all adjacent lengths of

watercourses should be included in the watercourse module. To achieve overall Biodiversity Net Gain, gains need to be demonstrated across all unit types (hedgerows, area habitats and watercourses). This requirement has also been noted by Natural England in their Relevant Representation (see page 11 of [RR-0761]) and by the Environment Agency (see page 16 of [RR-0308]).

- 7.4.60 It is noted that no delay in starting habitat creation has been included within the temporal multiplier for the metric, although it is understood that the construction period is two years. Clarification is sought as to whether there will be any delays in habitat creation.
- 7.4.61 The grassland proposed between the panels is uniform across the site in its choice of seed mix; the primary purpose of which seems to be to provide grazing. There should be at least some areas where grassland of higher value to wildlife is prioritised. Wildflower meadow grassland between arrays would give a much greater benefit to invertebrates and other species.
- 7.4.62 The margins of habitat which are not within the arrays similarly propose somewhat uniform habitats and grass mixes throughout the whole area.
- 7.4.63 Each field should be considered on its own merits and its local context and the most appropriate habitat to maximise value to biodiversity should be considered (taking into account suitability of soils). This is likely to differ between areas of the project site and would give a mosaic of habitat types for these margin areas bringing a much greater wildlife benefit.
- 7.4.64 For example, a shade-tolerant wildflower mix could be sown in with a grass seed mix to create a more diverse grassland beneath the solar arrays, which would still be suitable for grazing, but provide an increased interest for pollinating insects.
- 7.4.65 Field margins could be sown with a tussocky wildflower meadow mix to create conditions suitable for a wide range of species, including reptiles and amphibians, birds and small mammals, as well as providing invertebrate prey for birds.
- 7.4.66 The planting should also reflect the presence of priority species, including food plants for caterpillars and foraging resources for birds. Consideration of the draft LNRS species priority list, and a data search for species in the local area would provide a starting point. For example, Wych elm in hedgerows for White-letter hairstreak, Barberry for the Barberry carpet moth, etc.
- 7.4.67 In the Northern area there is a watercourse running through the arrays. More could be done here to take this into account and create meaningful buffers and habitat areas linked to it.

- 7.4.68 The Biodiversity Net Gain Assessment [**APP-162**] references (on pages 3 and 6) the Oxfordshire draft Nature Recovery Network in designing biodiversity net gain and calculating strategic significance. It should be noted that OCC, as Responsible Authority, is leading a partnership process to develop the Local Nature Recovery Strategy (LNRS)³ for Oxfordshire as mandated by the Environment Act 2021. The LNRS will be critical in delivering government targets for species abundance and habitat creation commitments, as well as wider environmental outcomes. The draft Oxfordshire LNRS was subject to public consultation in October 2024 and the draft documents are available on the Let's Talk Oxfordshire consultation pages⁴. We are aiming to publish the final Oxfordshire LNRS in Autumn 2025.
- 7.4.69 The aim of the Applicant's scheme, to establish a landscape-scale wetland corridor along the River Evenlode (see page 6 of [**APP-162**]), is welcomed, and aligns with the priorities and mapping in Oxfordshire's emerging LNRS. Conservation Organisations with local knowledge should be involved in the design of the Evenlode wetland corridor for the best outcome.
- 7.4.70 It is noted that hedgerow planting is planned to provide connectivity between Tackley Wood and the Blenheim Estate, Bladon and Burleigh Woods. While this is welcomed, we would suggest that the potential to expand hedgerow and woodland buffers for wood-pasture creation or natural woodland regeneration in this area is explored to provide greater woodland connectivity, aligning with mapped measures in the emerging LNRS, and supporting the important bat populations identified through the surveys.
- 7.4.71 The species surveys flagged the presence of some very rare/under-recorded species for the County, notably the Bechstein and barbastelle bats at Bladon Heath and Burleigh Woods, but the presence of nightingale and dormice is also significant with both species recorded in very low numbers in Oxfordshire. Identification of habitat creation measures specifically aimed at supporting these species would be welcomed.
- 7.4.72 The oLEMP [**APP-235**] refers to provision of bee hives (paragraph 10.2 (River Evenlode Corridor), fourth bullet; paragraph 10.2 (Wildflower Meadow Grasslands), third bullet; paragraph 10.2 (Woodlands), final bullet; and paragraph 11.8.1); we would question whether this is an appropriate measure for biodiversity benefit. Honeybees are not native to the UK, and would potentially compete with native pollinators (such as bumble bees, solitary bees, butterflies and hoverflies) for nectar sources. However, the diagram of the 'bee hive' provided in Appendix A (figure 4) to the oLEMP would be better described as a 'insect hotel' than a bee hive. Clarification is therefore sought as to what the proposed provision is for pollinators. A more appropriate measure to support declining native pollinator species would be to include specific planting for

³ <https://www.oxfordshire.gov.uk/residents/environment-and-planning/local-nature-recovery-strategy>

⁴ <https://letstalk.oxfordshire.gov.uk/lnrs-phase3-consultation>

pollinators in edge habitats, similar to measures to provide nectar species under Countryside Stewardship⁵.

Wider Environmental Benefits

7.4.73 Paragraph 4.6.15 of EN-1 states that “applications for development consent should be accompanied by a statement demonstrating how opportunities for delivering wider environmental net gains have been considered, and where appropriate, incorporated into proposals as part of good design...” It is not immediately apparent that such a statement has been submitted with the application.

7.4.74 Some information on wider environmental benefits is included with the draft Oxfordshire LNRS documents, and we are seeking to reflect this further in the Local Habitat Map prior to publication. Work undertaken by Oxford University has mapped natural capital baselines and natural capital opportunities across Oxfordshire and would provide a good starting point for considering priorities for delivery of wider environmental benefits through the scheme

Long term management and monitoring

7.4.75 Paragraph 5.4.44 of EN-1 5.4.44 states that “any habitat creation or enhancement delivered ... for compensation or biodiversity net gain should generally be maintained for a minimum of 30 years or for the lifetime of the project, if longer”. The oLEMP [APP-235] mentions monitoring for 30 years (paragraph 15.1.5) but elsewhere references monitoring for the lifetime of the project (paragraphs 1.1.10 and 17.1.1). Clarification and correction of the documents is therefore suggested to confirm that management, and monitoring should be undertaken for the lifetime of the project as a minimum. We would encourage the ongoing management of habitats created for compensation and biodiversity net gain beyond the life of the project.

7.4.76 It is set out that the intention is for multiple LEMPs (covering different zones of the scheme) to be approved by districts prior to commencement; it is essential Host Authorities are adequately resourced and funded to do this. The same point applies to any requirement which must be discharged by a Host Authority. Ideally, OHA would prefer the approach whereby one District Council takes the lead role on approving the documents for discharge of the requirement, in consultation with the other councils, as this would mean a better overview, with only one LEMP needing to be produced for the whole project area (or for each phase of the project).

⁵ https://url.avanan.click/v2/___https://www.gov.uk/countryside-stewardship-grants/nectar-flower-mix-ab1___YXAxZTpaGFycGVwcmI0Y2hhcmQ6YTpvOjdmMjM3NDE0YzUwMzFhODRhNzhmMDFkNjQxY2ZkOGE5OjY6MmIxYT05ZjA3ZTljMWE0ZjcxODI5OTIwMDA0MzNhNWZkMGI3OWQwZjJiZTcyOTc0M2ZjZjMzMDlmZjI4ZWwEwNTRkMmMwOnA6VDpO

DCO Requirements and legal obligations

7.4.77 Suggested amendments to wording of requirements in bold typeface:

Biodiversity net gain

7.—(1) No part of the authorised development may commence until a biodiversity net gain plan has been submitted to and approved by the relevant planning authority, in consultation with the relevant statutory nature conservation body.

(2) The biodiversity net gain plan must be substantially in accordance with the outline landscape and ecology management plan **and biodiversity net gain statement** and must be implemented as approved and maintained throughout the operation of the relevant part of the authorised development to which the plan relates.

Code of construction practice

11.—(1) No part of the authorised development may commence until a code of construction practice for that part has been submitted to and approved by the relevant planning authority, such approval to be in consultation with the planning waste authority and the relevant highway authority.

(2) The code of construction practice must include the following plans;

- (a) construction traffic management plan;
- (b) public rights of way management strategy;
- (c) soil management plan;
- (d) site resources and waste management plan;
- (e) dust management plan;

(f) Construction environmental management plan

(3) The code of construction practice and any plans to be included within the code of construction practice pursuant to sub-paragraph (2) must be substantially in accordance with the outline code of construction practice.

(4) The code of construction practice must be implemented as approved.

(5) For the purposes of sub-paragraph (1), “commence” includes part (c) (works in relation to construction compounds and accesses to construction compounds (including above and below ground site preparation for temporary facilities for the use of contractors)) of the permitted preliminary works.

Landscape and ecology management plan

6

1) No part of the authorised development may commence until a written landscape and ecology management plan has been submitted to and approved by the relevant

planning authority for that part, or where the part falls within the administrative areas of multiple relevant planning authorities, each of the relevant planning authorities.

(2) The landscape and ecology management plan must be substantially in accordance with the outline landscape and ecological management plan.

(3) The landscape and ecology management plan must be implemented as approved and maintained throughout the operation of the relevant part of the authorised development to which the plan relates.

(4) For the purposes of sub-paragraph (1), “commence” includes part (h) (site clearance (including vegetation removal, demolition of existing buildings and structures)) and (i) (advanced planting to allow for an early establishment of protective screening) of the permitted preliminary works.

Farmland Bird Strategy

7.4.78 A requirement for submission of a Farmland Bird Strategy should be included, but since delivery is needed off-site then a legal agreement is also likely to be necessary.

Great Crested Newt District Licence

7.4.79 If the District Licencing approach is to be used, appropriate wording from the standard planning conditions would need to be included in the DCO requirements.

Legal obligations

7.4.80 There is a need for monitoring of the ecological management and achievement of BNG habitat condition for the lifetime of the project. Therefore, a monitoring fee will need to be secured to fund the relevant LPA to review monitoring reports on an agreed frequency, and to undertake site visits. Local arrangements are already in place with LPAs for calculating BNG monitoring fees; payment of the monitoring fee would need to be secured through Section 106 agreements with the relevant LPA.

7.4.81 Given the need for a Section 106 agreement to secure the monitoring fee, it may be more appropriate that the Section 106 agreement also secures the delivery of the Landscape and Ecology Management Plan and implementation of the Biodiversity Net Gain Plan. However, the OHA are also willing to consider how this could be secured via Requirements within the DCO.

7.4.82 A legal agreement would also be needed to secure off-site measures to compensate for impacts to farmland birds.

7.4.83 With regard to trees and the draft DCO:

- Article 38(6) (felling or lopping of trees and removal of hedgerows of the draft development consent order) [APP-015] states the undertaker may not “fell or lop a tree or remove hedgerows within the extent of the publicly maintainable highway without the prior consent of the highway authority”. OCC as Highways

Authority support this and consider it essential that written consent must be given by the Highway Authority before any works are carried out, including pruning, felling or works to tree or hedgerow roots, in relation to vegetation in the publicly maintainable highway.

- With regards to article 39 (trees subject to tree preservation orders) and the general powers contained within article 38 to remove trees not protected by TPOs, the OHAs question the need for such a blanket power and would instead wish to see the article drafted in such a way where OHAs must give prior consent for the removal of any trees and hedges within the site. The OHA do not believe the applicant has adequately demonstrated why such a power is necessary.

Conclusion on Ecology, Nature Conservation and Trees

Impact - Negative

7.4.84 The OHA consider the proposed development will have a negative impact on ecology. This conclusion is drawn from the fact that inadequate information has been provided regarding:

- Arboricultural Survey Information, the Arboricultural Impact Assessment.
- bat surveys and mitigation
- otter and water vole surveys and mitigation
- assessment of the 'lake effect'
- great crested newt licencing options
- demonstration of how wider environmental net gains have been incorporated

7.4.85 There is also:

- Insufficient avoidance and mitigation in relation to trees and woodlands.
- Insufficient avoidance, mitigation and compensation for farmland birds.
- A lack of species-specific enhancements for dormice, nightingale and great crested newt.
- A lack of biodiversity net gain in relation to watercourses and woodland connectivity and expansion.

7.5 Hydrology and Flood Risk

Summary:

- The applicant has not had regard to the latest Environment Agency mapping of flooding from fluvial and surface water. This may impact the sequential approach to the location of the development.
- Insufficient information on surface water management during construction and ground decompaction methods to take place following construction.

- Insufficient information on the management of the ground beneath the panels during operation.
- Insufficient evidence of groundwater monitoring and infiltration rate testing.
- Insufficient evidence of the impact of the development of areas with established risk of flooding.

Mitigation / Improvements

- The applicant's approach to the Sequential Test should be revisited following review of the latest fluvial and surface water flooding maps produced by the EA.
- Further information should be provided on the surface water mitigation during construction, as well as details of ground decompaction methods during the construction phase.
- The Outline Operational Management Plan [APP-234] should be updated to include how ground conditions beneath panels will be maintained to prevent increase run off rates.
- Further groundwater monitoring and infiltration testing should be carried out to inform the drainage strategy. Calculations should be provided to evidence the proposed drainage strategy.
- Surface Water modelling for areas of known flood risk such as Cassington should be revisited.

Key Policies / Compliance

Table 9 - Development Plan policies relevant to Hydrology and Flood Risk

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP ESD6: Sustainable Flood Risk Management CLP ESD7: Sustainable Drainage Systems	Compliant
Vale of White Horse	LPP1 CP42: Flood Risk CNP RNE2: Flood Risk	Compliant
West Oxfordshire	WOLP EH7: Flood Risk	Compliant
Oxfordshire County Council	N/A	

Policy Detail

- 7.5.1 CLP Policy ESD6: Sustainable Flood Risk Management seeks to manage and reduce flood risk in Cherwell District and ESD 7: Sustainable Drainage Systems (SuDS) requires all development to use SuDS.

- 7.5.2 Policy CP42 of LPP1 seeks to ensure that development provides appropriate measures for the management of surface water as an essential element of reducing future flood risk to both the site and its surroundings.
- 7.5.3 Policy RNE2 of CNP also advises development proposals should be located and designed to take account of flood risk and that inappropriate development in areas at risk of flooding will not be supported unless the exception tests in paragraph 159 of the NPPF are met. Where development is necessary in such areas, development should be made safe for its lifetime without increasing flood risk elsewhere and proposals should take account of impacts in terms of runoff generation and surface water drainage and provide required mitigation measures to ensure that there is no unacceptable increase in surface water discharge off site.
- 7.5.4 EH7 – Flood Risk confirms Flood risk will be managed using the sequential, risk-based approach, set out in the National Planning Policy Framework, of avoiding flood risk to people and property where possible and managing any residual risk (taking account of the impacts of climate change).
- 7.5.5 In assessing proposals for development:
- the Sequential Test and, if necessary, the Exception Test will be applied;
 - all sources of flooding (including sewer flooding and surface water flooding) will need to be addressed and measures to manage or reduce their impacts, onsite and elsewhere, incorporated into the development proposal;
 - appropriate flood resilient and resistant measures should be used;
 - sustainable drainage systems to manage run-off and support improvements in water quality and pressures on sewer infrastructure will be integrated into the site design, maximising their habitat value and ensuring their long-term maintenance;
 - a site-specific flood risk assessment will be required for all proposals of 1ha or more and for any proposal in Flood Zone 2 and 3 and Critical Drainage Areas;
 - only water compatible uses and essential infrastructure will be allowed in a functional flood plain (Flood Zone 3b);
 - land required for flood management will be safeguarded from development and, where applicable, managed as part of the green infrastructure network, including maximising its biodiversity value.

Commentary

- 7.5.6 The applicant as part of the Environment Statement submission has produced a Flood Risk Assessment (FRA) see ES Volume 3 Appendix 10.1: Flood Risk Assessment [APP-047]. The project area includes extensive areas at risk of fluvial flooding primarily associated with the River Evenlode and River Thames and their tributaries and located within Flood Zone 2 and 3.

- 7.5.7 The OHA note the inclusion of fluvial flooding related to main river flooding and reservoir inundation impacts but defer to the Environment Agency as the statutory body in relation to these matters and the appropriate relevant representations **[RR-0308]**.
- 7.5.8 It is also noted that Environment Agency recently released new mapping of flooding from fluvial and surface water (March 2025) and the Flood Risk Assessment **[APP-047]** was completed in November 2024. This more up to date information has not been used in the assessment of the risk to these proposals. This may affect the conclusions around the sequential approach to the location of the development and elements within the development areas.
- 7.5.9 As the Lead Local Flood Authority, Oxfordshire County Council have a specific statutory consultee role in relation to developments that have surface water drainage. Oxfordshire County Council have prepared standards that are based on the non-statutory technical standards produced by DEFRA. It is recognised that the applicant has sought to avoid areas at risk of fluvial flooding by restricting panel development and other elements of energy generating infrastructure to flood zone 1. The location of generating infrastructure outside of areas of fluvial flooding is to be supported and consistent with the sequential test as required by Local Development Plans.
- 7.5.10 The project area is situated across multiple complex catchments however and the impacts on the rivers because of changes to overland flow and surface water drainage should be considered.
- 7.5.11 The Outline Code of Construction Practice **[APP-232]** at Chapter 1, paragraphs 1.10.21 to 1.10.30 includes provision for general construction practice requirements for the crossing of ordinary watercourses in relation to hydrology and flood risk. The oCoCP at paragraph 1.10.28 also acknowledges the requirement for individual more specific plans when considering consents.
- 7.5.12 However, the oCoCP **[APP-232]** does not include information on how surface water flows and runoff during construction will be managed or what overarching guidance is associated with these. More information on how these will be managed during the construction phase will need to be provided. Without this information it is difficult to confirm impacts on flood risk during construction. This is likely to be different depending on the specific locations on the site.
- 7.5.13 The Outline Operational Management Plan **[APP-234]** includes for general provisions of attenuation. However, this document is not specific on the management of the ground to manage the runoff from the panels which is relied upon in the applicant's drainage strategy. Whilst **[APP-234]** is only an outline plan and requirement 12 of the DCO will require the submission and approval of a more detailed plan, the requirement states a paragraph (2) that the Operational Management Plan to be submitted will

need to be substantially in accordance with the outline plan. As such the OHAs would like the issue of ongoing maintenance of the ground beneath the panels to be included within the Outline Operational Management Plan [APP-234]

7.5.14 The applicant contends in the Flooding and Hydrology ES Chapter [APP-047] Paragraph 10.1.8 that the impact of the proposed solar farm development on flood risk is negligible with appropriate flood risk mitigation and SuDS designed within the proposal of the scheme. This needs to be considered in the context of limited evidence on:

- The acceptability of the measures to control the runoff from the panels including the vegetation management, orientation of the panels and provision of filter strips, which are not specified for individual catchment areas or assessed in relation to runoff rates.
- The management of the compaction and removal of vegetation during the construction stage. At present it is not explicit as to how this will be undertaken. This management during the construction phase will be key to retaining good ground condition for infiltrating flows. A Construction Environmental Management Plan (CEMP) or similar document should be produced by the applicant which details the decompaction measures to be employed post construction to ensure maximum infiltration potential is preserved.
- Infiltration rate and groundwater level monitoring to establish the design parameters across the site and support the assumptions in relation to surface water runoff and features.
- Post development modelling of surface water catchment to understand the impacts of panel development. The applicant relies on a literature review to explain the expected impact of the solar farm on surface water drainage as a result of the project.

7.5.15 The LLFA's relevant representation (contained within OCC's relevant representation [RR-0793] indicated the proposals for surface water drainage across the site was conceptual and may be appropriate if further supporting information was provided, to include ground investigation reports, a more detailed drainage layout with identified discharge locations, updated calculations to correspond with the drainage layout, updated water quality and maintenance requirements, and further detail on how the field beneath the panels will be managed during construction, operation and reinstatement. OCC maintains its position in this regard.

The Northern Site

7.5.16 OCC as the LLFA hold records of flood incidents reported to the Council from a number of sources, some of these are not verified. We do not hold any records of flood incidents within the red line boundary for the Northern Area. Flood incidents were reported in Wootton and Woodstock which are to the west of the proposed area.

7.5.17 Modelling of the ordinary watercourses on the northern site is considered to be appropriate and that the inherent raised nature of the solar panels would ensure they would not be damaged during the residual risk occurrences.

The Central Site

7.5.18 OCC as LLFA hold records of flood incidents reported to the Council from a number of sources, some of these are not verified. We do not hold any records of flood incidents within the red line boundary for the Central Area. Flood incidents were reported in Begbrooke, Cassington and Bladon immediately outside of the boundary.

7.5.19 A moderate to negligible risk of groundwater flooding in the central area and any high groundwater levels may impact on the potential for infiltration to be as effective in this area. Furthermore, detailed testing of the groundwater level and potential for flooding is recommended to ensure equipment is located in the lowest risk from all sources.

7.5.20 Local evidence⁶ identifies extensive areas at risk of surface water flooding within the project area, particularly in the northern and central sections of the project. Local evidence is consistent with the information presented by the applicant in their Surface Water Modelling Report [**APP-172**].

7.5.21 The village of Cassington which is located in the Central Section is a settlement at particular risk of impacts of surface water flooding having experienced property flooding (at Bell Close and Elms Road) on a number of occasions in recent years.

7.5.22 Detail of flood hydrology in the catchment north of Cassington are provided in Appendix A of the Hydrology Report [**APP-171**].

7.5.23 The landowner (Blenheim Estate) recognises the risks to people and property arising from surface water flooding in proximity to the village of Cassington and has commissioned their own modelling to identify the main hydrological pathways and opportunities for Natural Flood Management (NFM) upstream of the village of Cassington.

7.5.24 It is clear that there is an existing issue of surface water drainage as is recognised by evidence prepared by the applicant, landowner and host authorities and these will require careful consideration through project design, to avoid local impacts including risks to people and property in proximity to the scheme.

7.5.25 The Cassington Stream is a particularly flashy stream which runs through the village and has a catchment of approximately 83ha to the north of the village withing the central section of the project area.

⁶ [1] West Oxfordshire Level 1 Strategic Flood Risk Assessment (SFRA), March 2025

7.5.26 Local Policy (such as Cherwell Local Plan Policy ESD6, West Oxfordshire Local Plan policy EH7 and policy RNE2 of Cumnor Neighbourhood Plan) requires that all sources of flooding, (including sewer flooding and surface water flooding) will need to be addressed and measures to manage or reduce their impacts, onsite and elsewhere, incorporated into the development proposal.

7.5.27 The development proposals (Masterplan) indicate the introduction of buffer strips, bunds, ponds and ditch widening to the north of Cassington, designed and positioned to mitigate the surface water impacts of the proposal and provide betterment compared to the existing baseline position. However further work on the modelling and proposals needs to be undertaken to confirm the effectiveness of these measures to mitigate flood risk. The introduction of these measures would be consistent with Local Policy, although the management and maintenance of these measures, as well as the Cassington stream will be essential to guarantee that negative impact do not arise from the project.

The Southern Site

7.5.28 OCC hold records of flood incidents reported to the Council from a number of sources, some of these are not verified. We do not hold any records of flood incidents within the red line boundary for the Southern Area. Incidents were reported to the north of the area in Farmoor and to the South in Cumnor.

Adequacy of the application/DCO

7.5.29 The proposals rely on the construction and operation management of the land to effectively drain the site for surface water flows, where this is not secured flood risk could be increased due to increased rates of runoff. The surface water drainage proposals that are included require significant information and calculations to confirm their acceptability; the Councils would require the following information:

- Comparison with the new flood map for planning to show that conclusions around the sequential approach are still valid.
- Inclusion in the Code of Construction Practice (CoCP) of how the ground will be managed during this period to reduce compaction of the area; this is key to the management of runoff from the site.
- Inclusion in the CoCP of information on how flood risk will be managed temporarily during the construction period if there were to be an event.
- How the land management during the operation will address any issues around sheeting off the solar panels to reduce bare ground, channelling of water in any specific way. The inspection and maintenance are key to mitigating any potential effects and should be included in any operational plans.
- Information on the ground conditions such as infiltration testing is required to understand the infiltration potential. Groundwater levels should be included in

any assessment of runoff rate, drainage design and any surface water modelling or drainage strategy.

- Surface water measures for the solar arrays do not include any ‘calculations’ to show that they will be appropriate. These calculations need to be informed by the ground conditions to show how any runoff can be accommodated within the ground, filter strips and other measures.
- Surface water modelling to be undertaken to catchment areas where required to understand runoff regime and measures that will be required to manage surface water flooding.
- The surface water modelling undertaken for Cassington has a number of areas of concern on the modelling approach and the proposals for mitigation in this area.

7.5.30 In relation to Schedule 15: protective provision Part 3 we do not understand the purpose of this part other than to try and amend the existing timeframes for determination of a consent under the Land Drainage Act 1991 (“LDA 1991”) Section 23.

7.5.31 This currently under *Section 23 (3)*

‘Where an application is made to the drainage board concerned for their consent under this section—

(a)the consent is not to be unreasonably withheld; and

(b)if the board fail within two months after the relevant day to notify the applicant in writing of their determination with respect to the application, they shall be deemed to have consented.’

7.5.32 This is a reasonable amount of time to determine a consent and does not require a reduction as suggested by the 28 days indicated in the Draft Protective provisions

7.5.33 The LDA 1991 is clear about what does or does not require consenting under that Act and there will be unnecessary work to establish a new procedure to accommodate the protective provisions in Section 3 (3) (b).

7.5.34 OCC have an Agency Agreement with each District Authority in relation to them determining consents under the requirements of the LDA1991. This agreement provides for these consenting activities to be undertaken as per the process and requirements of the LDA 1991 including those timescales detailed within that Act. OCC are not able to agree the protective provisions as identified in the section without renegotiation of those agreements to provide for an amendment to any process or time frame. And OCC are not in a position to agree those where the resource is provided by the district in accordance with that agreement or require a significant change to the existing process for managing works on ordinary watercourses.

7.5.35 OCC therefore see no reason to have specific provisions that alter the requirements of the LDA 1991 in relation to issuing a consent to undertake works of this nature.

Conclusion on Hydrology and Flood Risk

Impact – **neutral**

7.6 Ground Conditions

Summary

- The proposal largely comprises agricultural land which is not considered to represent a potentially significant source of contaminants of concern.
- The potential for new contaminants during construction via spillages or leakages from plant or fuel storage in compounds.
- The potential for ground contamination if the project is not decommissioned properly and elements such as piling spikes remain.

Mitigation / Improvements

- None.

Key Policies / Compliance

Table 10 - Development Plan policies relevant to Ground Conditions

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not Assessed
Cherwell	CLP ESD8: Water resources CLP ESD10: Protection and Enhancement of Biodiversity and the Natural Environment	Compliant
Vale of White Horse	LPP1 CP43: Natural Resources LPP1 CP46: Conservation and Improvement of Biodiversity LPP2 DP27 Land Affected by Contamination	Compliant

West Oxfordshire	WOLP EH3: Biodiversity and Geodiversity WOLP EH8: Environmental Protection	Compliant
Oxfordshire County Council	N/A	

Policy Detail

- 7.6.1 Policy ESD8 of CLP states that development proposals which would adversely affect underground water bodies will not be permitted. Policy ESD10 of the CLP seeks to protect areas of geological value and to require the reuse of soils.
- 7.6.2 Policy DP27 of LPP2 requires proposals for the development, redevelopment or re-use of land known, or suspected, to be contaminated, to submit a Contaminated Land Preliminary Risk Consultant Report.
- 7.6.3 WOLP EH8 requires that proposals which are likely to cause pollution or result in exposure to sources of pollution or risk to safety, will only be permitted if measures can be implemented to minimise pollution and risk to a level that provides a high standard of protection for health, environmental quality and amenity.
- 7.6.4 Proposals for development of land which may be contaminated must incorporate appropriate investigation into the quality of the land. Where there is evidence of contamination, remedial measures must be identified and satisfactorily implemented.

Commentary

- 7.6.5 The proposal largely comprises agricultural land which is not considered to represent a potentially significant source of contaminants of concern. However, there are on-site potential infilled areas of ground and former landfill which could represent sources of contaminants. There is also the potential for new contaminants during construction via spillages or leakages from plant or fuel storage in compounds. It is accepted this can be readily mitigated by best practice measures and construction drainage design.

Adequacy of the application/DCO

- 7.6.6 Chapter 11 of the ES [APP-048] considers impacts on ground conditions from construction and operation. It is considered the ES contains adequate information for the ExA to assess the impact of the proposal on soil and groundwater contamination, surface water contamination, future land users and off-site land users.
- 7.6.7 To address impacts on ground conditions the DCO requires details of surface water drainage works and (if any) foul water drainage system including means of pollution control to be submitted to and approved by the relevant planning authority (Sch2 Req9) along with soil management plans and site resources and waste management plans (Sch2 Req11).

- 7.6.8 The inclusion of mitigation in the form of further investigation/remediation and a watching brief and procedures to be followed in the event of unexpected contamination being encountered as per the suggested requirements in CDCs S42 response to the applicant on 08 February 2024 is welcomed.
- 7.6.9 Similarly, the inclusion of a Materials Management Plan and the export of incidentally extracted excess sand and gravel for reuse off site in the proposed mitigations as previously recommended is also welcomed.
- 7.6.10 There is concern on the lack of clarity for decommissioning and the removal of all items associated with the PV panels such as cabling and piling spikes.

Conclusion on Ground Conditions

Impact – **Neutral**

7.7 Mineral Safeguarding

Summary:

- Several of the parcels proposed for the development fall within a Mineral Safeguarding Area for sand and gravels.
- The amount of minerals the proposed development would sterilise would be equivalent to Oxfordshire's seven-year supply.
- This is contrary to The Minerals and Waste Local Plan for Oxfordshire.

Mitigation / Improvements

- Areas of the proposed development which fall within Minerals Safeguarding areas should be removed from the scheme.

Key Policies / Compliance

Table 11 - Development Plan policies relevant to Minerals Safeguarding

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not Assessed
Cherwell	N/A	
Vale of White Horse	N/A	
West Oxfordshire	Policy OS2 – Locating development in the right places.	Conflict identified
Oxfordshire County Council	MWLP M3 - Principal Locations for Working Aggregate Minerals MWLP M5 - Working of Aggregate Minerals MWLP M8 - Safeguarding Mineral Resources	Conflict identified

Policy Detail

- 7.7.1 Paragraph 5.11.19 of NPS EN-1 sets out that Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place.
- 7.7.2 Paragraph 5.11.28 states that “Where a proposed development has an impact upon a Mineral Safeguarding Area (MSA), the Secretary of State should ensure that appropriate mitigation measures have been put in place to safeguard mineral resources.”
- 7.7.3 Policy OS2 of the WOLP states that all development should safeguard minerals resources.
- 7.7.4 Policy M8 of the Minerals and Waste Local Plan Part 1 – Core Strategy, adopted September 2017(Core Strategy) states that:

“Mineral resources in the Mineral Safeguarding Areas shown on the Policies Map are safeguarded for possible future use. Development that would prevent or otherwise hinder the possible future working of the mineral will not be permitted unless it can be shown that:

- The site has been allocated for development in an adopted local plan or neighbourhood plan; or
- The need for the development outweighs the economic and sustainability considerations relating to the mineral resource; or
- The mineral will be extracted prior to the development taking place”.

7.7.5 This policy is in line with paragraph 223 (c) of the National Planning Policy Framework (NPPF) which states that:

Planning policies should:

- (c) safeguard mineral resources by defining Mineral Safeguarding Areas and Mineral Consultation Areas; and adopt appropriate policies so that known locations of specific minerals resources of local and national importance are not sterilised by non-mineral development where this should be avoided (whilst not creating a presumption that the resources defined will be worked);”

Commentary

7.7.6 Parts of the proposed solar farm proposal are within the Mineral Safeguarding Areas. These are as labelled on the EN010147-000360-EN010147 APP 2.4 - Land Plans [APP-007] as:

8-01, 8-04, 8-06, 8-19, 8-20, 8-27, 8-28, 8-30, 8-32, 8-36;
10-01, 10-02, 10-12, 10-16 (part of);
11-04, 11-33, 11-35, 11-37, 11-39, 11-40.

7.7.7 In terms of these parts of the application site, policy M8 of the Core Strategy applies.

7.7.8 The site has not been allocated in a Local Plan or Neighbourhood Plan and there is no proposal to extract the mineral prior to the development taking place.

Adequacy of the application/DCO

7.7.9 The Applicant has submitted a Mineral Resource Assessment (MRA) [APP-195] with the intention of showing that the need for the development outweighs the economic and sustainability considerations relating to the mineral resource.

7.7.10 In terms of determining the value of the mineral safeguarding there are two main issues: how much mineral will be sterilised and for how long will the sterilisation last.

Mineral Resource Affected

- 7.7.11 The Applicant's MRA calculates the lost mineral to be 3.58 million cubic metres which at a conversion rate of 1.5 tonnes per cubic metre would be 6.87 million tonnes.
- 7.7.12 The latest Local Aggregate Assessment has an Annual Provision Rate (APR) of 0.986 million tonnes. This means that the mineral lost would be equivalent to 6.97 years of supply for Oxfordshire which would be almost equivalent to a 7-year landbank requirement set out in the NPPF.
- 7.7.13 The amount of sand and gravel that would be prevented from being worked therefore is considered significant and would come at a time when central government are prioritising house building and growth which will need the adequate supply of sand and gravel to meet demand.
- 7.7.14 The MRA references policy M3 of the Oxfordshire Minerals and Waste Local Plan Part 1 – Core Strategy (Core Strategy) which sets out that, among other things, that sites allocated for sand and gravel extraction in the Oxfordshire Minerals and Waste Local Plan Part 2 – Site Allocations (Site Allocations Document) will be 25% in northern Oxfordshire and 75% in southern Oxfordshire.
- 7.7.15 Oxfordshire has now stopped work on the Site Allocations Document and commenced work on a new plan to incorporate both the core policies and site allocations. Nevertheless, policy M5 of the Core Strategy states that prior to the adoption of the Site Allocations Document, permission will be granted if the application is, among other things, consistent with the locational strategy in policy M3 of the Core Strategy. The Core Strategy remains the current Development Plan document and therefore policy M5 still applies. This does not mean that there is no need for mineral extraction in Northern Oxfordshire.

Length of Time the Mineral Would be Affected

- 7.7.16 The Applicant states that the planning permission would be temporary and would be removed at the end of forty years. It would be the case that the development would be in place throughout the life of the next Minerals and Waste Local Plan, and most likely for the one following that.
- 7.7.17 Also, it should be noted that paragraph 168(c) of the NPPF states that when determining planning applications for end-of-life extensions to existing renewable sites, local planning authorities should give significant weight to the benefits of utilising an established site. This suggests that once the precedent of using the site for a solar farm, there would be planning policy support for continuing to do so once the temporary permission has expired. This principle could be applied to Botley Solar Farm in the future, and this would further prevent or hinder the future working of the mineral.

- 7.7.18 Given that the mineral being prevented or hindered from being worked and potentially sterilised if the solar farm is never removed, would be almost the equivalent of OCC's required seven year land-bank, and that the mineral would be unable to be worked a minimum of 40 years, this would be a major negative outcome from a Mineral Planning Authority perspective.
- 7.7.19 The Applicant has reiterated the value of the renewable energy, but they have assessed the value of the mineral as moderate to negligible and therefore have not addressed the need to overcome a major effect on the mineral resource.
- 7.7.20 Consequently, the case for building the part of the solar farm that would prevent, or otherwise hinder future working and possibly sterilise the mineral resource has not been justified.

Conclusion on Mineral Safeguarding

Impact – Negative

- 7.7.21 Parts of the proposal would prevent, hinder and potentially sterilise 3.58 million cubic meters of aggregate. We would therefore consider this impact on the Mineral Safeguarding Area as significant and negative, a major concern from a Mineral Planning Authority perspective. We would therefore wish to see those areas that fall within the Mineral Safeguarding Area removed from the proposal.
- 7.7.22 OCC wish to see those areas that fall within the Mineral Safeguarding Area removed from the proposal.

7.8 Traffic and Transport (including Public Rights of Way)

Summary

Highway Network

- The permanent impacts of the proposed development on the highway network are likely to be neutral. However, the construction phase is likely to have localised impacts due to the laying of cables under the carriageway and could see an increase in traffic on key routes and junctions.
- OCC as the Highways Authority requires clarity over the applicant's proposed methodology for routing their cable beneath the A40
- The applicant's proposed highways powers, as set out in the draft DCO **[AS-009]** are too wide-ranging and amendments are needed in this respect and other areas as detailed in this chapter.

Public Rights of Way

- The proposal does not adequately consider the impacts of the development on users of the PRoW network. Whilst some PRoW improvements have been proposed, these are limited and do not go far enough to mitigate the impact of the development. PRoW mitigation measures and improvements to the scheme suggested by OCC in February 2024 have not been carried forward.
- The application in its current form cannot be supported from a PRoW perspective and the impact on PRoW is considered to be negative.

Mitigation / Improvements

- Suggested mitigation in the form of onsite PRoW improvements, a financial contribution to offsite PRoW improvements, delivery of active travel connections, and a permanent reduction in speed limit on the B4017 are detailed in this chapter.

Key Policies / Compliance

Table 12 - Development Plan policies relevant to Traffic and Transport

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP ESD5: Renewable Energy CLP SLE4: Improved Transport and Connections CLP INF1: Infrastructure	Conflict identified with ESD5
Vale of White Horse	LPP1 CP33: Promoting Sustainable Transport and Accessibility LPP1 CP35: Promoting Public Transport, Cycling and Walking LPP2 DP16: Access	Conflict identified with DP31, T13 and RNE1

	LPP2 DP31: Protection of Public Rights of Way, National Trails and Open Access Areas CNP T12: Cycle Routes CNP T13: Footpaths and Bridleways CNP RNE1: Green Infrastructure	
West Oxfordshire	WOLP Policy T2 – Highway improvement schemes CNDP Policy CAS2 – Active Travel	Conflict identified
Oxfordshire County Council	LTCP Policy 1 – Transport User Hierarchy LTCP Policy 2 – Cycle and walking networks LTCP Policy 3 – Local Cycling and Walking Infrastructure Plans LTCP Policy 4 – Strategic Active Travel Network LTCP Policy 5 – Public Rights of Way LTCP Policy 6 – Greenways LTCP Policy 9 – Health Impact Assessment LTCP Policy 15 – Vision Zero LTCP Policy 31 – Network Management	Conflict Identified with LTCP Policy 3 and Policy 5

Policy Detail

- 7.8.1 Paragraph 5.14.18 of NPS EN-1 states that “A new energy NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the Secretary of State should therefore ensure that the applicant has sought to mitigate these impacts, including during the construction phase of the development and by enhancing active, public and shared transport provision and accessibility.”
- 7.8.2 Paragraph 2.10.43 of NPS EN-3 encourages applicants to “minimise the visual impacts of the development for those using existing public rights of way, considering the impacts this may have on any other visual amenities in the surrounding landscape” and notes that screening along Public Rights of Way (PRoW) to minimise outlooks into the solar farm may impact on the ability of users to appreciate the surrounding landscape.
- 7.8.3 Paragraph 2.10.162 of NPS EN-3 states that the Secretary of State is unlikely to give any more than limited weight to traffic and transport noise and vibration impacts from the operational phase of a project.
- 7.8.4 Policy ESD 5 of CLP supports renewable and low carbon energy provision wherever any adverse impacts can be addressed satisfactorily. Impacts include highways and access issues.
- 7.8.5 Policy SLE4 of CLP seeks to secure transport infrastructure necessary to mitigate the impact of new developments whilst encouraging the use of sustainable modes of transport to make the fullest possible use of public transport, walking and cycling. Developments which have a severe traffic impact will not be supported.

- 7.8.6 Policy INF1 of CLP requires new development to provide the necessary infrastructure to support its delivery including transport.
- 7.8.7 Policy DP31 of LPP2 confirms development will be permitted where the development can be designed to accommodate satisfactorily the existing route, or where the right of way is incorporated into the development as an attractive, safe and continuous route.
- 7.8.8 Policy CP33 of LPP1 actively seeks to ensure that the impacts of new development on the strategic and local road network are minimised, to ensure that developments are designed in a way to promote sustainable transport access and to promote and support improvements to the network that increase safety and improve air quality.
- 7.8.9 Policy CP35 of LPP1 promotes public transport, cycling and walking and together with policy DP17 of LPP2 requires proposals for major developments to be supported by a Transport Assessment in accordance with OCC guidance.
- 7.8.10 Policy DP16 of LPP2 requires evidence to demonstrate that acceptable off-site improvements to highway infrastructure can be secured where these are not adequate to service the development.
- 7.8.11 Policy RNE1 of CNP states that development proposals should take account of the network of local footpaths
- 7.8.12 Policy TI2 of CNP seeks to ensure the B4044 cycle route is safeguarded to enable a new cycle path to be provided and that new development adjacent to the route should be designed to enhance the safety and amenity of the proposed cycle path.
- 7.8.13 Policy T13 of CNP confirms that new development proposals should consider the safety, accessibility, and visual amenity of Cumnor's network of footpaths and bridleways. Development proposals which would have an unacceptable impact on their accessibility and recreational amenity value will not be supported and where practicable to do so development should take opportunities to enhance the accessibility, connectivity and amenity of footpaths and PRow.
- 7.8.14 WOLP Policy T2 requires that all development will be required to demonstrate safe access and an acceptable degree of impact on the local highway network.
- 7.8.15 Development proposals that are likely to generate significant amounts of traffic, shall be supported by a Transport Assessment (TA) and a Travel Plan.
- 7.8.16 Policy CAS2 of CNDP requires that development proposals on land that lies within or adjacent to the Network should sustain, and where practicable, enhance the multifunctionality of the Network by virtue of their layout, means of access and landscape treatment. Proposals that will harm the functioning or connectivity of the

Network will not be supported. Proposals which fragment the routes will be resisted, unless this can be replaced in a way that improves the overall Network. Development proposals that would make an appropriate contribution to the improvement and/or extension of the network will be supported.

- 7.8.17 Policy 1 of the LTCP seeks to reduce the dominance of the private car as the primary form of personal transport within Oxfordshire and instead requires the prioritisation of the delivery of active travel, public transport and shared travel solutions ahead of transport solutions reliant on the private car.
- 7.8.18 Policy 2 of the LTCP requires the creation accessible walking and cycling networks that connect important nodes within the county. New development must be connected to the walking and cycling network and have attractive walking and cycling connections within the site.
- 7.8.19 Policy 3 of the LTCP outlines that Oxfordshire County Council will develop Local Cycling and Walking Infrastructure Plans (LCWIPs) for all urban settlements within the county with a population of 10,000 or more inhabitants. The policy commits the council to delivering the LCWIPs as funding opportunities arrive to promote walking and cycling in line with regional and national targets.
- 7.8.20 Policy 4 of the LTCP requires Oxfordshire County Council to develop a Strategic Active Travel Network (SATN) to expand opportunities to walk and cycle between rural towns villages and key corridors within the County. All opportunities must be taken to connect to and enhance the SATN as new developments come forward.
- 7.8.21 Policy 5 of the LTCP recognises the important role that Public Rights of Way (PRoW) have in connecting the county. The policy seeks to protect and adapt the PRoW network to the worst impacts of climate change as well as making the PRoW network more accessible. The policy outlines that improvements to the PRoW network will be sought from developers both on and off site.
- 7.8.22 Policy 6 of the LTCP seeks to develop a number of Greenways across the county providing routes for people walking, cycling and equestrians by making the most of disused roads, railways, canal corridors and other routes. Priority is given to routes that benefit communities and that have a deliverable route
- 7.8.23 Policy 9 of the LTCP requires all major development schemes to screen for impacts on health and wellbeing and all major infrastructure to provide a Health Impact Assessment that should identify, prevent and mitigate against impacts on health and wellbeing.
- 7.8.24 Policy 15 of the LTCP adopts the 'Vision Zero' approach which seeks to eliminate all fatalities and severe injuries on Oxfordshire's roads and streets by 2050. The policy

requires all stakeholders (including developers) to work together to deliver this approach through collaboration on infrastructure, technological and behavioural changes.

- 7.8.25 Policy 31 of the LTCP seeks to ensure that new approaches and technologies will be employed to manage the network within the county and avoid disruptions. The policy seeks engagement from stakeholders to minimise disruptions on the network and prioritise walking, cycling and public transport at all opportunities.

Commentary

Highway Network

- 7.8.26 The permanent impacts of the proposed development on the highway network are likely to be neutral. However, the construction phase is likely to have localised impacts due to the laying of cables under the carriageway and could see an increase in traffic on key routes and junctions. Localised impacts can also be expected at the decommissioning stage and at the point of any phased replacement of panels as their efficiency depletes (c. 25 years).
- 7.8.27 Impacts will need to be mitigated via the Construction Traffic Management Plan (CTMP) which will specify the routes and times that construction vehicles related to the development are permitted to use. A similar requirement for a CTMP needs to be included in the Outline Decommissioning Plan **[APP-236]** to cover the traffic impact of this phase. Likewise, submission of a CTMP should be included in the Outline Operational Management Plan **[APP-234]** to cover the transport impact of any phased replacement of panels or other significant maintenance works.
- 7.8.28 The OHA believe this revision to the outline documents is required at this stage as the wording of sub paragraph (2) of requirement 12 (Operational Management Plan), and sub paragraph (4) of requirement 14 (Decommissioning and Restoration) **[APP-015]** outlines that both the Operational Management Plan and Decommissioning Plan to be submitted to OHA for approval must be substantially in accordance with the outline documents.
- 7.8.29 OCC as the Highways Authority is currently implementing a series of works to improve the A40. This includes the roundabout where the B4449 meets the A40 which is where the applicant's cable route proposes to cross the A40. It is likely that OCC will seek to implement a notice under Section 58 of the New Roads and Street Works Act (1991) in order to restrict the execution of street works once the improvements to the A40 have been completed.
- 7.8.30 No detailed methodology has been put forward by the applicant to indicate how they intend to lay their cable across the site, including the A40. Given the likelihood of a S.58 notice OCC would not support a methodology which would involve excavation of the improved section of the A40.

- 7.8.31 OCC may be able to support Horizontal Directional Drilling being used to run the cable beneath the improved A40 works. However, OCC would need to agree the details and methodology of the proposed HDD in advance of the applicant commencing works.
- 7.8.32 OCC therefore seeks further clarity from the applicant with regards to the methodology the applicant intends to employ to route their cable across the site, in particular with respect to the A40. OCC would also welcome direct engagement with the applicant to attempt to overcome this issue.
- 7.8.33 OCC would also welcome discussions on the Applicant's proposed highways powers, as set out in the draft DCO **[AS-009]** which, in their current form, are too wide-ranging.

Comments on ES Chapter 12: Traffic and Transport **[APP-049]**

- 7.8.34 Proposed alterations to the highway will need to consider all users in line with LTCP policy 1 – Transport User Hierarchy and 15 – Vision Zero to ensure the most vulnerable road users are prioritised. This would include such proposals highlighted in paragraph 12.7.18 – B4044 Eynsham Road/B4017 Cumnor Road and paragraph 12.7.18 – Widening works on Cumnor Road, B4027 / Banbury Road, Burleigh Road /Yarnton Road junction of the ES **[APP-049]**.
- 7.8.35 Additional highway alterations required as part of the development should align with LTCP Transport User Hierarchy and support policy 1 and policy 15 of LTCP.
- 7.8.36 All HGV and AIL movements should align with LTCP policy 15 to support OCC's Vision Zero Action Plan⁷ which states an ambition to have zero road fatalities or serious injuries on Oxfordshire's transport system by 2050.
- 7.8.37 Paragraphs 12.7.13 – 12.7.16 of **[APP-049]** concern the origin of construction staff movements. Measures to restrict movements on rural roads to reduce the possibility of rat running must be included in the Construction Traffic Management Plan to be submitted as part of the Code of Construction Practice. A bullet point should be added to paragraph 1.5.2 of the Outline Construction Traffic Management Plan (Annex A of the Outline Code of Construction Practice **[APP-232]**) to address this.
- 7.8.38 PROW throughout the site should be protected, maintained or mitigations sought in line with LTCP policy 5.
- 7.8.39 Paragraph 2.10.143 of NPS EN-3 states that applicants should liaise with the local highway authority regarding the start of construction and broad timings of deliveries. We support this in line with LTCP policy 1, 15 and 47 to ensure conflicts between transport users is minimised. Paragraph 2.10.143 of NPS EN-3 also states that Applicants may

⁷ <https://www.oxfordshire.gov.uk/transport-and-travel/road-safety/vision-zero>

need to agree a planning obligation to secure appropriate measures, including restoration of roads and verges

7.8.40 Table 12.6 (issues considered within this assessment; page 31 of [APP-049]) – mitigation must be agreed to ensure the impact on walking, cycling, wheeling and public transport routes is minimised during construction phases. Any changes in travel behaviour may adversely affect OCC's ambition stated in LTCP to replace/remove 1 in 4 car trips and increase the number of cycle trips in Oxfordshire from 600,000 to 1 million by 2030.

7.8.41 Any risk of conflict between HGVs and AILs and vulnerable road users should be mitigated to support LTCP policy 1, 2 and 15.

Public Rights of Way (PRoW)

7.8.42 OCC manages the legal record and access functions on the PRoW and access land network. In addition to the statutory functions of recording, protecting and maintaining PRoW, the authority's role includes securing mitigation measures from residential and commercial developments that will have an impact on the PRoW and access land network in order to make those developments acceptable. This work meets the aims and outcomes of the adopted Oxfordshire Rights of Way Management Plan 2015-2025⁸.

7.8.43 The project area contains a network of PRoW which cross the site and link neighbouring settlements with the surrounding countryside. PRoW provide a recreation resource for communities, support tourism in the locality as a means for visitors to appreciate the Oxfordshire countryside, and support the health and well-being of communities by encouraging active lives and access to nature.

7.8.44 The scale and location of this development and the impact on: local land use; landscape attractiveness; the countryside 'feel' of the area; and on access and amenity for local residents and PRoW users, is significant and unprecedented. The impacts will be felt during construction as well as in the operational period. By enclosing many PRoW with fencing and hedging and constructing large fields of solar panels and supporting large infrastructure, it needs to be understood that the feel of the local environment from the paths, and the quality of the paths themselves, will be significantly affected.

7.8.45 This is at odds with paragraph 2.10.43 of the NPS EN-3 which outlines that '*Applicants are encouraged where possible to minimise the visual impacts of the development for those using existing public rights of way, considering the impacts this may have on any other visual amenities in the surrounding landscape.*'

⁸ www.oxfordshire.gov.uk/rowip

- 7.8.46 Excessively narrow paths enclosed by hedges or fences will have restricted views and are likely to suffer from the effects of shadowing, loss of sun and wind drying and adverse changes to the surface (paths are more likely to suffer from poaching and wear as a used line develops). Hedge species choice can adversely affect users with excessive side and top growth potentially obstructing the path and limiting the width available. Thorny and ‘spiky’ vegetation can be injurious to path users from arisings left after cutting back.
- 7.8.47 Through appropriate mitigation and amendments to the design, the development needs to ensure that, both onsite and offsite, people still feel a connection to the countryside and can enjoy a countryside experience when using PRoW for active travel, leisure and recreational journeys.
- 7.8.48 The OHA’s view on this issue is supported by NPS EN-3 Paragraph 2.10.44 which outlines that *‘Applicants should consider and maximise opportunities to facilitate enhancements to the public rights of way and the inclusion, through site layout and design of access, of new opportunities for the public to access and cross proposed solar development sites (whether via the adoption of new public rights of way or the creation of permissive paths), taking into account, where appropriate, the views of landowners.’*
- 7.8.49 A comprehensive package of measures is required to minimise negative impacts and to mitigate the changes in the local landscape and environment before construction commences, during construction and operation, and in the decommissioning and reversion phases when the additional public access provision must not be lost.
- 7.8.50 Given the development’s role as nationally significant infrastructure, it is vital that a sustainable and inclusive approach to PRoW is taken. The mitigation measures need to be incorporated into specific actions on the ground, agreed with the OHAs and become part of the development proposal.
- 7.8.51 As advised in OCC’s PEIR response (8th February 2024) and in OCC’s Relevant Representation (27th February 2025) [**RR-0793**], the following mitigation measures are required in respect of all PRoW affected by the application:
- All PRoW across the sites that pass through/adjacent to solar fields need to be provided as landscaped ‘greenway’ PRoW – with a minimum 15m overall ‘corridor’ width (additional width to be dedicated), access for small PRoW maintenance vehicles, planted with an appropriate non-injurious/thorny hedge, shrub & tree planting palette. The reason for this provision is so the visual impact and proximity of fencing and built infrastructure is softened whilst still providing wide, clear and accessible paths for people.
 - All fenced-in PRoW need to be stone surfaced to 3m width with 3-4m clear grass verges each side of this, with graded landscaped edges between the path and

the fencing. The full width of the PRoW needs to be dedicated as PRoW to ensure permanent protection.

- Selected PRoW on each of the sites need connecting up within the site to provide a high quality, coherent and connected network with high quality path provision, good signing and accessible infrastructure (gates, seating, water crossings etc). We would welcome discussion with the developer on this .
- The development should provide a range of bridleway PRoW to provide alternative routes for horseriders, as well as walkers and cyclists, to reduce the need to use roads and to increase user safety. These should be provided onsite by the developer, provided within the landownership/control boundary (blue line boundary) by the developer/landowner. Other offsite mitigation should take the form of a financial contribution for offsite mitigation undertaken by the Countryside Access Strategy Team at OCC. This team negotiates and agrees this kind of project with third-party landowners and farmers and undertakes project delivery through private contractors. The scale of this contribution will depend on what onsite/in-control mitigation is agreed.
- PRoW crossed by underground HV and other cables, ditches and ducts etc need to be disturbed as little as possible, if at all. Pipes and cables should be horizontally dug/bored so that the PRoW isn't disturbed. Where this isn't possible, disturbance must be kept to a minimum and the safety of users maximised. This could be achieved by excavating each side of the PRoW and only excavating the PRoW just prior to duct work or the cable being laid. The ditch must not be left open/exposed and should be filled in, compacted/consolidated and path made good immediately after cables laid, in order to reduce disturbance to the path and user.
- Phased and planned temporary closures/diversions of PRoW should only be undertaken when necessary i.e. if works cannot be undertaken with the PRoW open and access made safe by using banksman/fencing etc. Closures should be for a minimal duration to cover the essential works and in all cases an alternative route should be approved by OCC Countryside Access and provided in advance, and maintained for the duration, of the temporary closure.
- No use of PRoW for development purposes other than if essential as a crossing point between fields. All vehicle crossing points to be monitored when active. Crossing point PRoW must be protected from HGV by weight spreading mats, appropriate stone reinforcement, and making good within 24 hours.

7.8.52 Specific mitigation measures were also supplied to the Applicant in OCC's PEIR response (8th February 2024) and in OCC's Relevant Representation (27th February 2025) [RR-0793] with accompanying masterplan maps annotated with lines and codes; these maps are consolidated and reproduced at Appendix 3 of this LIR and should be referred to for the onsite and offsite mitigation measures required to mitigate the development. The measures are not exclusive, and OCC Countryside Access

Strategy would welcome the opportunity to survey all areas and paths to further refine requirements.

7.8.53 A financial contribution of £350,000 (Baxter indexed from April 2024 with a 10 year longstop)⁹ is also considered necessary to secure off-site and out-of-ownership PRow improvements to mitigate the loss of visual amenity and to provide alternatives or extensions of routes in the locality and impact area up to 3km from the boundary of the sites. 3km is considered reasonable to enable the assessment and improvement of key routes in the local area. Improvements will not be needed for all PRow within 3km of the site boundary, just those that enable more user choice about whether or not to pass through the altered landscape of the solar farm.

7.8.54 OCC's PEIR response and Relevant Representation [RR-0783] emphasised the importance of PRow to the public and the negative impact that the solar farm will have on PRow. The Applicant's Consultation Report [APP-024] states "*the Applicant intends to retain all existing PRow throughout the Project area*" (page 43). These PRow will exist in a different context because of the solar farm and the 'countryside feel' that people often seek for leisure and health benefits will be irreversibly changed.

7.8.55 The Consultation Report [APP-024] states: that the "*Applicant is looking at ways the Project can improve the PRow in the area*" (page 43), and that the Project is contributing to "*securing new recreational routes, including permissive paths, cycleways and Green Ways, to mitigate potential adverse effects on public health associated with changes in the use of the PRow network*" (page 125). Whilst some improvements have been proposed and are welcomed, these are limited and do not go far enough to mitigate the impact of the development on PRow. OCC therefore seek further improvements to address this.

Active Travel

7.8.56 Many of the PRow through the application site form part of strategic walking and cycling connections across Oxfordshire, as identified in Oxfordshire's Strategic Active Travel Network (SATN) and Local Cycling and Walking Infrastructure Plans (LCWIP)

⁹ Estimated contribution breakdown*

Site and habitat surveys & assessments 5%

Landowner negotiations and agreement payments 5-10%

Outline/high-level design allowance 5%

Admin processes e.g. consultation, project management <5%

Legal processes e.g. temporary works closures, creation agreements and contracts 5%

Detailed design/ Walk&Talk/ Early Contractor Involvement 5%

Materials, plant & equipment 60%+

Contingency/Risk and ongoing quality standard retention 10-20%

*All allocations are estimates. Any contribution would be aggregated across routes and activities and a longstop of 10 years will be requested.

(see: OCC Active Travel Strategy¹⁰); the development of these is a key priority for OCC and is tied in with the goals of the Local Connectivity and Transport Plan¹¹ which seeks to reduce 1 in 4 car trips by 2030 and deliver a net zero transport network by 2040.

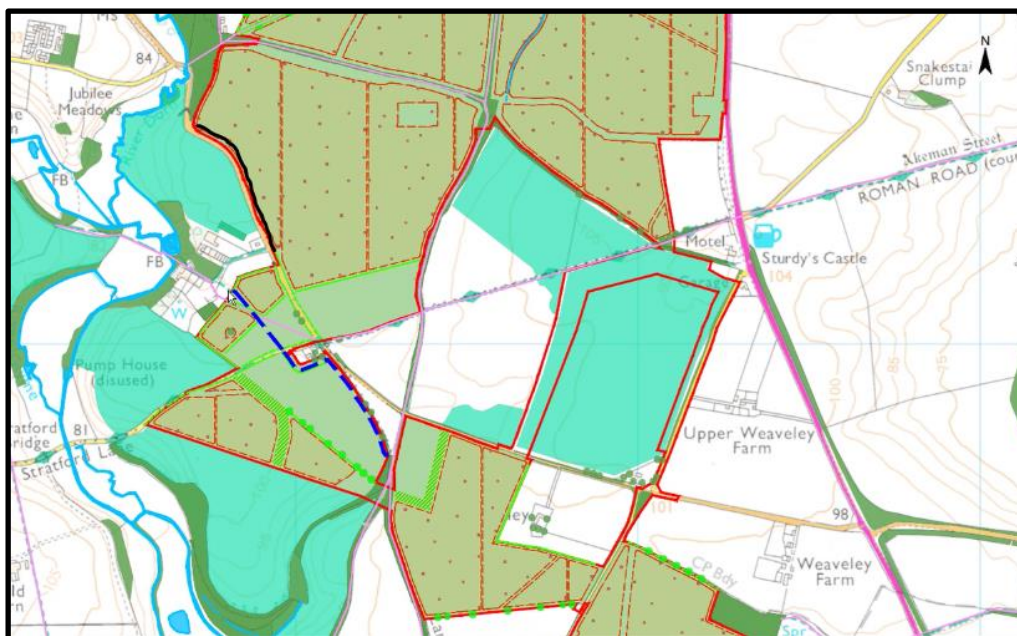
- 7.8.57 The health benefits of active travel are well known and supported (including in Oxfordshire's Health and wellbeing strategy 2024 – 2030¹²). The delivery of new active travel connections as part of the proposed development would support healthier choices and is required to mitigate the negative impacts of the proposal.

Proposed and Additional Suggested Active Travel Improvements

Wootton to National Cycle Route 5

- 7.8.58 Whilst OCC welcome the Applicant's proposed walking and cycling route, which is indicated by the blue dotted line on Transport Figure 1 below, we consider it should be surfaced so that it is appropriate for walking, cycling and horse riding (e.g. by using compact gravel) and request that the Applicant confirms that this will be taken forward. In addition, the Applicant should provide the linking bridleway between 416/20/10 and 416/2/50 as indicated by the black line on Transport Figure 1, also using compact gravel or similar. This will enable safe and continuous connectivity between the public rights of way within the site and ensure the countryside can still be accessed and enjoyed.

Transport Figure 1 - Wootton to NCN 5 connection



¹⁰ <https://www.oxfordshire.gov.uk/transport-and-travel/connecting-oxfordshire/active-travel>

¹¹ <https://www.oxfordshire.gov.uk/transport-and-travel/connecting-oxfordshire/ltcp>

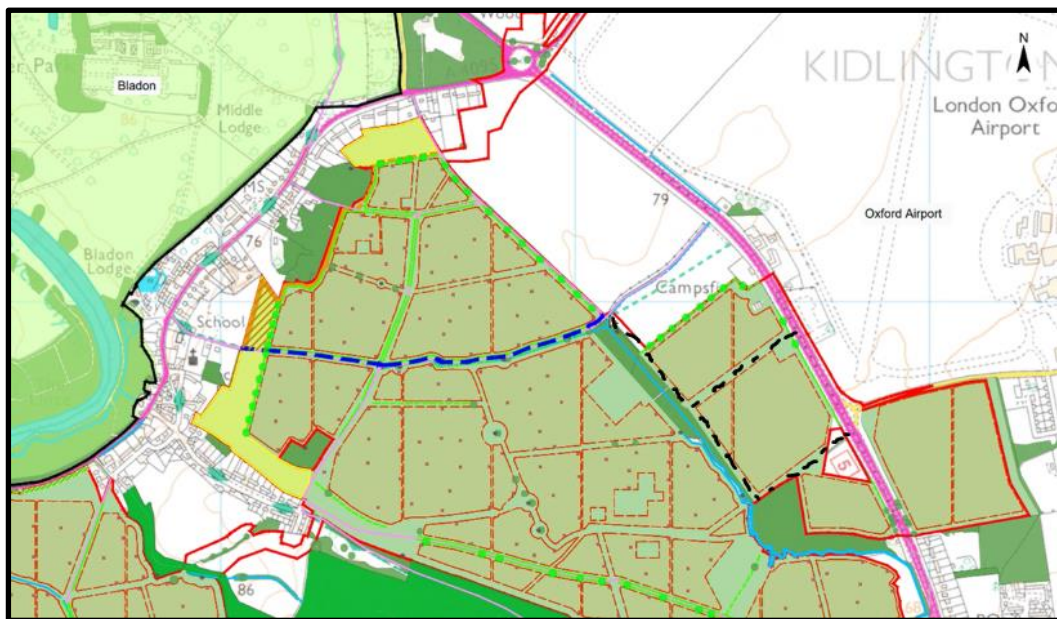
¹² <https://www.oxfordshire.gov.uk/sites/default/files/file/constitution/oxfordshirejointhwbstrategy.pdf>

Bladon to Begbroke walking and cycling route

7.8.59 'A track from Bladon to Begbroke across the site' is proposed and this is welcomed (being also identified in the Woodstock LCWIP and OCC's Strategic Active Travel Network ("SATN")). For the improvements to have strategic benefit OCC require walking and cycling to be permitted. Therefore, a change from footpath to cycle track is sought. Furthermore, the current depiction of this track (indicated by the blue line in Transport Figure 2) – which is labelled a cycle path on plans (but recorded as footpaths 132/2/10 and 265/26/10), does not connect to Bladon or Begbroke. Currently the proposed cycle path connects to a footpath 124/12/10 before joining the A44, so continuous cycling is not possible along this route.

7.8.60 OCC seek the Applicant to deliver a cycle path through their site from Begbroke to Langford Lane (a key employment and residential gateway). We seek further discussion with the Applicant regarding the opportunities for cycle paths shown by black dashes in Transport Figure 2. These paths should be surfaced with flexipaving or similar.

Transport Figure 2 - A4095 Bladon to A44 Begbroke walking and cycling route



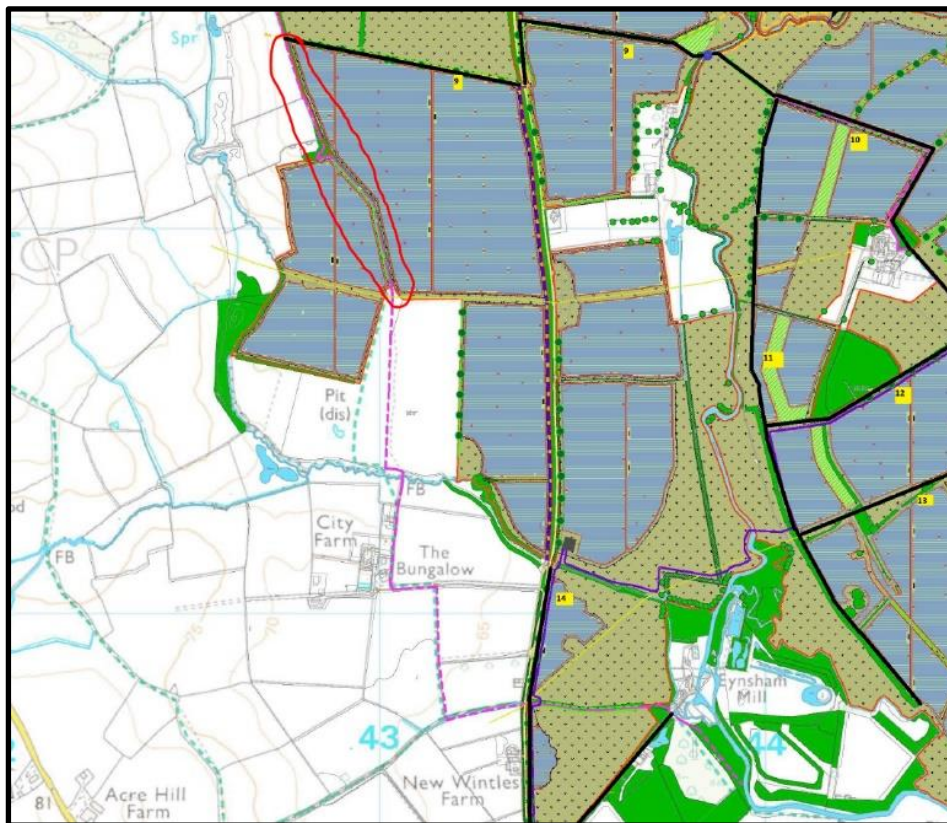
Strategic walking and cycling connections

7.8.61 As outlined in both OCC's PEIR response and Relevant Representation [RR-0793], OCC have two planned strategic walking and cycling improvement schemes that interact with the solar farm. One such scheme is a connection between Eynsham and Hanborough, which forms part of OCC's SATN. OCC are pursuing two routes between Eynsham and Hanborough – a PRoW route that crosses the solar farm site (shorter-term ambition) and a route adjacent to Lower Road (longer-term ambition).

7.8.62 OCC request that the Applicant convert the section of PRow through their site (known as footpath 238/5/20), circled in red in Transport Figure 3 below, to a bridleway with compacted stone surface to seamlessly connect into other PRow improvements suggested by OCC. This will contribute to OCC's planned PRow connection between Eynsham and Hanborough and compensate current and future residents and visitors of the area for the negative impact on the landscape and 'countryside feel' that the solar farm would have.

7.8.63 In addition, OCC request that land along the western and eastern verges of Lower Road be safeguarded for future development of a walking and cycling route. The proposed route between Eynsham and Hanborough via Lower Road links in with the planned B4044 Eynsham to Botley cycle route. Both routes in part overlap with the proposed cable route for the solar farm.

Transport Figure 3 - OCC planned PRow route between Eynsham and Hanborough



7.8.64 The Applicant has not finalised details of the cable laying, but if trenches are dug along the planned routes, a requirement of the DCO should be to agree details of their reinstatement to ensure compatibility with the future cycle path construction.

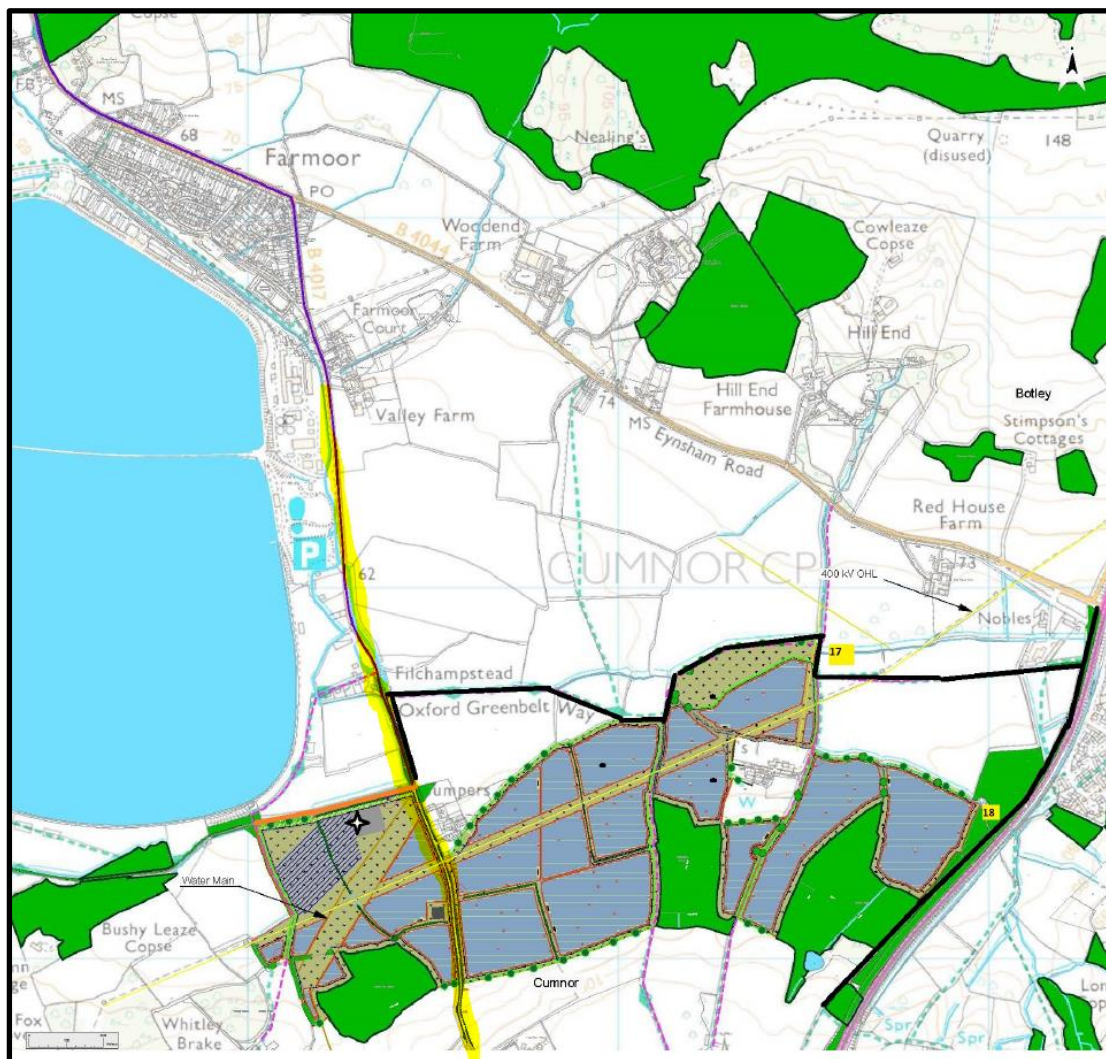
Transport Figure 4 - OCC planned strategic walking and cycling connections



Southern section B4017 speed limit change

7.8.65 The B4017 between Farmoor and Cumnor is indicated as the route of underground cables and the access for a construction compound serving the solar farm. This is a proposed strategic route within Oxfordshire's SATN. Additional heavy goods vehicles on this route caused by the solar farm will pose a road safety risk for people cycling on this road. Accordingly, the Applicant proposes a speed limit change within Part 1 of Schedule 8 to the draft DCO – "B4017 Cumnor Road between a point 83 metres to the south of Farmoor Court and a point 170 metres to the north of Leys Road as shown on sheets 12 and 13 of the traffic regulation measures plans". In the location mentioned above, Part 1 proposes a "temporary change in speed limit to 40 miles per hour". OCC would want this as a permanent change to the speed limit and seek £5,000 (index linked) for the erection of signage to support the speed limit change. If a Traffic Regulation Order variation is required for a permanent change in speed limit, the cost would be £4,224 (RPIX index linked at April 2025 price base).

Transport Figure 5 - B4017 speed limit change



Adequacy of the application/DCO

Highway Network

- 7.8.66 Impacts will need to be mitigated via the Construction Traffic Management Plan (CTMP) which will specify the routes and times that construction vehicles related to the development are permitted to use.
- 7.8.67 OCC would welcome discussions on the Applicant's proposed highways powers, as set out in the draft DCO which, in their current form, are too wide-ranging. For instance, and to name but three of our concerns, OCC is concerned by (i) the absence of a need for consent before carrying out the street works mentioned in article 8(1) (street works), (ii) the absence of a need for consent before carrying out the works mentioned in article 9(1) (power to alter layout, etc. of streets), and (iii) how OCC will be resourced to carry out additional highways-related work proposed by the draft DCO. Further detail on DCO requirements is set out in section 8.

PRoW

- 7.8.68 The proposal does not adequately consider the impacts of the development on users of the PRoW network. Mitigation requirements have been set out above.
- 7.8.69 The draft DCO does not contain any provision for improvements to existing PRoW and creations/extensions and status upgrades. As it stands the draft DCO only contains permanent/temporary closures, diversions and replacements, permanent and temporary vehicle use of PRoW and includes a reference to PRoW under management.
- 7.8.70 The OHA question whether the draft DCO can replace the provisions in TCPA 1990 and Highways Act 1980 for changes to PRoW as there is insufficient detail provided in the plans, table or text for an assessment of impact and reasonableness to be made. Specifically for PRoW there needs to be a justification of the need for change, the length and width of the affected PRoW, the length, width, gradient, surfacing and limitations of the proposed alternative PRoW.
- 7.8.71 The draft DCO needs to include provision for the effective monitoring, maintenance, repair and restoration of the affected PRoW during construction and operational phases and the involvement of the highway authority. This is included under part 3 'Streets' for public roads but it is not clear about its application to public rights of way.
- 7.8.72 It is unclear why public rights of way are ordered by district council area when the surveying and managing authority is OCC.
- 7.8.73 OCC would like to see closures reduced to the bare minimum and continuity/certainty of access as much as possible, and effective management and maintenance of the diverted routes.
- 7.8.74 Noting the powers contained in article 11(1)(b) (Temporary closure of public rights of way), OCC consider the draft DCO should not authorise any use of vehicles on PRoW which remain open without first undertaking an assessment of impact and putting in a prevention, repair, maintenance and monitoring scheme for each proposed route, to be approved by the highway authority (Oxfordshire County Council).
- 7.8.75 In addition, it would be helpful if the Applicant could explain why article 11(4) refers to "street authority" and not "highway authority". The same point applies to article 12(2) (permanent closure of public rights of way).

Conclusion on Traffic and Transport (including Public Rights of Way):

Highway Network Impact:

- a. construction phase: **negative**
- b. operational phase: **neutral**
- c. decommissioning phase: **negative**

Public Rights of Way Impact - **negative**

7.9 Noise and Vibration

Summary

- Noise impacts of the proposed development on the open countryside and users of the PRoW network have not been fully assessed.
- The OHA consider that many noise and vibration effects can be mitigated through various embedded mitigation measures as proposed in the Outline Code of Construction Practice [APP-232 / APP-233] and Outline Operational Management Plan [APP-234] documents supporting the DCO.

Mitigation / Improvements

- Locate noise generating parts of the development sufficient distance from noise sensitive receptors.

Key Policies / Compliance

Table 13 - Development Plan policies relevant to Noise and Vibration

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not Assessed
Cherwell	CLP ESD5: Renewable Energy	Compliant
Vale of White Horse	LPP2 DP23: Impact of Development on Amenity LPP2 DP25: Noise Pollution CNP EBC2: Farmoor Reservoir	Compliant
West Oxfordshire	WOLP EH8: Environmental Protection	Conflict identified
Oxfordshire County Council	N/A	

Policy Detail

- 7.9.1 Policy ESD5 of CLP supports renewable and low carbon energy provision wherever any adverse impacts can be addressed satisfactorily. Potential adverse impacts listed in the policy are Residential Amenity.

- 7.9.2 Policy DP23 of LPP2 seeks to ensure that proposals will not result in significant adverse impacts on the amenity of neighbouring uses. Factors to be considered are:
- Loss of privacy, daylight, or sunlight.
 - Dominance or visual intrusion.
 - Noise or vibration.
 - Dust, heat, odour, gases, or other emissions.
 - Pollution, contamination, or the use of / or storage of hazardous substances
 - External lighting
- 7.9.3 Policy DP25 of LPP2 seeks mitigation for noise sensitive development.
- 7.9.4 Policy EBC2 of CNP states development proposals located within the environs and setting of Farmoor Reservoir which would enhance the recreational use of the reservoir and its surroundings will be supported subject to not having an unacceptable impact on the residential amenity of houses in the locality by reason of noise, disturbance, vibration or other impacts, the reservoir's function and setting are retained and public access to the reservoir is safeguarded and where practicable enhanced.
- 7.9.5 Policy EH8 of WOLP confirms proposals which are likely to cause pollution or result in exposure to sources of pollution or risk to safety, will only be permitted if measures can be implemented to minimise pollution and risk to a level that provides a high standard of protection for health, environmental quality and amenity.
- 7.9.6 New development should not take place in areas where it would cause unacceptable nuisance to the occupants of nearby land or buildings from noise or disturbance.

Commentary

- 7.9.7 Noise and vibration will be created during construction and decommissioning and such activities may result in changes to noise during the day and at night. Some specific activities (such as concrete pouring) may require periods of night-time working but it is noted most construction work would occur during normal daytime working hours (specified as 7.00am to 7pm Mondays to Saturdays). Once completed there is the potential for operational noise effects associated with substations.
- 7.9.8 WODC have previously highlighted concerns regarding the noise impacts of the proposal during the operational phase of the development, particularly noise impacts of the Power Converter Stations and Sub Stations.
- 7.9.9 The applicant has assessed the impacts on noise sensitive receptors in proximity to the proposed development (primarily residential properties neighbouring the site). It is not clear whether schools within 1km of the site have been included in the assessment which was raised in OCC's RR [RR-0793]. It also appears that the

assessment does not extend to users of the public rights of way network and associated impacts on the tranquillity of the countryside.

- 7.9.10 The modelled noise emissions level for Power Converter Station (PCS) units is up to 92 dB(A) [APP-213] There are 156 such units proposed across the project area. The applicant's baseline assessment of background noise, from both short term and long-term monitoring positions indicates sound levels well below this with maximum daytime noise level of 69 dB at LT6, adjacent to Lower Road within the Central Site. The background noise at this monitoring position is dominated by road traffic.
- 7.9.11 The applicant's solar design parameters have previously indicated a noise impact of 67 dB at 10m distance from each PCS. A rough calculation, based on the development of 156 PCS units across the site equates to an area of 5ha, where the noise impacts would exceed the monitored baseline position adjacent to a main highway.
- 7.9.12 It is considered that noise impacts of the project will have a detrimental impact on the environmental quality and amenity of the countryside, particularly in proximity to public rights of way, contrary to Local Policy.

Adequacy of the application/DCO

- 7.9.13 Chapter 13 of the ES [PDB-010] considers noise and vibration during construction and operation on residential property. It is considered the ES contains adequate information for the ExA to assess the impact of the proposal on noise and vibration.

Hours of Operation during Construction Phase

- 7.9.14 Whilst it is noted that core working hours of 07:00H-19:00H Mon-Sat are proposed in the Outline Code of Construction Practice Part 1 [APP-232] it is recommended that construction hours are limited to the following: 07.30H-18.00H Monday to Friday, 07.30H-12.30H on Saturdays and no time on Sundays, Bank and Public Holidays as per CDC's S42 response to the applicant on 08 February 2024.

Noise Sensitive Receptors

- 7.9.15 The assessment of noise impact to date has only taken account of noise-sensitive properties (NSP's) i.e. residential and other buildings. This reflects the approach in the British Standard (BS 4142).
- 7.9.16 It is advisable that an appropriate assessment should also be made for noise impacts to public rights of way, given: -
- regular use of those rights of way by residents of NSP's in the vicinity of their dwellings as well as use of public rights of way by the public, this can include horses and riders on bridleways
 - PROW are located in many cases in areas of tranquillity
 - the duration of the development

- 7.9.17 On a relevant technical note, it can be noted that, within the assessment matrix for Noise Impact [**APP-050**] (ES, Table 13.18, p.39), even with ‘low’ or ‘negligible’ ratings for ‘sensitivity of receptor’, the magnitude of impact can be rated as ‘Minor’ - the explanation of this term being:

These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.

Background Noise Assessment

- 7.9.18 A key element of assessments made under BS 4142 is the figure for ‘representative background noise’ at a receptor, which is compared with the rating level for a new sound source. This provides an assessment of impact, subject to an assessment of context, which informs necessary measures of noise control.
- 7.9.19 Within the ES, WODC wish to review the derivation of the representative background levels. This will involve access to the raw data of all measured background levels for each assessed location. Such information would routinely be included in an acoustic report and in this case, there will be a high volume of data involved.
- 7.9.20 The OHA consider that many noise and vibration effects can be mitigated through various embedded mitigation measures proposed in the Outline Code of Construction Practice [**APP-232 / APP-233**] and Outline Operational Management Plan [**APP-234**] documents supporting the DCO.
- 7.9.21 The DCO (Sch2 Req12) also requires an operational management plan to be submitted to and approved by relevant planning authorities before work on the solar farm commences. Provided a satisfactory plan is submitted, the OHA consider the impact of noise and vibration on residents can be addressed.

Conclusion on Noise and Vibration

Impact – **neutral**

7.10 Climate Change / Resilience

Summary

- The proposed development would make a contribution to renewable energy generation capacity in Oxfordshire and support objectives of achieving net zero in the county by 2050
- The project aligns with the OHA's target of becoming a zero-carbon County by 2050.
- Oxfordshire's leading the way target is to achieve a 6% share of the UK solar PV capacity by 2050. This equates to 5,314 MW of installed capacity, resulting in a generation of 5,214 GWh in 2050.
- The OHA have concerns about the resilience of the project to climate change and consider that the risks have not been adequately assessed.
- The OHA would like to see more detail about how, in particular, the embodied carbon of the panels, their transport from their place of manufacture (which may well be outside the UK) to the site, and the construction traffic will be managed.

Mitigation / Improvements

- The Applicant should take steps to ensure the development is resilient to the impacts of projected future climate change.
- The OHA request that the Applicant provides a Climate Change Resilience Assessment, that responds to the risks outlined in OCC's Climate Risk Assessment, and meets the requirements of NPS EN-1, and shows a broader understanding of potential future climatic risks that could disrupt the solar farm.
- Every panel or piece of equipment that has to be replaced over the lifespan of the project due to adverse climate impacts, has an embodied carbon cost, and the efficiency of the equipment will decrease during events such as heatwaves or dry, dusty periods, therefore mitigation through appropriate maintenance and risk assessment should be a priority.

Key Policies / Compliance

Table 14 - Development Plan policies relevant to Climate Change and Climate Change Resilience

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP ESD1: Mitigating and Adapting to Climate Change CLP ESD2: Energy Hierarchy and Allowable Solutions CLP ESD3: Sustainable Construction CLP ESD6: Sustainable Flood Risk Management CLP ESD8: Water Resources	Conflict identified with ESD1 and ESD3
Vale of White Horse	LPP1 CP40: Sustainable Design and Construction	Conflict

West Oxfordshire	EH6 - Decentralised and renewable or low carbon energy development	
Oxfordshire County Council	Oxfordshire Energy Strategy 2018 2021 Pathways to a Zero Carbon Oxfordshire 2021 Oxfordshire Net Zero Route Map and Action Plan	

Policy Detail

7.10.1 Policy CP40 of LPP1 encourages developers to incorporate climate change adaptation and design measures to combat the effects of changing weather patterns in all new development.

7.10.2 The Oxfordshire Energy Strategy¹³ has been developed to inform Oxfordshire's growth ambitions as a county, and its transition to a low carbon energy system. The vision of the strategy is for Oxfordshire to be "at the forefront of energy innovation to foster clean growth". The Strategy has three main objectives:

- Secure a smart, modern, clean energy infrastructure – including increased electricity grid capacity - which supports our planned housing, industrial and commercial growth, and changing energy requirements.
- Lead nationally and internationally to reduce countywide emissions by 50% compared with 2008 levels by 2030 and set a pathway to achieve zero carbon growth by 2050.
- Enhance energy networking and partnership working across Oxfordshire to focus on the low carbon energy challenges and funding opportunities created through the Clean Growth Strategy and the Oxfordshire Industrial Strategy.

7.10.3 Oxfordshire has ambitious net zero targets which will be driven by the generation of renewable energy within the county, of which solar generation will be a key source. Local generation will be essential to ensure energy security and meet local demand.

7.10.4 To address electricity network constraints which are a constraint on growth within the county, the priority is to work with Distribution System Operators (DSOs) to ensure the network is smart and flexible, balancing local demand and supply and able to connect local clean energy supplies for new and existing developments,

7.10.5 Scaling up energy generation is a key focus of the strategy. By 2030 at least 56% of Oxfordshire's electricity demand and 40% of its heat requirement needs to be met by renewables if it is to meet its carbon reduction targets.

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<https://mycouncil.oxford.gov.uk/documents/s44917/Oxfordshire%20Energy%20Strategy%20DRAFT%20FINAL%20November%202018.pdf>

7.10.6 OCC's **Climate Action Framework** sets out the council's approach to tackling the climate emergency. One of the key outcomes of the framework is enabling a zero carbon Oxfordshire by 2050. It supports the objectives in the Energy Strategy (outlined above).

7.10.7 The Climate Action Framework has two specific areas which are relevant to this application:

Infrastructure and Systems - Through the council's strategic planning and economic development roles, and working as a regional partner it will support and facilitate:

- Smart, flexible, local renewable generation that enhances local resilience identified in strategic planning
- Community ownership of energy generation and storage assets.

Natural Carbon Management - Through the council's planning policies and as a community and regional partner it will ensure Oxfordshire:

- Takes advantage of 'natural capital' assets such as soils, woodlands, hedges and ponds in order to capture and store carbon and are valued by communities
- Explore the opportunities for protection, conservation and enhancement of carbon capture and storage through our natural environments

7.10.8 The **Pathways to a Zero Carbon Oxfordshire Report (PaZCO)** addresses the need and opportunity for Oxfordshire to maintain momentum to achieve net zero emissions. It examines a series of scenarios that could lead to the delivery of net zero emissions within the county and the implications of these scenarios on different sectors.

7.10.9 In considering low carbon energy generation, the report notes that solar energy is Oxfordshire's greatest low carbon energy generation resource with the county already contributing more than 3% of the total UK solar photovoltaic capacity.

7.10.10 There is significant potential to expand local solar PV electricity generation, and each of the pathways within the report includes substantial deployment. Increasing local renewable electricity generation is needed in response to an expected doubling of electricity demand due to the electrification of heating, transportation and high population growth, ensuring Oxfordshire takes a leading role in the decarbonisation of the electricity sector nationally.

7.10.11 To maximise local benefits, focusing on partnership working and facilitating the proven appetite for community energy are essential.

7.10.12 PaZCO is accompanied by the **Oxfordshire Net Zero Route Map and Action Plan (ONZRMAP)** which identifies areas from the PaZCO report which can be delivered through collaboration between the Oxfordshire local authorities, and sets out the

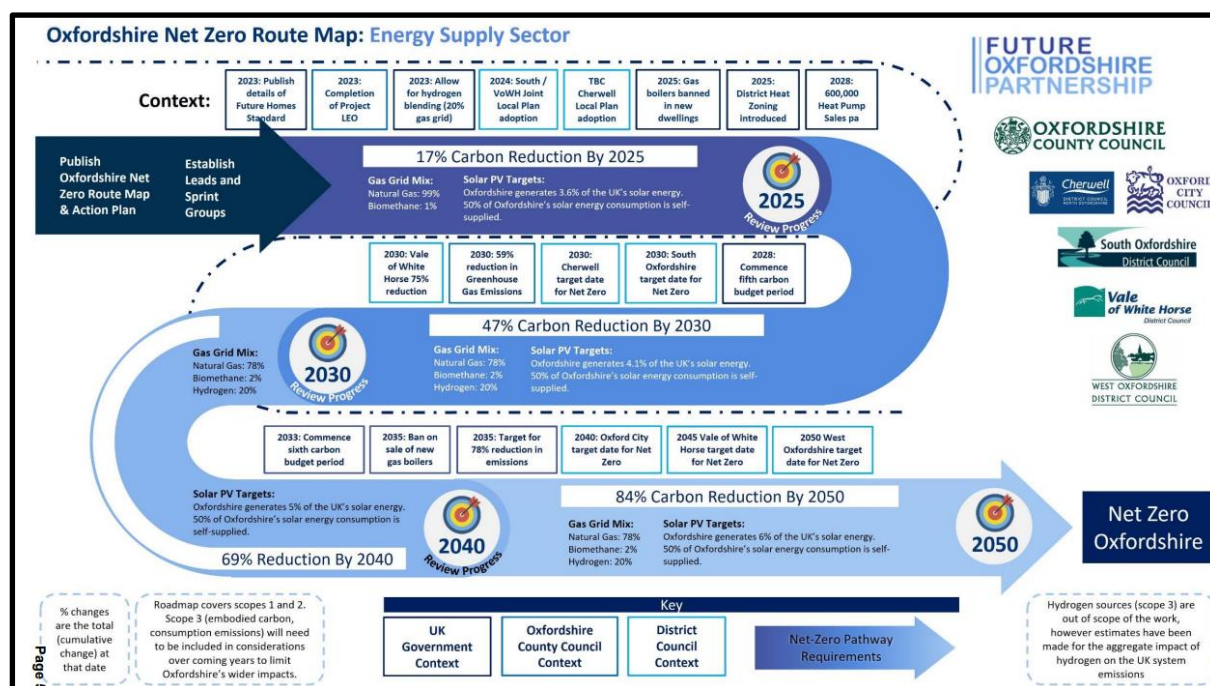
results of the net zero pathway modelling which represents a viable, recommended pathway to net zero within the current context.

7.10.13 PaZCO ONZRMAP adopts the ‘Oxfordshire Leading the Way’ scenario, which assumes Oxfordshire’s share of the UK solar PV capacity reaches 6% by 2050, which equals 5,314 MW of installed capacity, resulting in a generation of 5,214 GWh in 2050.

7.10.14 By 2030, Oxfordshire would have to quadruple its installed PV capacity, requiring an average annual deployment of 120 MWp from 2020 to 2030. To reach the 2050 goal, the capacity of PV in Oxfordshire would have to increase 13 times against the base year deployment, requiring an annual average deployment of 164 MWp across the 30-year period. This is a substantial deployment rate considering the total deployment in the base year is in the region of 400 MWp. Delivery of this ambition will require a significant increase in PV installations on existing buildings (both commercial and domestic) and ground mounted arrays.

7.10.15 A breakdown of the targets for the energy supply in the county is provided below.

Climate figure 1 - Oxfordshire Energy Targets



Commentary

7.10.16 The OHA understand the benefits of renewable energy generation and recognise the role that solar PV technology will play both in delivering on net zero targets at a local and national level, and in addressing energy security through local generation. Renewable energy has an important part to play in achieving the county’s ambitious

net zero targets and we are therefore supportive of renewable energy developments in general.

7.10.17 The project aligns with OCC's target of becoming a zero-carbon County by 2050. As outlined in OCC's Climate Action Framework 2020, the county plans to achieve net zero-carbon status by 2050 through various initiatives, including promoting smart and clean energy infrastructure, supporting solar power usage across the county, and enhancing future resilience.

7.10.18 The development of Botley West Solar Farm will therefore align with OCC's future climate plans and targets of reducing emissions by 50% by 2030 and then reach net-zero carbon by 2050.

Adequacy of the application/DCO

7.10.19 OCC have some additional climate-related considerations that the project should address, concerning the resilience of the scheme to the impacts of climate change, the impact of the scheme itself on the resilience of the site, and the robustness of the outline greenhouse gas reduction strategy.

Resilience of the Scheme

7.10.20 Section 4.10 of the Overarching National Policy Statement for Energy (EN-1) highlights the need for considering climate resilience across projects.

7.10.21 Our observation is that Chapter 14: Climate Change [APP-051] places more emphasis on carbon assessment rather than integrating climate resilience throughout the entire project.

7.10.22 The Applicant has scoped out an assessment of the risks to the project from climate change. As stated in Table 14.6 of Chapter 14 of the ES [APP-051] (issues scoped out of the assessment) "risks to the Project from climate change are scoped out of the assessment, as these are not considered likely to be significant during the Project's operating lifetime". Table 14.6 further states that "... extreme weather events are not considered to cause significant environmental effects on the Project."

7.10.23 In reviewing ES Chapter 14 [APP-051] it is considered that the Chapter lacks sufficient detail to support its exclusion from being assessed as part of the ES, for the reasons stated below:

- The applicant did not provide a clear scientific justification for excluding potential climate risks from the assessment.
- The OCC Climate Risk Assessment (CRA) 2024 projects an increase in the frequency and intensity of climate hazards. Key hazards include heatwaves, flooding, high winds wildfires and storms.
- Oxfordshire has already experienced storms, with Storm Henk in January 2024 causing significant damage across the county. In other parts of the UK, extreme

weather events have impacted solar farms, as in the case of Low Burntoft Solar Farm. In 2021, Storm Arwen disrupted the solar farm, resulting in damage to the solar PV panels.

- In addition, projections indicate that future heatwave risk under both 2°C and 4°C climate scenarios will likely increase across Oxfordshire in the 2050s.
- The OCC Climate Risk Assessment (CRA) includes an extreme value analysis for extreme heat and flooding across the county, using the RCP4.5 and RCP8.5 scenarios, representing medium and high scenarios, respectively. The analysis for the 2050s, revealed that a 1% annual probability extreme heat event may potentially reach 43.5°C under RCP4.5 and 44.3°C under RCP8.5 by 2055. Furthermore, a 1% annual probability heavy rainfall event could reach 118.8mm under RCP4.5 and 122.2mm under RCP8.5 by 2055.
- The solar farm has a 37.5-year lifespan and is anticipated to begin operations in 2028, indicating that decommissioning will occur around 2066. It is likely that, by this time, the county will already be facing extreme climate-related risks, which could potentially affect the Botley West solar farm's operations.
- Despite the flood risk assessment for the three sites (Northern, Southern, and Central) concluding that the risk of river flooding and surface water flooding is low, as solar panels and related equipment will be installed in Flood Zone 1 [less than 1 in 1000 annual probability of flooding (<0.1%)], along with other mitigation measures, the OCC CRA indicates that under the extreme 4°C scenario, flood events will increase in frequency with impacts on infrastructure if flood resilience is not considered in design.
- The above risks are further supported by the UK's Third Climate Change Risk Assessment (CCRA3) 2022, which underscores that climate change impacts will continue to escalate, even under low climate change scenarios.
- Both the National Policy Statement EN-1 (paragraph 4.10.1) and the December 2024 update to the NPPF explicitly state the need to consider adaptation measures within new development, and demonstrate that adaptation and resilience to the impacts of climate change are national priorities.

7.10.24 The Applicant should take steps to ensure the development is resilient to the impacts of projected future climate change, as modelled in the Met Office UK Climate Projections (UKCP18) RCP 8.5 emission pathway, which estimates an increase 4.3°C by 2081-2100. This scenario is likely to result in a variety of climate change hazards from hotter and drier summers, wetter winters, to more intense storm events and prolonged vegetation growth periods.

7.10.25 OCC request that the Applicant provides a Climate Change Resilience Assessment, that responds to the risks outlined in OCC's Council Climate Risk Assessment, and meets the requirements of NPS EN-1, and shows a broader understanding of potential future climatic risks that could disrupt the solar farm.

Maintenance of the Scheme

- 7.10.26 Table 14.10 (mitigation measures intended to be adopted as part of the Project), item 14.12 of [APP-051] states “regular planned maintenance of the Scheme will be conducted to optimise efficiency of the Scheme infrastructure, such as replacement of PV modules and PCS, when required”.
- 7.10.27 We are in support of this, as regular maintenance will not only assist the applicant in identifying potential problems that could affect the solar PVs panels’ efficiency but ensure that resilience of the solar farm is enhanced as early as possible.
- 7.10.28 We would also like the applicant to incorporate a climate risk review into the maintenance process and provide mitigations within the Operational Maintenance Plan [APP-234]. While the Plan includes provision for replacement of up to 100% of the panels and assumes their design life of 25 years, this has not considered the likelihood of additional damage from extreme weather events caused by climate change, or the potential for replacement technologies which will undoubtedly become available during the project lifespan to have a higher level of embodied carbon.
- 7.10.29 Every panel or piece of equipment that has to be replaced over the lifespan of the project due to adverse climate impacts, has an embodied carbon cost, and the efficiency of the equipment will decrease during events such as heatwaves or dry, dusty periods, therefore mitigation through appropriate maintenance and risk assessment should be a priority.

Impacts of the Scheme on Climate Resilience

- 7.10.30 The impact of the proposed development on (non-greenhouse gas) climate impacts in the local area are likely to be small, however without a proper assessment of climate-related hazards (as per the issues scoped out of assessment [APP-051]) they cannot be fully realised.
- 7.10.31 It was noted in OCC’s Relevant Representation [RR-0793] that runoff rates from the site must be controlled with adequate mitigations such as vegetation cover beneath the panels and ensuring the ground is not compacted during construction and maintenance (paragraph 6.2). Increased risk of extreme weather from climate change, including higher levels of rainfall, storms and flash flooding, will exacerbate these impacts and could cause other issues such as localised soil erosion where rainwater running off the panels could result in channels in the ground beneath.
- 7.10.32 This demonstrates the importance of understanding the likely impacts of a changing climate on the site, in order to inform mitigations against unintended impacts of the site on the land and the surrounding communities.

Greenhouse Gas Reduction Strategy

- 7.10.33 In previous consultations (Appendix 1, 2 and 3 of OCC's response to action point 17 of ISH1), OCC enquired about the exclusion of decommissioning from the GHG emission assessment.
- 7.10.34 The applicant considered that and included GHG emissions arising from the decommissioning phase of the solar farm in the assessment. The applicant highlights that some of the carbon emissions associated with this stage come from land use change and transport emissions. Further supporting this, the applicant developed an Outline GHG Reduction Strategy. The Strategy highlights the applicant's plan of reducing carbon emissions from construction, operation and maintenance, and decommissioning.
- 7.10.35 However, the Outline GHG Reduction Strategy [**APP-216**] makes limited mention of the potential for increased carbon sequestration on the site, which will support the overall carbon reduction strategy as well as Biodiversity Net Gain requirements.
- 7.10.36 Paragraph 3.2.7 states that "Key consideration has been given to land with high carbon stock such as woodland and peat, and the potential for its disturbance by construction activities. Given that it was determined that no such areas would be disturbed by the Project due to no significant carbon stores were found within the site area. [...] Emissions arising from changing land use have not been considered further."
- 7.10.37 While this may be the case, there are opportunities to simultaneously increase sequestration through appropriate planting and land management, reduce flood risk and minimise other impacts which could subsequently lead to emission of greenhouse gases, such as soil erosion from runoff.
- 7.10.38 Section 4.2 of the Outline GHG Reduction Strategy [**APP-216**] lacks detail on the actual mechanisms for reducing GHG emissions at each stage of the project. While we accept that this is an outline strategy, and a more detailed GHG reduction plan will be submitted later in the process, paragraph 2.1.4 also states that "The ability to achieve GHG emissions reduction for the project reduces over time. This makes it important that the emissions reduction measures and opportunities are considered from the outset or at the earliest practical point."
- 7.10.39 Given this stance, we would like to see more detail about how, in particular, the embodied carbon of the panels, their transport from their place of manufacture (which may well be outside the UK) to the site, and the construction traffic will be managed. While transport emissions have been indicated as a 'minor' (paragraph 3.2.2) they are emissions which will directly impact the communities surrounding the site and impact Oxfordshire's ability to meet its own transport emissions targets. All possible interventions should be taken to eliminate, as far as reasonably possible, these emissions during the site construction and decommissioning stages in particular.

Possible climate adaptation measures

- 7.10.40 The OHA acknowledge that some climate adaptation measures are addressed in certain DCO application documents.
- 7.10.41 Notably, the applicant's commitment to increasing hedgerow areas is commendable. Over 25 km of new hedgerows will be planted, and an additional 22 km of hedgerow reinforcement will be carried out. Hedgerows and woodland corridors serve a crucial role as carbon sinks and green infrastructure components.
- 7.10.42 Furthermore, the Flood Risk Assessment [**APP-166**] includes several mitigation measures, such as focusing on the development for the Northern, Southern, and Central sites within Flood Zone 1, which has a less than 0.1% annual chance of flooding and all solar panels will be raised to 800mm at the lower leading edge, placing them at least 300mm above any identified surface water flood depths. Moreover, a 25% climate change allowance will be applied, and the Conceptual Drainage Strategy [**APP-167**] contains drainage measures to contain surface water runoff.
- 7.10.43 Further adaptation measures suggested for inclusion are provided below.

Community Energy & Just Transition

- 7.10.44 Delivering a just transition to net zero is an essential part of OCC's net zero strategy and is a key intended outcome of the PaZCO ONZRMAR. Extremely large schemes like Botley West Solar Farm leave less opportunity for communities to develop their own locally owned energy schemes, which remains a crucial part of delivering a just transition. The Clean Power 2030 Plan, PaZCO and the forthcoming Local Area Energy Plan for Oxfordshire consider equity and fairness as part of their overarching frameworks, and the delivery of large schemes such as Botley West will have an impact on a just transition without due consideration, and if replicated at a similar scale across the county.

Climate Change Resilience Review

- 7.10.45 We suggest that a separate section within the ES [APP-051] should be dedicated to Climate Change Resilience Review, that way it is clear about nature of climate hazards that could potentially impact the construction, operation and maintenance (O&M) and decommissioning stages. Below, we highlight some potential risks associated with each of these three stages:
- During construction stage, workers could experience delays in accessing the project site due to extreme weather events, health and safety risks to workers during severe weather events and potential damage to materials, buildings and roads.
 - During O&M, there is a possibility of increased frequency and severity of extreme weather events, such as storm events and heatwaves, leading to damage to

equipment and site access roads. PV panels could also decrease in efficiency when temperatures rise above 25 degrees (IEA, 2022). Any rapid shift from freezing to hot temperatures could result in cracks to solar equipment and affect performance. In cases of flooding, solar equipment, like inverters and batteries, could be exposed to water and suffer damage.

- During the decommissioning phase, anticipated around 2066, there is a likelihood that the climate hazards discussed previously and outlined in the OCC Climate Risk Assessment and predicted by the UK CCRA3 will be evident, exhibiting heightened impacts. Considering the projections of extreme climate conditions in the 2050s, there is a possibility that the decommissioning process may be impacted by these hazards.

7.10.46 We also propose that the applicant should provide the following additional climate adaptation measures within various DCO application documents as appropriate:

- Given the projection of worsening heatwaves, cooling techniques such as reflective coatings and improved ventilation can help maintain optimal solar PV panels temperatures, as can the use of heat-resistant solar PV cells.
- Regular cleaning to remove dust/soiling is important as it can potentially reduce PV panel efficiency and output. Increased routine panels inspection and performance monitoring is also recommended to maintain the normal PV cells range of between 400 - 800 nanometre wavelength (GO-Science, 2023).
- Designing resilient solar panels with better mountings and sensors, and associated equipment on-site is essential to address extreme weather conditions.
- Considering the predominantly cloudy conditions in the UK, which may impact PV panel efficiency, the applicant should instal higher-rated solar PVs panels with greater efficiency.
- Drainage maintenance to avoid blockage of culverts and drains.
- Ensuring that the road surface and pavements are resilient to the full temperature range.
- Careful selection of planting dates and survival of the planted hedgerows and trees.

7.10.47 Finally, we request additional clarity on the greenhouse gas implications of the transport panels from their place(s) of manufacture to the site, and more detail on the mechanisms to reduce emissions from construction transport and maximise on site carbon sequestration.

Conclusion on Climate Change / Resilience

Impact - **Neutral**

7.11 Socio-economic

Summary

- The proposal will provide employment during construction and decommissioning and people residing in Oxfordshire who may be employed during these phases of development is potentially positive. However, this is only temporary. Employment during operation is considered to have neutral impact on the local economy.
- Tourism is a significant contributor to the local economy, with the Cotswold National Landscape and Blenheim Palace. The proposed development has the potential to negatively impact both.

Mitigation / Improvements

- None

Key Policies / Compliance

Table 15 – Development Plan policies relevant to Socio-Economic

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP PSD1: Presumption in Favour of Sustainable Development	Compliant
Vale of White Horse	LPP1 CP1: Presumption in Favour of Sustainable Development LPP1 CP7: Providing Supporting Infrastructure and Services	Compliant
West Oxfordshire	Policy E4 – Sustainable Tourism	
Oxfordshire County Council	N/A	

Policy Detail

- 7.11.1 Policy PSD1 of CLP states that Cherwell will work with applicants to secure developments which improve the economic, social and environmental conditions in the area.
- 7.11.2 Policy CP7 of LPP1 provides that development will only be permitted where the necessary physical infrastructure and service requirements to support the development can be secured.

7.11.3 WOLP Policy E4 requires that tourism and leisure development which utilises and enriches the natural and built environment and existing attractions of West Oxfordshire to the benefit of visitors and local communities will be supported.

Commentary

7.11.4 The applicant assesses socio economic impacts of the proposed development against a range of receptors [**APP-052**] (Chapter 15.9)

- Employment levels
- economic output
- improved skills and qualifications
- reduced agricultural output
- change in the visitor economy
- disruption to travel patterns

7.11.5 The proposed development will provide employment during construction and decommissioning. The ES suggests 25% of these jobs will be to people living outside Oxfordshire. An outline Skills and Employment Plan has been produced to ensure employment opportunities are available to local people. People residing in Oxfordshire who may be employed during construction is potentially positive and may help local businesses, either because they are directly involved in construction or providing accommodation and supporting services to the 25% of workers temporarily resident in the area. However, this is temporary and so the development is likely to have a potentially neutral impact once completed.

7.11.6 The assessment indicates that the most significant socio-economic benefits (moderate beneficial) are in relation to reductions in unemployment during the construction and decommissioning phases of the proposed development. The applicant's calculations indicate a net gain of 191 full time equivalent jobs during the construction phase of the project which will be valuable to the local economy. The applicant's assessment indicates that a total of 336 direct and indirect FTE jobs will be created during the operational and maintenance phases of the project, but taking account of displacement (people moving from other roles) and leakage (people taking up jobs from outside the project area) as well as replacing jobs lost from agriculture, the net total jobs created by the Project over the operational phase would, therefore, equate to circa 18 direct local FTE jobs.

7.11.7 Landscape is an important part of the tourism offer in the local area and, as such, any changes to the natural landscape could impact significantly its appeal. In addition, tourism in the area provides an important contribution to the local economy, providing approximately 36,969 jobs in 2022 and generating a total tourism value of £2.17 billion (Experience Oxfordshire 2022).

- 7.11.8 The OHA wish to highlight the importance of the tourism sector to the local economy and wish to ensure that any impacts arising from the Botley West Solar Farm development are minimised.
- 7.11.9 The Local Impact Report has considered in earlier chapters how the scheme will likely result in negative impacts to landscape and visual resources, including impacts of on public rights of way and long-distance trails, and the historic environment and cultural heritage. These components of the natural, built and historic environment are key attractors to people wishing to visit the area and underpin the tourism industry in this part of Oxfordshire. Any threats to the integrity of these assets or negative impacts arising from the scheme could substantially impact local tourism and its value to the local economy. Blenheim Palace World Heritage Site alone significantly benefits the local economy through tourism, employment and local spending. Losing World Heritage Site Status could have a significant negative economic impact, through diminished reputation and reduced tourism.
- 7.11.10 The applicant recognises the important links between the landscape and heritage of the project area and the local tourism offer, as well as recognising that changes to the natural landscape could impact on the appeal to visitors. The impact on the visitor economy is predicted to be of a regional spatial extent and long-term continuous duration.
- 7.11.11 Benefits from Business Rates are potentially neutral as they relate to the solar farm site only. Once the development is complete it is considered the overall impact of the proposal will be neutral.

Adequacy of the application/DCO

- 7.11.12 The ES contains Chapter 15 Socio Economic. It is considered the ES contains adequate information for the Examination Authority to assess the impact of the proposal on socio-economic issues.
- 7.11.13 The DCO (Sch2 Req13) requires skills, supply chain and employment plans to be submitted to and approved by relevant planning authorities and so OHA can consider the impact on residents and the Oxfordshire economy.

Conclusion on Socio-economic

Impact Jobs – **Neutral**

Impact Tourism – **Negative**

7.12 Human Health

Summary

- Peridswell Farm and Shipton-on-Cherwell village wards should be included in the Wards assessed by the ES chapter [APP-053].
- Glint and glare and noise impacts on schools within 1km of the site have not been assessed. Yarnton Pre-School and William Fletcher Primary School in Yarnton and Cumnor C of E Primary School have been omitted from the list of sensitive receptors.
- The adverse impacts to PRow identified elsewhere in this report may result in adverse impacts on adult obesity.
- The OHA believe that the design of the proposed development could be improved to ensure the efficient response of fire and rescue crews in the event of an emergency.

Mitigation / Improvements

- Glint and glare and noise impacts should be assessed for all schools within 1km of the proposed development site.
- Yarnton Pre-School and William Fletcher Primary School in Yarnton and Cumnor C of E Primary School should be considered sensitive receptors for the purposes of the ES assessment.
- The application should include sufficient access and egress for fire and sufficient hardstanding for fire and rescue crews and equipment to access all elements of the application site. The applicant should liaise with the Oxfordshire Fire and Rescue Service to ensure the operational layout of the scheme will not hinder the efforts of the fire and rescue services in the event of an emergency.
- The outline operational management plan [APP-234] needs to be updated to ensure that vegetation around areas that generate heat is sufficiently maintained to prevent wildfires.

Key Policies / Compliance

Table 16 - Development Plan policies relevant to Human Health

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP PSD1: Presumption in Favour of Sustainable Development CLP ESD10: Protection and Enhancement of Biodiversity and the Natural Environment	Compliant
Vale of White Horse	LPP2 DP23: Impact of Development on Amenity LPP2 DP25: Noise Pollution LPP2 DP26: Air Quality	Compliant
West Oxfordshire		
Oxfordshire County Council	N/A	

Policy Detail

Policy DP23 of LPP2 seeks to ensure that proposals will not result in significant adverse impacts on the amenity of neighbouring uses. Factors to be considered are:

- Loss of privacy, daylight, or sunlight.
- Dominance or visual intrusion.
- Noise or vibration.
- Dust, heat, odour, gases, or other emissions.
- Pollution, contamination, or the use of / or storage of hazardous substances
- External lighting

7.12.1 Policy DP25 of LPP2 seeks mitigation for noise sensitive development.

7.12.2 Policy EBC2 of CNP states development proposals located within the environs and setting of Farmoor Reservoir which would enhance the recreational use of the reservoir and its surroundings will be supported subject to not having an unacceptable impact on the residential amenity of houses in the locality by reason of noise, disturbance, vibration or other impacts, the reservoir's function and setting are retained and public access to the reservoir is safeguarded and where practicable enhanced.

7.12.3 Policy EH8 of WOLP confirms proposals which are likely to cause pollution or result in exposure to sources of pollution or risk to safety, will only be permitted if measures can be implemented to minimise pollution and risk to a level that provides a high standard of protection for health, environmental quality and amenity.

7.12.4 New development should not take place in areas where it would cause unacceptable nuisance to the occupants of nearby land or buildings from noise or disturbance.

7.12.5 Policy PSD1 of CLP states that Cherwell will work with applicants to secure developments which improve the environmental conditions in the area. Policy ESD10 of CLP requires air quality assessments for development proposals likely to increase air pollution.

7.12.6 Policy DP26 of LPP2 confirms that development proposals that are likely to have an impact on local air quality, including those within relative proximity to existing air quality management areas (AQMA) will need to demonstrate measures / mitigation to minimise any impacts associated with air quality.

Commentary

7.12.7 Chapter 16 of the ES discusses Human Health [APP-053].

7.12.8 The Human Health Study Area map [APP-106] together with the ward description at paragraph 16.4.10 of the ES Chapter 16 [APP-053] indicate that Launton and Otmoor

ward is excluded from the assessment. This ward includes Peridswell Farm as well as residences in Shipton-on-Cherwell village, both within 1km of the proposed works which should be included as part of the assessment.

- 7.12.9 The method of determining the vulnerability of sensitive receptors is acknowledged, and the schools, care homes and other healthcare facilities identified as facilities associated with vulnerable groups are crucial for the assessment. Yarnton Pre-School and William Fletcher Primary School in Yarnton have been omitted from the list, as has Cumnor C of E Primary School; these receptors are within 1km of proposed panels and should be included in the assessment. As set out in OCC's RR [RR-0793], OCC have concerns that glint and glare and noise impacts on schools within 1km of the site have not been assessed.
- 7.12.10 The assessment [APP-053] identifies that rates of adult obesity and physical inactivity in children are higher than the England average in at least one of the impacted District areas, and rates of adults walking for travel are low too. This reinforces the importance that the proposed development should not only protect greenspaces, rights of way and areas of recreation, but also actively promote their use and ensure that any impacts arising from the development are adequately mitigated.

Fire and Rescue/Emergency Planning

- 7.12.11 There is currently limited information in relation to fire and rescue vehicle access routes. Consideration should be in place for ensuring suitable fire service access and egress routes are provided, along with suitable hardstanding.
- 7.12.12 Site information should be stored and available for fire crews on arrival to understand any emergency response plan in place and the response time for onsite technical assistance.
- 7.12.13 This site currently does not show any buildings that the fire safety order would apply too. Should this change, it is taken that any buildings or structures will be subject to a Building Regulations application and subsequent statutory consultation with the fire service, to ensure compliance with all the functional requirements of The Building Regulations from B1 to B5.
- 7.12.14 Wildfire risk is increasing across Oxfordshire but particularly around the Blenheim area where there have been red alerts. Grass and vegetation need to be adequately managed around areas of the proposed development that might generate or reflect heat.
- 7.12.15 Ground works must also account for sensitive national hazard pipelines, fuel pipelines and cabling running across this site area.

- 7.12.16 During construction, traffic routes to events at Blenheim Palace and emergency routes for Blenheim / Oxford Airport / Farmoor reservoir, and evacuation routes for communities would need to be maintained.

Adequacy of the application/DCO

- 7.12.17 The Human Health study area should be expanded as set out above and schools within 1km of the proposed development should be included in the assessment.
- 7.12.18 The fire and safety points raised must be covered by the application or DCO requirements. This could be achieved by revising the Outline Operational Management Plan [APP-234] to include the ongoing maintenance of vegetation surrounding equipment which may generate heat or reflect light as well as liaising with the Oxfordshire Fire and Rescue Service to review the Operational Development Areas Plan [APP-227] to ensure adequate access and egress is available to the fire services in the event of an emergency.
- 7.12.19 It is agreed that dust control can be confirmed and agreed via a Code of Construction Practice as per Annex E: Outline Dust Management Plan of Outline Code of Construction Practice Part 2 [APP-233].

Conclusion on Human Health

Impact – **neutral**

7.13 Agricultural Land Use

Summary

- Approximately 40% (216ha) of the land proposed for solar PV would be sited on Best and Most Versatile (BMV) agricultural land contrary to local policy
- At least 4ha will be permanently lost through siting of the National Grid substation.
- A further 5.5ha will be permanently lost to construction of substations and power converter stations.

Mitigation / Improvements

- The removal of development from areas of best and most versatile agricultural land would mitigate the impacts of development on soil resources.

Key Policies / Compliance

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP PSD1: Presumption in Favour of Sustainable Development	Conflict identified
Vale of White Horse	LPP1 CP43: Natural Resources CNP RNE1: Green Infrastructure	Conflict identified
West Oxfordshire	Policy OS3 – Prudent use of natural resources. Policy EH6 – Decentralised and renewable or low carbon energy development	Conflict identified
Oxfordshire County Council	N/A	

Policy Detail

- 7.13.1 Paragraph 2.10.29 of NPS EN-3 states that solar should avoid “the use of “Best and Most Versatile” agricultural land where possible”. It goes on to define BMV land as those in Grades 1, 2 and 3a of the Agricultural Land Classification.
- 7.13.2 Paragraph 2.10.145 of NPS EN-3 highlights that the Secretary of State should take into account the economic and other benefits of best and most versatile agricultural land. The Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to minimise impacts on soils or soil resources.

- 7.13.3 Policy PSD1 of CLP states that permission will be granted for development unless material considerations indicate otherwise; including taking account of any adverse impacts outweighing the benefits of the scheme.
- 7.13.4 Criterion vii) of policy CP43 of LPP1 seeks to avoid developing the best and most versatile agricultural land preferring use of areas of poorer quality land in preference to that of higher quality.
- 7.13.5 The WOLP requires that all development proposals will be required to show consideration of efficient and prudent use of natural resources, including minimising their use on the soil resource.
- 7.13.6 Any proposals for a solar farm involving best and most versatile agricultural land would need to be justified by the most compelling evidence which demonstrates why poorer quality land has not been used in preference to best and most versatile agricultural land.

Commentary

- 7.13.7 The applicant's mapping of Best and Most Versatile Agricultural Land included in their Agricultural Land Classification and Soil Survey Report [**APP-223**] indicates significant coverage of BMV across the project area.
- 7.13.8 Approximately 40% (505ha) of the land project area is comprised of Best and Most Versatile (BMV) agricultural land. At least 4ha of this will be permanently lost through siting of the National Grid substation along with 5.5ha permanently lost due to the construction of substations and power converter stations [**APP-054**]. It is also important to highlight the cumulative impacts of solar development on BMV agricultural land in Oxfordshire, as numerous smaller solar proposals are also currently under the consideration of the district councils. Cumulative impact of the project along with other developments could result in significant loss of BMV agricultural land, exceeding 20 Ha
- 7.13.9 Local data for crop yields¹⁴ indicates steadily increasing trends for wheat yields since 2005 with an average of approximately 8 tonnes / Ha for land within the project area. Wheat production is crucial to the UK's food security with wheat flour providing 20% of the energy and protein consumed in the UK¹⁵ as well as the national economy, with

¹⁴ Can be made available on request

¹⁵ <https://www.world-grain.com/articles/19974-country-focus-the-united-kingdom#:~:text=Flour%20production&text=Wheat%20flour%20provides%2020%25%20of,every%20day%2C%20the%20association%20said.>

value of wheat production measured at £2.91bn in 2023. Agriculture contributed £840m in turnover to Oxfordshire's food economy in 2022¹⁶

Adequacy of the application/DCO

- 7.13.10 The applicant considers agricultural use will continue in the form of conservation grazing, primarily by sheep and some small-scale horticultural production areas for use by community food growing groups ([APP-043] paragraph 6.1.4) – this is not considered a viable replacement for loss of arable by the OHA to mitigate the loss of BMV.
- 7.13.11 It questioned why the location of panels has been amended to omit areas of archaeological interest and to allow for sky lark plots but not to preserve areas found to be of the higher quality agricultural grades. This has not been addressed in the Planning Statement and there would appear to be justification for removing panels from certain parts of the site which are of Grade 2 and 3a quality.
- 7.13.12 Within Cherwell the area to the north-west of The Priory in Begbroke and the field to the south of London Oxford Airport (east of A44) should be considered for removal.
- 7.13.13 There are also notable areas of Grade 2 agricultural land within West Oxfordshire District to the south and east of Church Hanborough and to the north and north-west of Cassington which should also be removed from the area
- 7.13.14 For VWHDC, all proposed development should be removed from its BMV land.
- 7.13.15 Whilst it is acknowledged that the lifespan of this project is currently expected to be limited to 42 years, this is not considered to be 'temporary' as it will affect the land for at least a generation. This view is supported by the Little Heath Lane appeal decision (ref: APP/A1910/W/23/3317818).

Conclusion on Agricultural Land Use

Impact – **negative**

- 7.13.16 The long term or permanent loss of best and most versatile agricultural land contrary to local policy is regarded as a negative impact of the proposed development. The removal of proposed development from areas of best and most versatile agricultural land would mitigate impacts on the soil resource.

¹⁶

https://mycouncil.oxfordshire.gov.uk/documents/s60603/CA_MAY2422R07%20Annex%20GFO%20Oxfordshire%20Food%20Strategy%202022.pdf

7.14 Waste and Resources

Summary

- The Outline Site Resources and Waste Management Plan **[APP-233]** does not include the details of the number of wastes that will arise from the decommissioning phase.
- ES Chapter 18 **[APP-055]** does not adequately consider alternatives to waste management methods further up the waste hierarchy.
- The ability of the applicant to demonstrate that they can dispose of waste is fundamental to any planning decision. As such OCC as the Waste Authority needs the applicant to demonstrate that the quantity of waste expected to be produced can be disposed of both through the operational and decommissioning phases.
- The quantity of waste at decommissioning stage will be substantial and the Minerals and Wastes Authority need to know the quantities of waste to be expected to be able to plan for the disposal of the waste in future Minerals and Waste Local Plans.

Mitigation / Improvements

- OCC as the Waste Planning Authority require more detailed projections of waste arisings from the development and a clear plan for the removal and management of the waste within the applicants outline Code of Construction Practice **[APP-233]** and Outline Decommissioning Plan **[APP-236]**.

Key Policies / Compliance

Table 17 - Development Plan policies relevant to Waste and Resources

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP ESD1: Mitigating and Adapting to Climate Change CLP ESD3: Sustainable Construction	Compliant
Vale of White Horse	LPP1 CP43: Natural Resources LPP2 DP28: Waste Collection and Recycling	Compliant
West Oxfordshire	WOLP OS3: Prudent use of natural resources	Conflict Identified
Oxfordshire County Council	The Oxfordshire Minerals and Waste Local Plan Part 1- Core Strategy: Policy W1: Oxfordshire waste to be managed	No conflict identified

Policy Detail

- 7.14.1 Policy EDS1 states that new developments should seek to use resources more efficiently. Policy ESD3 of CLP requires new development to reduce energy use through sustainable construction methods.
- 7.14.2 CP43 of LPP1 encourages developers to make provision for the effective use of natural resources including minimising waste and making adequate provision for the recycling of waste on site and using recycled and energy efficient materials.
- 7.14.3 OS3 of WOLP confirms all development proposals will be required to show consideration for the efficient and prudent use of resources.
- 7.14.4 Policy W1 of the OMWLP outlines that provision will be made to allow Oxfordshire to be self-sufficient in the management of principal waste streams which included commercial, demolition and construction waste.

Commentary

- 7.14.5 It is noted the design of the Project predominantly uses prefabrication. This reduces the generation of construction waste on site with waste produced during the manufacture of the solar PV units, mounting structures and cabling.
- 7.14.6 Waste Electrical and Electronic Equipment (WEEE) including photovoltaic panels from supporting electrical infrastructure generated during the operation and decommissioning phases will be recovered and recycled by an authorised processor as required by the WEEE Regulations 2013.
- 7.14.7 An Outline Site Resources and Waste Management Plan [**APP-233**] has been prepared and sets out the estimated types and quantities of waste that would be generated during the construction process, together with measures for how the waste will be managed. This does not include the details of the number of wastes that will arise from the decommissioning phase.
- 7.14.8 The applicant has also submitted an outline decommissioning plan which states that waste from decommissioning will be disposed of in line with the waste hierarchy [**APP-236**] paragraph 2.1.2).
- 7.14.9 In respect of ES Chapter 18 – Waste and Resources [**APP-055**], the potential impacts as set out in table 18.23 (maximum design scenario considered for the assessment of potential impacts) only considers the reduction in landfill capacity; it does not consider alternatives to waste management methods further up the waste hierarchy.
- 7.14.10 The mitigation measures in table 18.24 (mitigation measures to be adopted as part of the Project) states that the Outline Site Resources and Waste Management Plan includes targets to divert waste from landfill. This seems out of step with table 18.23.

- 7.14.11 This section also states that an Operational Waste Management Plan will be agreed with the Waste Planning Authority prior to development commencing. In addition, there is also to be a Decommissioning Plan to be provided prior to commencement setting out more detail on waste. However, the disposal of the waste produced is fundamental to the planning decision as the applicant needs to demonstrate that the quantity of waste that will be produced is capable of being disposed of. Equally, given the potential quantity of waste at decommissioning stage, the development may have serious implications on the planning of waste sites within the County in future Minerals and Waste Plans. As such this information should be provided prior to any consent being granted.
- 7.14.12 The proposal does not include a proposal for a waste management facility, and so there are no policies within the Minerals and Wastes Local Plan that directly apply to the application, but the amount and type of waste that would be created by the development would require waste management in the future. This would be a large amount of additional waste that would need to be planned for in future Waste Local Plans. The waste impact of the site is therefore a major negative one.

Adequacy of the application/DCO

- 7.14.13 Site Resources and Waste Management Plans (SRWMP) are implemented through Requirement 11 in the DCO [APP-015]. Paragraph (3) of Requirement 11 states that the Site Resource and Waste Management Plan to be submitted must be substantially in accordance with the outline Code of Construction Practice [APP-233] (which contains the Outline SRWMP). Likewise, Paragraph (4) of Requirement 14 states that any Decommissioning Plan submitted to the Local Authorities must be substantially in accordance with the submitted Outline Decommissioning Plan [APP-236].
- 7.14.14 As outlined above the OHA, particularly OCC as the Minerals and Waste Planning Authority, have concerns about the adequacy of the submitted outline plans in relation to waste disposal and the volume of waste that will be produced and how it will be disposed. The Minerals and Wastes Authority would expect to see more detailed projections of waste arisings and a clear plan for the removal and management of the waste produced within the Environment Statement and outline plans. Waste management is a material consideration and should be addressed prior to determination.

Conclusion on Waste and Resources

Impact - **Negative**

7.15 Air Quality

Summary

- Air quality will be impacted during construction and decommissioning.
- Dust emissions can be controlled via Dust Management Plans implemented through Requirement 11 in the DCO.

Mitigation / Improvements

- None.

Key Policies / Compliance

Table 18 - Development Plan policies relevant to Air Quality

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP PSD1: Presumption in Favour of Sustainable Development CLP ESD10: Protection and Enhancement of Biodiversity and the Natural Environment	Compliant
Vale of White Horse	LPP1 CP43: Natural Resources LPP2 DP26: Air Quality	Compliant
West Oxfordshire		
Oxfordshire County Council	N/A	

Policy Detail

- 7.15.1 Policy PSD1 of CLP states that Cherwell will work with applicants to secure developments which improve the environmental conditions in the area. Policy ESD10 of CLP requires air quality assessments for development proposals likely to increase air pollution.
- 7.15.2 Policy DP26 of LPP2 confirms that development proposals that are likely to have an impact on local air quality, including those within relative proximity to existing air quality management areas (AQMA's) will need to demonstrate measures / mitigation to minimise any impacts associated with air quality.

Commentary

- 7.15.3 Air quality will be impacted during construction and decommissioning owing to the generation of dust from disturbing soil. This is relevant for both the construction of the solar farm (where dust may travel on the wind towards dwellings and other premises within the vicinity of the site) and for the cable route with the same consequences. Impact from decommissioning is likely to be from the removal of the solar farm as the

connecting cable once disconnected is likely to be left in situ. Another impact is from emissions from vehicles working on the site or using highways. These could have a potentially negative or potentially neutral impact, depending on the success of the mitigation measures employed in the various management plans. The impact of vehicles during decommissioning may be very different depending on how much diesel and petrol use declines over the next 40 years.

Adequacy of the application/DCO

- 7.15.4 Chapter 19 of the ES discusses Air Quality [**APP-056**]. It considers particulates from construction traffic and advises that dust emissions will be controlled via Dust Management Plans developed in accordance with the Outline Dust Management Plan [**APP-233**] contained within the Outline Code of Construction Practice submitted with the application [**APP-232**].
- 7.15.5 It is considered the ES contains adequate information for the Examining Authority to assess the impact of the proposal on air quality.
- 7.15.6 Dust Management Plans are implemented through Requirements 11 in the DCO.

Conclusion on Air Quality

Impact – **neutral**

7.16 Aviation Activities

Summary

- The siting of panels on areas of land to the south of the London-Oxford Airport would be harmful to public safety by reducing the available area for safe landing in the event of Engine Failure After Take-Off (EFATO).
- OHAs consider that the assessment of impacts on aviation activities including Glint and Glare, Thermal Plumes and wildlife displacement/'lake effect' is inadequate.

Mitigation / Improvements

- Remove areas of the Central Site to the south of London-Oxford Airport.
- The OHAs require further assessment of wildlife displacement, 'lake effect' and bird strike and thermal plumes.
- Mitigation proposals should be provided in respect of glint and glare and as identified by the additional/updated assessment of wildlife displacement, 'lake effect' and thermal plumes.

Key Policies / Compliance

Table 19 - Development Plan policies relevant to Aviation Activity

NPS	Overarching National Policy Statement for Energy (EN-1) National Policy Statement for Renewable Energy Infrastructure (EN3)	Not assessed
Cherwell	CLP ESD5: Renewable Energy	Conflict identified
Vale of White Horse	N/A	
West Oxfordshire	POLICY EH6: Decentralised and renewable or low carbon energy development	Conflict identified
Oxfordshire County Council	N/A	

Policy Detail

- 7.16.1 Paragraph 4.1.7 of EN-1 states that for CNP developments the presumption of need outweighing harmful residual effects does not apply in the case of "impacts which present an unacceptable risk to, or interference with, ... public safety...".

- 7.16.2 Paragraphs 2.10.158 and 2.10.159 of NPS EN-3 concern glint and glare from solar panels and state that although the Secretary of State should assess the potential impact of glint and glare it is unlikely that they will give any more than limited weight to aviation interference from this source.
- 7.16.3 Policy ESD5 of CLP supports renewable and low carbon energy provision wherever any adverse impacts can be addressed satisfactorily including, amongst other things, adverse impacts upon aviation activities. WOLP EH6 requires that renewable or low-carbon energy development should be located and designed to minimise any adverse impacts, with particular regard to conserving the district's high valued landscape and historic environment. In assessing proposals, impacts on aviation activities will need to be considered.

Commentary

- 7.16.4 London-Oxford Airport is located immediately to the east of the central site. A number of concerns have been expressed regarding the impacts of this project upon aviation activities including:
- Engine Failure After Take-Off
 - Glint and glare:
 - Heat Induced Turbulence;
 - Increased risk of bird strike and collisions with animals caused by birds mistaking solar arrays for lakes and wildlife being displaced from areas with panels.
- 7.16.5 The application site for this proposal occupies statutory safeguarding zones surrounding RAF Weston on the Green, specifically the aerodrome height and birdstrike safeguarding zones and the aerodrome height safeguarding zone surrounding RAF Brize Norton. Given the significant size of the proposed solar farm, the MOD have asked to be consulted at all future stages of this scheme leading to the finalised development proposals in order to assess for any impacts to defence operations from the development.

Adequacy of the application/DCO

- 7.16.6 Whilst an assessment of Glint and Glare has been carried out there are outstanding concerns that harmful effects on aviation activities at London-Oxford Airport have not been adequately mitigated or considered. These have been detailed in the representations from Oxford Aviation Services Ltd [**PDA-002**].
- 7.16.7 The airport operator has requested the removal of panels from some areas to the south of the runway in order to ensure that there is an adequate safeguarded zone, free of panels, for emergency landings in the event of engine failure after take-off (EFATO). This is a matter of public safety and, in accordance with paragraph 4.1.7 of EN-1, it would not outweigh the need for CNP development.

7.16.8 An appeal for an anaerobic digester in Suffolk was dismissed on the grounds that it “would further erode an already constrained area for a forced/emergency landing”. In coming to this decision, the Inspector noted that many of the pilots flying from Beccles Aerodrome were inexperienced and that the safeguarded zone was already constrained by an existing solar farm (see ref: APP/V3500/W/24/3354097). Due to London-Oxford Airport being a centre for pilot training, and having many single engine aircraft movements, this concern is also relevant to this development.

7.16.9 The assessment of glint and glare which includes a technical aerodrome safeguarding report [**APP-128**] is currently considered to be inadequate. The report fails to suitably address the issues of:

- EFATO (the extent of safeguarded zones);
- Glint and Glare (no mitigation is proposed);
- Thermal plumes (which could result in turbulence and interference with aviation communication systems).

7.16.10 The report fails to provide any assessment of:

- the displacement of wildlife resulting in increased chances of aircraft collisions with fauna (such as bird strike);
- the ‘lake effect’ which could attract more waterfowl leading to increased chances of bird strike;

7.16.11 The applicants are therefore requested to provide further evidence to the ExA and Oxford Aviation Services Ltd (the airport operator) on these matters. Solar panels should be removed from the EFATO safeguarded zone as agreed with the airport operator. Revised mitigation proposals should be provided in respect of glint and glare and as identified by the additional/updated assessment of wildlife displacement, ‘lake effect’ and thermal plumes.

Conclusion on Aviation Activities

Impact – **Negative**

7.17 Cumulative Effects and Inter-relationships

Summary

- The applicant has identified most cumulative effects under Tiers 1 and 2.
- Cumulative effects with allocations in WODC and CDC emerging Local Plans have not been referred to in the ES under Tier 3.
- The proposed development will result in negative local impacts on landscape and heritage cumulatively with other developments.

Mitigation / Improvement

- Assessment methodology is revisited to ensure cumulative effects considers the full scenario whereby multiple projects may exist in the landscape.
- It is further requested that a mapped figure illustrating the locations of the schemes considered in the cumulative assessment is provided.

Commentary

- 7.17.1 The applicant's environmental statement illustrates how the proposed development relates to other planned and permitted development in the area.
- 7.17.2 Significantly, in the case of West Oxfordshire, there are 3 non-strategic allocations for residential development at Woodstock (Northern Area) and a new garden village proposed in the Central Area for 2,200 dwellings.
- 7.17.3 WODC are in the process of preparing an updated Local Plan for the district and are currently considering options for further residential development in proximity to the proposed solar farm.
- 7.17.4 For the Vale, an application is being considered for a solar farm at Red House Barn immediately adjacent to the Southern Site. There is also the prospect of a separate NGET substation proposal.
- 7.17.5 For Cherwell, the DCO redline area and cable route appear to be adjacent to or overlap with the proposed Woodstock housing allocation (KID H1 South East of Woodstock) and land safeguarded for the A44 Mobility Hub (policy KID 3) in the Cherwell Regulation 19 Local Plan. The solar farm must not in any way hinder the delivery of these two sites.
- 7.17.6 All allocated development has been planned to protect and enhance landscape and heritage assets, although the OHA recognise that there will be cumulative impacts that will arise from these notable developments and the Botley West Solar Farm proposed development, , particularly in terms of green field development, loss of

agricultural land and development within the setting of cultural assets including Blenheim Palace WHS.

7.17.7 Salt Cross Garden Village has been planned in accordance with Garden Village principles, to establish a new community within a rural landscape setting.

7.17.8 It is also important to highlight at this stage the extent and distribution of ground mounted solar schemes that have been approved by the host authorities or which are currently in the pipeline. The Local Impact Report has indicated that the OHA support the principle of renewable energy development, and this is confirmed by the number of solar schemes established in the area, which have become a prominent feature of the landscape in certain areas.

Adequacy of the application/DCO

Impact – Negative

7.17.9 The OHA consider that the proposed development will result in negative local impacts on landscape and heritage cumulatively with other developments. ICOMOS undertook a technical review of the cumulative impact of residential development within the setting of Blenheim Palace WHS in February 2024 (appended to WODC Relevant Representation [RR-1102]) concluding that development at Woodstock had cumulatively negatively impacted the outstanding universal value of the property through an erosion of its setting.

7.17.10 The LUC review in Appendix 1 includes a section on cumulative effects (paras 2.59 – 2.61). It highlights that the cumulative assessment only seems to consider cumulative interactions between the Proposed Development and each cumulative project on its own, rather than all the cumulative projects at the same time. This approach potentially downplays the extent of cumulative effects, as it does not consider the full scenario, whereby multiple projects may co-exist.

7.17.11 The OHA therefore request that the assessment methodology is revisited to ensure that *“the assessment of cumulative effects considers the full scenario, whereby multiple projects may exist in the landscape.”* It is further requested in the same paragraph *“that a mapped figure illustrating the locations of the schemes considered in the cumulative assessment is provided.”* (para 2.72, Appendix 1).

7.17.12 The OHA consider it important that all impacts related to the development are considered cumulatively and comprehensively. This also applies to the development itself, which effectively comprises four developments (the northern, central, southern site, and the substation). The need for a comprehensive assessment of all related structures also remains important, even if the NGET substation was to be moved outside the site boundary.

8. Comments on draft DCO

- 8.1 This chapter sets out the OHA's comments on the draft Development Consent Order **[AS-009]**. While comprehensive, these comments are not exhaustive, and it is possible that additional comments will be made on the draft DCO during the examination. The OHA would welcome the opportunity to discuss these comments with the Applicant after Deadline 2.
- 8.2 Whilst not requiring a change to the draft DCO wording itself, it is worth highlighting that the outline plans and strategies as referred to in requirements 5 (Detailed design approval), 6 (Landscape and ecology management plan), 7 (Biodiversity net gain), 9 (Surface and foul water drainage), 10 (Archaeology), 11 (Code of construction practice), 12 (Operational management plan), and 14 (Decommissioning and restoration), as they are currently drafted are insufficiently detailed, as set out in the relevant sections of Chapter 7: Local Impacts. It is important for future submissions that these outline plans are agreed to the satisfaction of the OHAs.

Table 20 - OHA Comments on Draft Development Consent Order

	Provision	Comment
1.	Recitals	The fourth recital refers to “section 104(2)(f) of the [Planning Act 2008]”; however, there is no such provision. (The sub-paragraphs in section 104(2) run from (a) to (d)). The OHA assume the reference should be to “section 104(2)” because the SoS will have had regard to all the documents referred to in sub-paragraphs (a) to (d) and not just one of them).
2.	Art.2(1) (interpretation)	The definition of “electronic transmission” refers to “electronic communications network”, which is not defined in art.2(1). It is, however, defined in the definition of “electronic transmission” in several DCOs as follows – “... and in this definition “electronic communications network” has the same meaning as in section 32(1) (meaning of electronic communications networks and services) of the Communications Act 2003”. The precedents are legion and here are just 5: A12 Chelmsford to A120 Widening Development Consent Order 2024; Boston Alternative Energy Facility Order 2023; HyNet Carbon Dioxide Pipeline Order 2024; Portishead Branch Line (MetroWest Phase 1) Order 2022; and A428

		Black Cat to Caxton Gibbet Development Consent Order 2022. The OHA would be grateful if the Applicant could consider whether the definition of “electronic communications network” should form part of the definition of “electronic transmission”.
3.	Art.2(1) (interpretation)	The “permitted preliminary works” are excluded from the definition of “commence”. Several of the excluded works seem significant; for instance, sub-paragraph (c) includes “works in relation to construction compounds and access to construction compounds” and sub-paragraph (h) includes “site clearance (including vegetation removal, demolition of existing buildings or structures”. The OHA would welcome more information in respect of these, including (in respect of sub-paragraph (h) for example) which existing buildings and structures are proposed to be demolished, and how the works mentioned in that sub-paragraph. It would be helpful if the relevant paragraphs of the ES which assess the “permitted preliminary works” could be flagged up. In addition, several of the excluded works are temporary in nature. For example – • Sub-paragraph (c) includes the provision of “temporary facilities for the use of contractors”; • Sub-paragraph (f) provides for “temporary means of enclosure, fencing and site security for construction”; • Sub-paragraph (g) provides for “the temporary display of site notices or advertisements”. Does the Applicant have any idea of what “temporary” might mean in each of these scenarios? Also, for sub-paragraphs (f) and (g) what will happen to the land after it has been put to its temporary use? For instance, will it be reinstated (say) to a condition suitable for its former use? Regarding fencing, the OHA assume the works falling within sub-paragraph (f) would be captured by requirement

		8 (fencing and other means of enclosure) and the OHA would be grateful if the applicant could confirm this is the case.
4.	Art.2(1) (interpretation)	The definition of “ undertaker ” doesn’t include SolarFive Ltd.’s registered office; however, the definition of “ National Grid ” includes theirs. For consistency, shouldn’t SolarFive’s company address be included in the definition of “undertaker”?
5.	Art.2(3) (interpretation)	Art.2(3) says “In this Order, references to the purposes of the authorised development includes ...”. Shouldn’t “includes” be “include”?
6.	Art.2(4) (interpretation)	Art.2(4) says all “distances, directions, capacities and lengths referred to in this Order are approximate”. In the light of this, are the several references to “approximately” in schedule 12 (hedgerows to be removed) necessary?
7.	Art.6(1)(a) (application and modification of statutory provisions)	This provision seeks to disapply s.23 of the Land Drainage Act 1991. As stated elsewhere in this LIR (Chapter 6.6 (hydrology and flood risk)) OCC (the lead local flood authority) would prefer to maintain the tried and tested regime under s.23, rather than replace it with a regime which includes, for instance, shorter timeframes for determining applications. OCC therefore opposes the disapplication of s.23.
8.	Art.6(3) (application and modification of statutory provisions)	The effect of this provision is that any hedgerow to which the Hedgerow Regulations 1997 apply can be removed if required “for carrying out any development or in the exercise of any functions that are authorised by the” Order. (This power is wide-ranging. For instance, unlike art.38(4) (felling or lopping of trees and removal of hedgerows), it does not appear to be limited to hedgerows within the Order limits). The OHAs consider the power under art.6(3) be limited to art.38(4) e.g. – “(3) Regulation 6(1) of the Hedgerows Regulations 1997 has effect as though after sub-paragraph (e) there were added— “(ea) for the purposes of article 38(4) of carrying out any development or in the exercise of any functions that are authorised by the Botley West Solar Farm Order 202[];”

		The OHA's concerns with art.38 are set out below.
9.	Art.7 (defence to proceedings in respect of statutory nuisance)	The OHAs would welcome a discussion with the applicant on the extent of this provision, particularly the proposed application of the defence (i) to the construction, operation, maintenance, use and decommissioning of the authorised development and (ii) when the matter complained of falls within a document approved under a requirement included at Schedule 2.
10.	Part 3 (streets)	OCC would welcome discussions on the Applicant's proposed highways powers which, in their current form, are too wide-ranging. For instance, and to name but four of these concerns, OCC is concerned by (i) the absence of a need for consent before carrying out the street works mentioned in article 8(1) (street works), (ii) the absence of a need for consent before carrying out the works mentioned in article 9(1) (power to alter layout, etc. of streets), and (iii) how OCC will be resourced to carry out additional highways-related work proposed by the draft DCO (iv) the lack of certainty regarding whether any streets which will be resurfaced will be resurfaced to a standard OCC considers satisfactory.
11.	Art.11(4)(b) (temporary closure of public rights of way)	By art.11(4)(b), the street authority's consent is required before certain streets or public rights of way are interfered with and "the street authority <u>may attach reasonable conditions</u> to any such consent". Similarly, by art.17(3), (discharge of water) – "The undertaker must not discharge any water into any watercourse, public sewer or drain except with the consent of the person to whom it belongs whose consent may be given <u>subject to terms and conditions as that person may reasonably impose</u>". There are other provisions in the draft Order which require the consent of a consenting body (for example articles 9(4)(power to alter layout, etc., of streets), 16(4)(b) (traffic regulation measures), 18(4)(a) and (b) (authority to survey and investigate the land) and 38(6)) (felling or lopping of trees and removal of hedgerows); however, these provisions are silent as to the power to attach or impose reasonable conditions. For consistency with arts.11(4)(b) and 17(3), the OHA consider the power to attach conditions should be attached to each consenting provision, as follows –

		Article 9(4) – “(4) The powers conferred by paragraph (2) may not be exercised without the consent of the street authority and the street authority may attach reasonable conditions to any such consent”. Article 16(4)(b) – “(4) Before exercising the power conferred by paragraph (2) the undertaker must— (a) consult with the chief officer of police in whose area the road is situated; and (b) obtain the written consent of the traffic authority and the street authority may attach reasonable conditions to any such consent”. Article 38(6) – “(6) The undertaker may not pursuant to paragraphs (1) and (5) fell or lop a tree or remove hedgerows within the extent of the publicly maintainable highway without the prior consent of the highway authority, and the highway authority may attach reasonable conditions to any such consent”.
12.	Art.11 (temporary closure of public rights of way) and art.11 (permanent closure of public rights of way)	The OHAs concerns with the public rights of way provisions are set out in Chapter 6.9 (traffic and transport (including public rights of way)). The OHAs would welcome a discussion on those concerns with a view to agreeing the best way forward.
13.	Art.15 (agreements with street authorities)	Officers are concerned by the scope of the powers proposed under Part 3; however, it is possible most concerns can be addressed by making the proposed works under Part 3 subject to an agreement drafted in line with OCC’s standard highways agreement. OCC will share this with the Applicant and would welcome discussions on the same.
14.	Art.16(7)(a) and (b) (traffic regulation measures)	These provisions refer to the “instrument” which must include any provision made by the undertaker under art.16(1) or (2). OCC considers it would be helpful if a copy of the made instrument were made available by the undertaker and also sent to OCC. In the light of this, OCC would suggest a new art.16(8) to provide as follows –

		“(8) A copy of the instrument referred to in paragraph (7)(a) must be held at the registered office address of the undertaker for inspection during normal working hours and, as soon as reasonably practicable after being made, a copy must be served on the highway authority”.
15.	Art.20(3)(b) (time limit for exercise of authority to acquire land compulsorily)	The OHA consider the extension provided under art.20(3)(a) is satisfactory and there is no need for art.20(3)(b). Owing to this, the OHA consider art.20(3) should be recast as follows – “The authority conferred by article 29 (temporary use of land for constructing the authorised development) must not be used after the end of the applicable period referred to in paragraph (1), save that if an application is made under section 118 of the 2008 Act (legal challenges relating to applications for orders granting development consent) the applicable period is to be extended by a period equivalent to the period beginning on the day the application is made and ending on the day it is withdrawn or finally determined”.
16.	Art.35 (consent to transfer the benefit of the Order)	If the benefit of the Order is transferred, each of the OHA wish to be notified of the same and request that art.35 is amended accordingly.
17.	Art.38 (felling or lopping of trees and removal of hedgerows)	By article 38(4), the undertaker may “... undertake works to or remove any hedgerows within the Order limits that may be required”. Paragraph 22.1 of <i>PINS Advice Note Fifteen: drafting Development Consent Orders</i> states – “Applicants may wish to include an Article within the draft DCO to allow the removal of hedgerows (if necessary) for the purposes of carrying out the Authorised Development. The draft DCO can include an Article with powers which remove the obligation on the Undertaker to first secure consent under The Hedgerows Regulations 1997 ...It is recommended that DCO Articles of this kind are made relevant to the specific hedgerows intended for removal. To support the ExA, the Article should include a Schedule and a plan to specifically identify the hedgerows to be removed (whether in whole or in part). This will allow the question of their removal to be examined in detail. Alternatively, the Article within the DCO could be drafted to include powers for general removal of hedgerows (if they cannot be

		specifically identified) but this must be subject to the later consent of the local authority”. The draft DCO does not include a Schedule and plan identifying the hedgerows to be removed under article 38(4). Similarly, the requirement to obtain consent under art.38 is limited to the scenario described in art.38(6) i.e. when proposing to “remove hedgerows within the extent of the publicly maintainable highway” when the highway authority’s consent is required. In the light of the above, the OHA consider art.38(4) should be amended to reflect the advice mentioned above.
18.	Art.39 (trees subject to tree preservation orders)	Paragraphs 22.2 and 22.3 of <i>PINS Advice Note Fifteen: drafting Development Consent Orders</i> state – “22.2 Applicants may also wish to include powers allowing them to fell, lop or cut back roots of trees subject to a Tree Preservation Order (TPO). This power can extend to trees which are otherwise protected by virtue of being situated in a conservation area. To support the ExA inclusion of this power should be accompanied by a Schedule and plan to specifically identify the affected trees. 22.3 Trees subject to TPO and/ or are otherwise protected (and likely to be affected) should be specifically identified. It is not appropriate for this power to be included on a precautionary basis. Proper identification of affected trees will enable the ExA to give full consideration to the particular characteristics that gave rise to their designation and the desirability of continuing such protection”. In the light of the advice mentioned above, the OHA consider this article should be accompanied by a Schedule and Plan.
19.	Art.45 (procedure in relation to certain approvals etc.)	Sub-section (2) states – (2) Where paragraph (1) applies to any consent, agreement or approval, such consent, agreement or approval must not be unreasonably withheld <u>or delayed</u>. By art. 45(4) if within 8 weeks after the application for consent has been submitted to a consenting authority the authority has not notified the undertaker of its disapproval, it is deemed to have approved the application for consent. Owing to the deeming provision, the OHA do not consider

		the reference to delaying consent in art.45(2) is necessary and so the words “or delayed” should be omitted.
20.	Requirements: general (phasing scheme)	Most solar DCOs include a requirement which require the submission of a written scheme setting out the phase or phases of construction, which includes a timetable for the construction of the phase or phases and a plan identifying the phasing area. Examples include – Cleve Hill Solar Park Order 2020 (SI2020/547), Little Crow Solar Park Order 2022 (SI2022/436), Longfield Solar Farm Order 2023 (SI2023/734), Mallard Pass Solar Farm Order 2024 (SI2024/796), Gate Burton Energy Park Order 2024 (SI2024/807), and Cottam Solar Project Order 2024 (2024/943). An example of such a requirement is – No part of the authorised development may commence until a written scheme setting out the phase or phases of construction of the authorised development has been submitted to the relevant planning authorities. The written scheme submitted pursuant to sub-paragraph (2) must include a timetable for the construction of the phase or phases of the authorised development and a plan identifying the phasing area. The scheme submitted and approved pursuant to sub-paragraph (2) must be implemented as approved. Notice of the date of final commissioning must be given to the relevant planning authority within 15 working days of the date of final commissioning for that phase. The OHA would welcome the inclusion of such a requirement because being provided with the scheme (particularly the timetable) would allow the relevant planning authorities to prepare resources for discharging requirements etc.
21.	R.2 (commencement of the authorised development)	Requirement 2 states: “The authorised development must not begin after the expiration of five years from the date this Order comes into force”. [Emphasis added]. For consistency with the term used elsewhere in the Order, the OHA consider “begin” should be replaced with “commence”.
22.	R.5(1) (detailed design approval)	Other solar farm orders which include this requirement require the undertaker to provide, under sub-paragraph (1),

		additional details. For example, Requirement 2 of the Cleve Hill Solar Park Order 2020 (SI2020/547) includes the 7 items listed in R5(1) and the following – “(h) drainage, water, power and communications cables and pipelines; (i) programme for landscaping works; and (j) fencing,” Requirement 5(1) of the the Gate Burton Energy Park Order 2024 (SI2024/807) includes the three additional items mentioned in Cleve Hill and also — “(k) security measures; and (l) any mitigation measures necessary to address noise impacts”. Shouldn’t this information also be submitted to the relevant planning authority under R.5(1) of the instant Order? Also, the equivalent of R.5(2) in the Cleve Hill and Gate Burton Orders require the submitted details to accord with the works plan. Shouldn’t that document also be referred to in R5(2) of the instant order?
23.	R.7 (biodiversity net gain)	The OHAs consider that sub-paragraph (2) should be amended as follows – “(2) The biodiversity net gain plan must be substantially in accordance with the outline landscape and ecology management plan and the biodiversity net gain statement and must be implemented as approved and maintained throughout the operation of the relevant part of the authorised development to which the plan relates”. The biodiversity net gain statement sets out the approach to BNG adopted by the project and is set out in ES Volume 3, Appendix 9.13 [APP-162] and so its inclusion in R.7(2) is appropriate on this basis. The OHAs note that Requirement 9 of the Cottam Solar Project Order 2024 (2024/943) includes the following sub-paragraph –

		“The biodiversity net gain strategy must include details of how the strategy will secure a minimum of 76.8% biodiversity net gain in habitat units, a minimum of 56.1% biodiversity net gain in hedgerow units and a minimum of 10% biodiversity net gain in river units for all of the authorised development during the operation of the authorised development, and the metric that has been used to calculate that those percentages will be reached”. The OHAs consider it would be helpful if a similar provision (albeit with updated figures etc.) were included in requirement 7 of the instant Order.
24.	R.8 (fencing and other means of enclosure)	As explained in Chapter 6.3 (historic environment) of the LIR, the OHA consider a specific heritage related requirement is required in respect of the Grade II listed Milestone located on Oxford Road and this could be included at the end of existing Requirement 8, as follows – “(7) No part of the authorised development may commence until a detailed scheme of protection for the Grade II listed Milestone located on Oxford Road (NHLE number 1181978) (“the Milestone”) has been submitted to and approved by the relevant planning authority. (8) The scheme mentioned in sub-paragraph (7) must - (a) explain how the Milestone will be protected by fencing during the construction and decommissioning of the authorised development; and (b) be implemented as approved. This addition to R.8 is required to protect and safeguard the milestone during construction and decommissioning.
25.	R.10 (archaeology)	As explained in Chapter 6.3 (historic environment) of the LIR, the OHA consider existing R.10 should be supplemented with new sub-paragraph (4), namely – “(4) Within two years of the completion of the archaeological mitigation fieldwork an updated project design and post excavation assessment detailing all processing, research and analysis necessary to produce and secure the delivery of an accessible and useable archive and a full report for publication must be submitted to and approved in writing by the relevant planning authority”.

		In addition, should the reference in sub-paragraph (2) to “sub-paragraph 8(1)” be replaced with “sub-paragraph 10(1)”.
26.	R.11(2) (code of construction practice)	As explained in Chapter 6.5 (Ecology, Nature Conservation and Trees) of the LIR, the OHA consider that, under sub-paragraph (2), the code of construction practice should also include a construction environmental management plan. A draft construction environmental management plan should be submitted into the examination as soon as possible and officers would be willing to discuss its proposed contents after Deadline 2.
27.	R.14 (decommissioning and restoration)	The OHAs note that Requirement 21(2) and (3) of the Cottam Solar Project Order 2024 (2024/943) differ from R.14 of the instant draft Order as follows – “(1) The date of decommissioning must be no later than 37.5 years following the date of final commissioning. (2) Unless otherwise agreed with the relevant planning authority to which this requirement applies, no later than 12 months prior to the date the undertaker intends to decommission any part of the authorised development, the undertaker must notify that relevant planning authority of the intended date of decommissioning for that part of the authorised development. (3) Unless otherwise agreed with the relevant planning authority to which this article applies, no later than eight ten weeks prior to the intended date of decommissioning of any part of the authorised development notified pursuant to sub-paragraph (2), the undertaker must submit to that relevant planning authority for that part a decommissioning plan for approval”. The OHAs consider it would be helpful if the notification mentioned in R.21(2) of the Cottam order was also provided to the relevant planning authority under the instant draft Order. Similarly, the OHAs would welcome the slightly longer notification period of 10 weeks in respect of the submission of the decommissioning plan.
28.	Proposed new requirement (1)	As mentioned in paragraphs 6.5.51 to 6.5.53 of Chapter 5 (Ecology, Nature Conservation and Trees) of the LIR, the

		OHA consider there should be new a requirement providing for the submission of a farmland bird strategy.
29.	Proposed new requirement (2)	During Issue Specific Hearing 1, there was a discussion on whether a Grampian condition should be included in the draft DCO preventing the undertaker from (i) exercising compulsory purchase powers and (ii) commencing the authorised development until planning permission has been granted for the proposed National Grid substation. The OHAs consider such a provision would be sensible because it would ensure that infrastructure which is important to the instant application has been consented before the instant works can be commenced.
30.	Proposed new requirement (3)	Prior to the commencement of the development, it is anticipated that works will have recently been completed on the A40 and the OHAs would not want these to be dug up under powers contained in the DCO (for instance, for the purposes of installing the authorised development's cable route). In the light of this, the OHAs consider the draft DCO should include a provision which prevents this happening. As matters stands now, the OHA's understand the cable route could cross the area of recently completed works. The OHAs would like clarity that the undertaker will either avoid the refurbished section of road or utilise HDD at a sufficient depth to prevent any harm to the new road. The OHAs consider this could be secured via a requirement to submit details of any proposed cable crossing of the A40 prior to them starting works on that section of the cable routing.
31.	Proposed new requirement (4)	The OHAs are concerned by the prospect of the consequences arising from panel replacement works on the road network and waste management sites. The OHAs consider these concerns could be addressed by including a requirement which requires the undertaker to submit a document like the decommissioning plan (and which would include provision for traffic and waste management) for the replacement panels when the number of panels to be replaced exceeds (say) 50 panels.
32.	Schedule 16 (procedure for discharge of requirements) – paragraph 5 (fees)	The first point to make is that while the relevant planning authorities will be required to deal with applications for consent under articles and under requirements, by paragraph 5(1) of Schedule 16, a fee is only payable in respect of requirements. The OHAs consider that a fee should also be paid for dealing with applications under articles. The Council's approach is consistent with the standard drafting for a provision dealing with procedure for

		the discharge of approvals, as set out in Appendix 1 to PINS Advice Note 15, which concerns drafting DCOs. The second point to make is that the proposed fee is too low. Paragraph 5(1) applies the fee prescribed in regulation 16(1)(b) of the Town and Country Planning (Fees for Applications, Deemed Applications, Requests and Site Visits) (England) Regulations 2012. This amounts to £145. If we assume an hourly rate of £100 for an officer to deal with this work, it would mean the officer would have to deal with any discharge application within approx.1 hrs and 24 minutes before dealing with the application was costing the relevant authority money. It is unlikely that any application will be capable of determination within that time period. While no local authority can make a profit for this work, it is reasonable for it to seek the full recovery of the actual costs incurred. This is not only about fairness but also about the way in which the Order is drafted. For example, by paragraph 2(2) of Schedule 16, the relevant planning authority will have 8 weeks to make its decision on any application and if no decision is made within that period, consent will be deemed to have been granted. By article 45(4) of the Order, a similar regime applies in respect of consents sought under articles. Dealing with any application for consent under this Order will therefore be a matter of high priority for the relevant planning authority and it is possible that external help will be sought to ensure matters are dealt with on time. Rather than the regime currently proposed in the Order, the OHAs consider it would be preferable if the Applicant and OHAs entered into a planning performance agreement (“PPA”) for the full recovery of the OHA’s costs in discharging any application under the Order. The OHAs consider there is enough time to agree a PPA during the Examination and would be willing to share a first draft of such an agreement with the Applicant in order to progress matters. Once the PPA is agreed, existing paragraph 5 can be replaced with a provision which states fees for applications will be paid in accordance with the PPA.
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9. Summary and Conclusion

9.1 This report has assessed the impacts of the proposed development that have been identified within the applicant's Environmental Statement, within the context of the OHA local knowledge and understanding of the area, and with reference to relevant local and national policies.

9.2 The Botley West Solar Farm will result in numerous impacts which can be summarised as follows:

Table 21 - Summary of Impacts of Botley West Solar Farm for Local Impact Report

Topic Area	Document	Potential Impact
Green Belt	7.1 - Planning Supporting Statement (PSS) including Green Belt Case [APP-225]	Negative
Historic Environment	(ES Chapter 7) [APP-044]	Negative – Built Heritage Neutral – Archaeology
Landscape and Visual Impact Assessment	(ES Chapter 8) [PDB-006]	Negative
Ecology, Nature Conservation and Trees	(ES Chapter 9) [APP-046]	Negative*
Hydrology and Flood Risk	(ES Chapter 10) [APP-047]	Neutral
Ground Conditions	(ES Chapter 11) [APP-048]	Neutral
Mineral safeguarding	(ES Chapter 11) [APP-048]	Negative
Traffic and Transport	(ES Chapter 12) [APP-049]	Neutral
Public Rights of Way	(ES Chapter 12) [APP-049] (ES Chapter 17) [APP-054]	Negative
Noise and Vibration	(ES Chapter 13) [APP-050]	Neutral
Climate Change / Resilience	(ES Chapter 14) [APP-051]	Neutral – Subject to resilience
Socio-economic	(ES Chapter 15) [APP-052]	Jobs – Neutral Tourism – Negative
Human Health	(ES Chapter 16) [APP-053]	Neutral
Agricultural Land Use	(ES Chapter 17) [APP-054]	Negative
Waste and Resources	(ES Chapter 18) [APP-055]	Negative
Air Quality	(ES Chapter 19) [APP-056]	Neutral
Aviation impacts	ES Appendix 4.4 [APP-128] (ES Chapter 16) [APP-053]	Negative
Cumulative Effects and Inter-relationships	(ES Chapter 20) [APP-057]	Negative

* Negative impact concluded on the basis that insufficient information has been provided by the Applicant.

- 9.3 The provision of renewable energy of the nature proposed is supported in principle. Notwithstanding, CDC, VWHDC, WODC and OCC recognise that the delivery of new renewable energy infrastructure must be weighed against the wider environmental, economic and social impacts to ensure that the negative impacts do not outweigh any broader benefits that may arise from the proposed development.
- 9.4 This report has identified negative impacts that would result from the proposed development.
- 9.5 The OHA request that the Secretary of State has regard to this Local Impact Report when making their decision.

Appendices

Appendix 1: Botley West Solar NSIP Advice on Landscape and Visual and Heritage Matters prepared by LUC May 2025

Appendix 2: Cherwell District Council – Solar PV Strategy dated 16th April 2025

Appendix 3: Maps Showing Required Onsite and Offsite Public Rights of Way Mitigation Measures

Appendix 1: Botley West Solar NSIP Advice on Landscape and Visual and Heritage Matters prepared by LUC May 2025



West Oxfordshire District Council

Botley West Solar NSIP
Advice on Landscape and
Visual and Heritage
Matters

Final report

Prepared by LUC

May 2025

West Oxfordshire District Council

Botley West Solar NSIP

Advice on Landscape and Visual and Heritage Matters

Project Number
13333

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Chapter 1

Introduction

1.1 LUC was commissioned by West Oxfordshire District Council (WODC), on behalf of the host authorities of the proposed Botley West Solar Farm ('the Project') to review materials submitted by Photovolt Development Partners on behalf of SolarFive Ltd. ('the Applicant') in support of the Project – an 840MW solar voltaic array and connection infrastructure. LUC has considerable expertise and experience working in this area, as well as working on NSIP and DCO projects. LUC has prepared much of the LCA work in Oxfordshire (at a district level, and in relation to National Landscapes), as well as regarding Blenheim Palace and the Green Belt. This includes:

- LUC's update of all of England's National Character Areas (for Natural England)
- Landscape Character Assessment, as well as Green Belt Review, Green Infrastructure Strategy, and Landscape Sensitivity Assessment (South Oxfordshire & Vale of White Horse)
- West Oxfordshire Local Plan 2014 Habitats Regulations Appraisal (West Oxfordshire Council)
- Salt Cross AAP and West Eynsham SPD Sustainability Appraisal (West Oxfordshire Council)
- Land southeast of Woodstock, UNESCO-compliant Heritage Impact Assessment – addendum (Cherwell District Council, 2024)
 - This recently completed project provides LUC's historic environment team with detailed experience of understanding and working with the Outstanding Universal Value of the Blenheim Palace WHS in an impact assessment context.
- Land southeast of Woodstock, Heritage Impact Assessment (Cherwell District Council, 2024)
- Infrastructure Delivery Plan (Cherwell District Council, 2024)
- Landscape evidence base: Green Gaps Study (Cherwell District Council, 2024)
- Landscape Character Assessment (Cherwell District Council, 2024)
- Landscape evidence base: Site Landscape Assessments (Cherwell District Council, 2024)
- Landscape evidence base: Local Landscape Designations (Cherwell District Council, 2024)
- Green Belt Study: Additional Green Belt Site Assessments (Cherwell District Council, 2024)
- Strategic Green and Blue Infrastructure Framework for Potential Sites with the draft Cherwell 2040 Local Plan (Cherwell District Council, 2023)
- Measuring Impact, Managing Change: understanding the historic environment of the Oxford-Cambridge Growth Arc (Historic England, 2020-23)
- Oxfordshire Cotswolds Garden Village, West Eynsham Strategic Development Area: Landscape and Visual Assessment (West Oxfordshire District Council, 2019)
- Oxfordshire Cotswolds Garden Village, West Eynsham Strategic Development Area: Historic Environment Assessment, and Landscape and Visual Assessment (West Oxfordshire District Council, 2019).

1.2 Other relevant projects include: Oxford City Green Belt – Further Assessment, West Oxfordshire Green Infrastructure advice, South Oxfordshire Green Infrastructure and Open Space Study, and Qualitative Views Analysis for Oxford View Cones.

1.3 This review focused on the Environmental Statement (ES), associated technical appendices and publicly-available consultation responses on the Planning Inspectorate website. It focused solely on built heritage and historic landscapes, and landscape and visual impact. The archaeology component of the historic environment has been dealt with by Oxfordshire County Council.

1.4 It is intended to contribute to the host authorities' Local Impact Report (LIR) by:

- Appraising the baseline sources used.
- Unpacking and appraising the methodologies set out in the ES.
- Assessing how effectively these have been applied in practice, and identifying any relevant shortcomings or information gaps.
- Identifying where assessment outcomes are inconsistent, over/under-estimated, or may otherwise require revisiting.

1.5 In addition, the report sets out the requirements for:

- Additional information.
- Design changes to avoid and/or reduce identified impacts.

Background

1.6 The Project lies within the administrative areas of Cherwell District Council (CDC), West Oxfordshire District Council (WODC), Vale of White Horse District Council (VWHDC) and Oxfordshire County Council (OCC).

1.7 The Project location extends from an area of land in the north, situated between the A4260 and the Dorn River Valley near Tackley and Wootton (the Northern Site), through a central section, situated broadly between Bladon and Cassington (the Central Site), and connecting to a section further south near to Farmoor Reservoir and north of Cumnor (the Southern Site), where the Project will connect to the National Grid transmission network. The construction period is expected to last 24 months.

1.8 The majority of the Project lies within West Oxfordshire and within the Oxford Green Belt, with most of the land proposed for the Project currently used for arable crops or pasture (described as grazed improved grassland, arable fields, wetland meadow and areas of poor semi improved grassland (see paragraph (para.) 6.3.10 of the NTS)).

1.9 The Blenheim Palace World Heritage Site (WHS) is located just to the west of the Project Site. The boundary of the WHS is almost contiguous with the boundary of the Blenheim Palace Grade I Registered Park and Garden. The Cotswolds National Landscape (formerly AONB) extends to within c.200m of the project near Hanborough Station (River Evenlode).

Chapter 2

LVIA Review

Introduction

2.1 A Landscape and Visual Assessment (LVIA) was prepared for the proposed Botley West Solar Farm by RPS in November 2024. The assessment forms Chapter 8 within Volume 1 of the Environmental Statement (ES). LUC was asked by West Oxfordshire District Council (WODC) to provide a review of this LVIA to determine its adequacy and accuracy.

2.2 This chapter considers the scope, methodology, baseline information, assessment and mitigation, with reference to the Guidelines for Landscape and Visual Impact Assessment, 3rd edition¹ (GLVIA3). In addition, it provides a professional opinion on the robustness of the judgements made in the LVIA based on guidance within GLVIA3, to help inform WODC's judgement on the Proposed Development with respect to landscape and visual effects.

2.3 This review was prepared by Chartered Members of the Landscape Institute (CMLI) at LUC.

Approach to the Review

2.4 This initial review was informed by a desk study, with reference to available online mapping, as well as air and street level photography, and will be verified on site. The review focuses on examination of the LVIA included within ES Volume 1 Chapter 8. Figures, viewpoint photography, photomontages and appendices contained within Volumes 2 and 3 of the ES have also been examined as part of this review, along with the Outline Landscape and Ecology Management Plan (oLEMP) in Appendix 7.6.3 of the ES.

The Site and Proposed Development

2.5 The Proposed Development is a solar farm with associated infrastructure (underground cabling, inverters, transformers, 156 x power converter stations (up to 3.5 metres (m) high), NGET substation (12.5m high), main substation (11m high), 6 x secondary substations (6m high) access roads and internal maintenance tracks, fencing, security cameras and lighting etc.) extending across a large agricultural site.

2.6 The LVIA splits this up into three sites and, for each, states that the developable area for the solar arrays is as follows:

- Northern site – approximately 247.3 hectares (ha);
- Central site – approximately 545.2 ha; and
- Southern site – approximately 46 ha.

2.7 The proposal includes solar panels of up to 2.3m in height above ground level, and fixed with a south facing aspect. The solar arrays will extend in east to west orientated lines, and the front view of the panels

¹ Landscape Institute and Institute of Environmental Management & Assessment (2013) Guidelines for Landscape and Visual Impact Assessment (Third Edition)

will slope down to the south. Views from the north will therefore look into the rear of the panels, and those from the east and west will look along the rows. The nature of the proposed views will therefore vary according to the direction of view. The design life of the scheme is described as 40 years. Low density sheep grazing *'will be used as part of the project.'* (NTS para. 4.3.8)

2.8 Proposed security fencing will run along the perimeter of the Site, although details of its type and height have not been provided in the LVIA chapter. The NTS (para. 5.3.16) describes it as being up to 2.1m in height. As it forms part of the Proposed Development, details of fencing should be included in Tables 8.7 and 8.19 of the LVIA chapter. This sets out the issues considered within the assessment and the maximum design scenario considered for the assessment of potential impacts, respectively. This also relates to the proposed CCTV masts, which are included in the assessment, but for which detail has not been provided in the LVIA chapter. Other components of the proposal include an on-site substation with a proposed height of up to 11m, six secondary substations with a height of up to 6m, and a National Grid Electricity Transmission (NGET) has also been considered with a height of up to 12.5m. There is no information regarding the size of their proposed footprints and again these details should be given in the LVIA chapter, or a cross reference provided to where the information is clearly set out. A number of cable route corridors also form part of the proposal, linking the three sites. The LVIA chapter refers to Figures 5.1 to 5.5 of the ES, though provides little detail about the proposed routes in the LVIA chapter.

2.9 The Site is extensive, extending across a large area of relatively low-lying agricultural land. It is located between several settlements including Wootton, Tackley, Woodstock, Shipton-on-Cherwell, Bladon, Long Harborough, Church Harborough, Begbroke, Cassington, Eynsham, Botley and Cumnor. It is adjacent to the Blenheim Palace World Heritage Site and Registered Park and Garden.

2.10 The area of the site accommodating the proposed solar PV panels is occasionally crossed by tributary streams/ brooks of the Rivers Dorn, Glyme and Thames, minor roads / access tracks and a network of Public Rights of Way (PRoWs), including the promoted Oxfordshire Greenbelt Way and the Shakespeare Way. The site is bounded by several areas of woodland. Given the way the proposed project relates to settlements and communities, a key issue will be its effects upon local residents both in settlements and scattered through the countryside, and users of the PRoW network, including how they experience the local landscape. Given users of PRoW will experience a sequence of views of the project as they move through the landscape, a key issue will be the totality and significance of the sequential views, i.e. not simply the experience from a single location, but how multiple views are experienced in sequence during a walk. The project has potential to give rise to significant adverse landscape and visual effects due to its scale and extent, and the availability of open views to the Proposed Development, as part of a wide panorama.

Structure of the Review

2.11 The approach to this review was informed by the guidance contained within the Landscape Institute's Technical Guidance Note 1/20² and structured as follows:

- **Methodology, scope and process.** For example, does the scope of the assessment meet the requirements of the Scoping Opinion? Is the terminology used in the methodology clearly defined? Does the assessment demonstrate comprehensive identification of receptors and of all likely effects?
- **Baseline information.** For example, what is the reviewer's opinion of the scope, content and appropriateness of both the landscape and the visual baseline studies? Has the value of landscape and visual resources been appropriately addressed? How appropriate are the viewpoints that have been used?

² Landscape Institute's Technical Guidance Note 1/20: Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs) (10 Jan 2020)

- **Assessment of effects.** For example, is it clear how the methodology was applied in the assessment? What is the reviewer's opinion of the consistency and objectivity in application of the criteria and thresholds set out in the methodology? Does the document clearly identify landscape and visual effects which need to be considered in the assessment?
- **Mitigation and design.** For example, how appropriate is the proposed mitigation, both measures incorporated into the scheme design and those identified to mitigate further the effects of the scheme, and mechanisms for delivering the mitigation?
- **Visualisations.** For example, are the graphics and/or visualisations effective in communicating the characteristics of the receiving landscape and visual effects of the proposals at agreed representative viewpoints?

Methodology, Scope and Process

2.12 This section identifies whether the methodology, scope and process of undertaking the LVIA is sufficient and complete.

Scoping responses

2.13 An EIA Scoping Report was submitted to the Planning Inspectorate alongside a request for a formal Scoping Opinion, in accordance with Regulation 10 of the EIA Regulations 2017 in June 2023. The Scoping Opinion adopted by the Inspectorate on behalf of the Secretary of State was received in July 2023. In relation to landscape and visual impact, responses received from the Planning Inspectorate related to the scope and methodology of the assessment, Study Area extent, requirement for agreement of viewpoint locations with the relevant consultees and presentation of photomontages.

2.14 It was requested that the LVIA considers the effects of lighting but it appears that this has not been addressed. The LVIA chapter does not appear to provide suitable justification for the scoping out of the effects of lighting, including temporary lighting during construction.

2.15 It was requested that *"the need for a Residential Visual Assessment (RVAA) ... be justified based on the conclusions of the LVIA and agreed with the relevant consultation bodies"* (Table 8.5). It is not clear in the LVIA chapter if the exclusion of an RVAA was agreed with the 'relevant consultation bodies', and limited justification for its exclusion is provided.

2.16 The Planning Inspectorate requested that *"The ES should also include an assessment of impacts during winter in year 10 to understand the effectiveness of mitigation or explain why this is not necessary with reference to relevant guidance. The ES should also justify the year of maturation of vegetation"* (Table 8.5 of ES Volume 1 Chapter 8). It is noted that the assessment considers the Proposed Development at year 15 instead (which is considered appropriate) but appears to only consider the effects during summer and therefore does not consider the worst-case scenario (i.e. winter) at year 15. This approach is reflected by the photomontages, which illustrate the Proposed Development at year 15, in summer only. To recognise a worst case scenario, winter views should be provided.

Guidance

2.17 The methodology used to prepare the LVIA makes reference to relevant guidance documents, including GLVIA3, in para. 8.4.2. This is the correct guidance to have followed for the assessment. However, the paragraph also refers to Landscape Character Assessment Guidance from 2002 (Countryside Agency in conjunction with Scottish Natural Heritage), which is out of date having been replaced by guidance from Natural England in 2014. The LVIA refers to the 2014 Natural England guidance later on in para. 8.5.1 where it repeats the list of relevant guidance. For the avoidance of doubt both paragraphs should be consistent.

Methodology

2.18 The methodology used to prepare the LVIA is presented in Section 8.4 of ES Volume 1 Chapter 8. It also continues in Section 8.5.

2.19 The LVIA summarises the issues considered as part of the assessment in Table 8.7 of ES Volume 1 Chapter 8. However, it appears to downplay the long-term nature of the project by classing the 'Operation and Maintenance' phase as 'temporary'. Whilst technically speaking, a 40-year lifespan is temporary, not all works will be temporary. The long-term nature of the operation phase should be considered as part of the magnitude of change, and this does not seem to have been the case throughout the assessment.

2.20 The methodology acknowledges the relevance of GLVIA3 as guidance for undertaking LVIA's, and the components of the report generally align with the broad principles set out in GLVIA3. It makes a clear distinction between the assessment of landscape and visual effects (see para. 8.5.2 in ES Volume 1 Chapter 8) as recommended. This approach is carried through to the assessment. It is also correct that a Landscape and Visual Impact Assessment (LVIA) was prepared rather than a Landscape and Visual Appraisal (LVA), given EIA was required.

2.21 The methodology uses terminology that is mostly consistent with GLVIA3. There is no mention of 'magnitude' in para. 8.5.3 and Diagram 1 of ES Volume 1 Chapter 8, although the 'magnitude' is referred to within the assessment.

2.22 The criteria used to make judgements are set out in the methodology. In accordance with GLVIA3, this includes for the sensitivity of landscape and visual receptors (including consideration of both value and susceptibility); and magnitude of change to receptors (with reference to scale of change, geographical extent, duration and reversibility).

2.23 The criteria for determining sensitivity are set out in Tables 8.9 and 8.10 of ES Volume 1 Chapter 8, for landscape and visual receptors respectively. Definitions of higher and lower susceptibility and value are provided in the tables, but are set out against different sensitivity ratings. This is confusing as it is not clear what the sensitivity rating would be if a receptor was to have a high susceptibility and low value, for example. The ratings set out in the first column under the heading 'Sensitivity' appear to be the susceptibility and value scores in practice. The tables could be laid out more clearly, with susceptibility grades running up one axis, and value grades along the other, so that it can be logically followed.

2.24 In Table 8.9 of ES Volume 1 Chapter 8, the criteria used for landscape susceptibility seems vague and does not clearly set out the characteristics of the landscape which are being considered to determine its susceptibility. Table 8.10 of ES Volume 1 Chapter 8 appears to have the wrong title (it should say 'Definitions of Visual Sensitivity' and not 'Landscape'). The criteria for visual susceptibility does not refer to local communities which is considered an omission, and it limits the definition of 'high' visual susceptibility only to people using public rights of way.

2.25 The methodology acknowledges that reversibility is a consideration of the magnitude of change. In paras 8.5.9 and 8.5.11 of ES Volume 1 Chapter 8, it states that the Project is considered to be fully reversible. This is incorrect as aspects of the development such as earthworks, and the mitigation planting (which forms part of the Proposed Development) will not be reversible. It is not clear what will happen to the access tracks and if they will remain in-situ beyond the operational phase. Will the substation be removed?

2.26 A matrix is provided in Table 8.12 of ES Volume 1 Chapter 8 and *'has been used to guide the assessment of effects. Where the matrix provides a choice of level of effects, e.g., Minor to Moderate, the assessor has exercised professional judgement in determining which of the levels is more appropriate'* (para. 8.5.18 of ES Volume 1 Chapter 8). The LVIA goes on to say that *'In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached'* (para. 8.5.19 of ES Volume 1 Chapter 8). The methodology therefore acknowledges that professional judgement is an important part of the LVIA. This is appropriate and follows advice given in GLVIA3.

2.27 The overall levels of effect (Table 8.13 of ES Volume 1 Chapter 8) are set out as being Substantial, Major, Moderate, Minor, Negligible and Neutral, which is appropriate and in line with GLVIA3. The subsequent para. (8.5.22 of ES Volume 1 Chapter 8) outlines that overall effects of Moderate or less are not considered to be significant. This seems to set the bar high in terms of the threshold of significance, particularly as the definition for a medium magnitude in the applicant's methodology refers to '*Where proposed changes would be noticeably out of scale or at odds with the character of an area*' and '*introduction of elements that may be prominent*' and '*change may be prominent*' (Table 8.11 of ES Volume 1 Chapter 8). These sound like significant effects.

2.28 Paras 8.4.11 - 8.4.13 of ES Volume 1 Chapter 8 set out the limitations and assumptions. It is noted that this is repeated (with slightly different wording) in paras 8.5.23 - 8.5.25. The LVIA states that winter photography was taken to allow an accurate projection of the 'worst case scenario'. As mentioned previously, it is noted that winter photography is used in year 1 photomontages, whereas summer photography is used in year 15 photomontages and therefore does not illustrate the 'worst case'.

2.29 The photomontage methodology presented in ES Volume 3 Appendix 8.4 lacks the provision of all information needed to accurately verify visuals. This is expanded upon in Chapter 3 of this review, but a number of elements that should accompany visualisations are not present. Para. 8.6.43 of the LVIA states the camera height is 1.7m. This should be included within the photomontage methodology, and conflicts with recommended guidance. This point is expanded upon in a full review of the photomontages provided in Chapter 3.

Study area

2.30 The approach to defining the Study Area for the Proposed Development is set out in paras 8.4.6-8.4.10 of ES Volume 1 Chapter 8. The approach included analysis of Zones of Theoretical Visibility (ZTV) and consultation with relevant stakeholders, which is consistent with GLVIA3. The Study Area covers land up to 5km from the Order Limits of the Project. Given the relatively low-lying topography and nature of the Proposed Development, the defined Study Area appears to be appropriate. It is illustrated on ES Volume 2 Figures 8.7, 8.244, 8.245, 8.246 and 8.247.

Baseline Information

Landscape baseline

2.31 A description of the existing landscape baseline is provided in Section 8.6 of ES Volume 1 Chapter 8.

2.32 It is noted that the Cotswolds National Landscape lies around 250m from the proposed project at its closest point, near Hanborough Station, with the designated area running along the River Evenlode.

2.33 The report does not specifically describe the landscape baseline of the Site but instead refers to the landscape character areas/ types that fall within it. Extracts taken from various published landscape character assessments are provided in ES Volume 3 Appendix 8.1 (although this appendix appears to be incomplete as several cross-references relating to figures and fields within the Site are missing, with a placeholder 'x' still in place). Whilst appreciating that this approach is used given the size of the Site, it would be helpful for a summary to be provided setting out clearly the landscape character and features of the Site, as this is not clearly portrayed. The LVIA does not indicate how the descriptions from the various published landscape character assessments should inform any proposed landscape and visual related mitigation / design, which would be a valuable addition.

2.34 The sensitivity ratings for each of the landscape character areas/ types considered in the assessment have been provided in Table 8.15 of ES Volume 1 Chapter 8. The preceding paragraph (8.6.28 of ES Volume 1 Chapter 8) states the sources which have been used to determine the sensitivity of landscape character areas/ types, but in the table, no justification is provided as to how each sensitivity rating was

reached, in terms of the contribution of judgements on susceptibility and value. Within this section, the sensitivity of the Site itself has not been judged, which is an omission. Instead, para. 8.6.34 of ES Volume 1 Chapter 8 provides comment only on the value of the Site.

2.35 Within Table 8.16 of ES Volume 1 Chapter 8, the Cotswolds National Landscape is judged to have the same level of sensitivity (High) as users of public rights of way and access land. There is no justification provided as to why the nationally designated landscape is judged to be of 'High' rather than 'Very High' sensitivity.

Visual baseline

2.36 Baseline information in relation to visual receptors is provided in Section 8.6 of ES Volume 1 Chapter 8. The LVIA does not appear to include reference as to why the viewpoints included in the LVIA were selected. However, the types of receptors are identified in Table 8.17 of ES Volume 1 Chapter 8 along with the overall sensitivity. Again, no justification is provided as to how each sensitivity rating was reached, in terms of susceptibility and value. The viewpoints are shown on ES Volume 2 Figures 8.9 – 8.11.

2.37 A total of 55 representative viewpoints are included within the visual assessment. It is noted that the locations of the viewpoints are mostly within or along the boundary of the Order Limits, with few viewpoints located within the wider landscape. There are areas showing theoretical visibility on the ZTV in ES Volume 2 Figures 8.9 – 8.11 that are further away from the boundary of the Order Limits yet it appears that viewpoints have not been considered from these areas. There is scope to rationalise those which duplicate very similar close-range views.

2.38 The LVIA states that the viewpoint selection was carried out in consultation with Cherwell Council, Vale of White Horse Council, West Oxfordshire Council and Oxfordshire County Council, with additional viewpoints requested and some having been accepted and others discounted.

2.39 There appears to be no consideration of local communities as a visual receptor. The ZTVs indicate theoretical visibility from the edge of settlements within the study area (e.g. Wootton, Woodstock, Kidlington, Long Hanborough, Freeland, Cassington, Eynsham and Botley). The LVIA does not state why these have been scoped out. Given the scale of the Proposed Development and the number of settlements surrounding the Site, the exclusion of local communities is considered to be an omission.

2.40 In Table 8.18 of ES Volume 1 Chapter 8, visitors to Blenheim Palace Park and Gardens are included in the list of 'key receptors taken forward to assessment' but appear not to have not been assessed in the LVIA. There is no clear justification as to why they have been excluded.

2.41 Regarding Private Views para 8.6.78 states *"While there is no legal "right to a view", the viewpoints from private properties have been considered in the design of the Project, and a range of mitigation measures (including a minimum 25 m offset from the outer edges of residential properties) have been proposed to soften viewpoints that will ensure the Project is appropriately responds and is respectful to the surrounding landscape."* A 25m offset from residential properties may be appropriate in some cases, but in others it is likely to be inadequate, perhaps because of the lack of intervening vegetation, the nature of the topography, or the exact relationship of the settlement or property/garden with the surrounding landscape. It is suggested that a bespoke approach to the requirement for offset and the development of mitigation would be more appropriate, and that applying a standard 'buffer' distance will not always be sufficient to mitigate significant effects.

2.42 The LVIA scopes out the assessment of private views from residential properties and the need for an RVAA, stating that: *"Due to the low level of the Project, particularly the solar arrays, and proposed mitigation, there is no potential for any private views to be adversely affected to an extent that would result in a level of harm of Substantial, which trigger the threshold for an RVAA being required. As such, private views are not considered further in this Chapter"* (para. 8.6.80 of ES Volume 1 Chapter 8).

2.43 This paragraph implies that Step 4 of a RVAA, as set out in the Landscape Institute's Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19 (LI TGN 2/19), which is about forming a

judgement with respect to the Residential Visual Amenity Assessment, would only apply if there were properties that would have an overall significant effect of 'Substantial'. The methodology provided in the LVIA (Table 8.12 of ES Volume 1 Chapter 8) indicates that this would only be possible if a receptor had a sensitivity rating of Very High. It is not clear what the sensitivity of residents are as this is not mentioned in Table 8.10 of ES Volume 1 Chapter 8 (Definitions of Landscape Sensitivity). However, in the LVIA 'Very High' is defined as "*Observers, drawn to a particular view, including those who have travelled from around Britain and overseas to experience the views*". This approach appears to set the bar too high in determining if an RVAA should be included, as residents in local communities would never have travelled from around the world to experience the views from their communities. Therefore, the assumption that an RVAA is not needed because properties would not experience a 'level of harm of Substantial' appears flawed in that this situation could never arise. Clarity should be sought on this point. Regardless, it is the level of magnitude of change (not the overall level of effect) that determines if Step 4 of a RVAA should apply, as para. 4.18 of LI TGN states: "*In this final step, and only for those properties where the largest magnitude of effect has been identified, a further judgment is required*".

Zone of Theoretical Visibility

2.44 ZTVs are presented on ES Volume 2 Figures 8.7, 8.8, 8.8a, 8.9-8.11. It is not clear how the ZTVs were prepared as no methodology appears to have been provided, and it is therefore unclear whether individual points for each PV panel/substation etc have been used or if a grid of points across the development was used instead. It is also not clear if the finished floor levels for the ancillary buildings have been accounted for. It would be useful to understand why the applicant has created a proxy Digital Surface Model (DSM) instead of using LiDAR Composite DSM, as the latter would provide a truer depiction of screening within the study area, resulting in a higher resolution dataset capturing all surface features. The proxy DSM dataset constructed by the applicant is based on a number of height assumptions across a single area of screening, which has limitations. Typically, within a block of vegetation there are a variety of species, growth patterns etc. Consequently, if using the proxy DSM, it will not allow for the variation in height across a block of vegetation. This could result in an over-emphasis of the degree of screening provided by the vegetation. LiDAR data can also identify gaps within a woodland area. This would allow a degree of visibility through vegetation blocks to be captured. A similar point can be made for built structures within the study area. In any case, ZTVs should be verified on Site in winter as vegetation is only likely to provide a filtering of views, rather than full screening. In assessing effects, the worst/maximum case scenario should be recognised.

2.45 Para. 8.6.38 of ES Volume 1 Chapter 8 states that '*The ZTV shown on Figure 8.8a [EN010147/APP/6.4] shows a 'bare earth' scenario, with only existing settlement barriers and local topography (i.e. no woodland)*'. This statement is unclear i.e. is a bare earth ZTV shown or not? Bare earth does not account for 'existing settlement barriers', with the only barrier being the landform itself. As such, it is unclear if a worst case 'bare earth' ZTV is included, and clarity is required.

2.46 Para. 8.6.39 of ES Volume 1 Chapter 8 states "*The ZTV takes into consideration significant blocks of woodland and built form but does not consider the screening effect of all vegetation. While the ZTV is a good representation of what might be seen, as it does not take account of smaller blocks of woodland, hedgerows, individual tree cover or garden vegetation, which add to the amount of screening provided by existing vegetation; the ZTV is therefore a worst-case scenario of theoretical visibility*". The applicant has assumed the heights of buildings and woodland blocks to be 9m and 12m respectively, but is unclear how these heights have been derived and so further clarification is required. Assuming that woodland provided a complete screen can lead to underestimation of effects. In practice deciduous woodland can be relatively transparent in winter months.

Assessment of Effects

2.47 This section provides a review of the assessment of landscape and visual effects of the Proposed Development. The assessment of landscape and visual effects, taking into account embedded mitigation and additional mitigation, is set out in Section 8.9 of ES Volume 1 Chapter 8. Key points are highlighted in bold:

2.48 The Non-Technical Summary (NTS) describes landscape and visual effects. Whilst a useful summary, it in itself leads to questions as to the judgements made. Notably it would be expected that a development of this scale would have a major significant effect on the landscape character of the site itself, and within areas from which it will be visible at close range. Moderate, but **not significant**, effects are recognised across the site itself, and **no significant effects on local landscape character** beyond the site. This does not appear credible. Similarly, an assessment of **no significant visual effects** except during construction does not seem at all credible for a development of this size and nature, with the justification of this being weak. The proposed development would extend some 20km from north to south and cover a very large area of rural landscape, across which there are views from numerous settlements, communities, Public Rights of Way, roads railways and other routes, woodlands, open space and parkland, as well as from the Cotswolds National Landscape. The summary is quoted directly as follows:

'6.3.16 A number of potential impacts upon landscape and visual resources associated with the construction, operational and maintenance, and decommissioning phases of the Project, were identified.'

*'6.3.17 The sensitivity of the landscape character, within which the Project site is located, is Medium to High and direct effects on the Project site area during construction, at winter Year 1 (on completion) and for the lifetime of the Project (during Operation), would result in **Moderate adverse significance of effect on the landscape character of the Project site itself which, on balance when considering the protection and retention of existing landscape features, is not considered significant**. Indirect / perceived landscape effects on other landscape character areas / types, within the wider 5 km study area would not be significant.'*

*'6.3.18 Over time, as proposed landscape planting matures and the appropriate management of the existing vegetation is implemented, effects on landscape character would reduce further. Overall, the **quality and character of the wider landscape within the study area would be maintained and would have the capacity to accommodate the Project without significant effects**.'*

*'6.3.19 **There are likely to be very few people who would experience significant visual adverse effects as a result of the Project**. During construction some temporary significant effects on views are possible but these will be localised, in the short term and before mitigation planting matures. The activities and developments may be barely perceptible when seen at distance, or prominent and **at times dominant when in close proximity**.'*

'6.3.20 Taking into account the mitigation measures described above, the following significant effects are likely to occur with respect to landscape and visual resources:'

*'• There are **no significant adverse effects either temporary and permanent effects on the local landscape character** arising from construction and operation of the Project.'*

*'• **12 significant adverse temporary and permanent effects on the views experienced by users of public rights of way (PRoW) and road users have been identified**. These are views from PRoW 416/5/20 and 416/5/10, northern section of the Project (Representative Viewpoints 5b and c), bridleway 342/1/10, near Banbury Road (Representative Viewpoint 13), PRoW 265/24/20 (Representative Viewpoint 17), PRoW 238/5/20 (Representative Viewpoints 25 and 26) near Church Hanborough, PRoW 124/5/10, near Begbroke (Representative Viewpoint 32 and 33), PRoW 152/6/10, near Purwell Farm (Representative Viewpoints 38 and 39), PRoW 184/50/20, Oxford Green Belt Way adjacent Farmoor Reservoir (Representative Viewpoint 50) and PRoW 184/16/20 (Representative Viewpoint 54).'*

*‘Significant effects identified above are for winter Year 1 only, i.e. before mitigation has been established. **There are no significant effects identified once the mitigation matures. No residual significant effects, at summer Year 15, have been identified.***’

*‘6.3.21 The visual amenity within the wider 5 km study area, due to intervening layered vegetation and topographical variation, **would largely be maintained.** The nature of the Project would not be entirely uncharacteristic of the study area as a whole, albeit that it would be at a larger scale, and significant effects would be limited to people experiencing views in close proximity during the operational phase of the Project from a number of local public rights of way passing through the Project. Over time, as proposed landscape planting matures, potentially significant visual effects would be reduced.’*

‘6.3.22 In terms of cumulative effects, the Project has the potential to contribute to localised adverse effects on the Landscape Character Areas / Types within which the Project and cumulative scheme(s) are located. In addition, cumulative adverse visual effects where the Project and cumulative scheme(s) are visible within the same view(s). However, no significant cumulative landscape or visual effects on visual receptors have been identified as a result of the Project.’

*‘6.3.23 A total of 12 significant effects, detailed above, have been identified. **In the remaining 43 Representative Viewpoints, no other significant effects have been identified.** On balance, it is considered that the quality and character of the landscape and visual resources would largely be maintained and **would have the capacity to accommodate the Project without significant effects beyond those identified at a very local level or where it would be difficult to entirely mitigate visual effects.** In addition, proposed planting would have a longer term benefit reinforcing the landscape character of the local landscape.’*

Landscape effects

2.49 The assessment of landscape effects during the construction phase is set out from para. 8.9.3.

2.50 With regard to vegetation removal, this is described imprecisely such as at para 8.9.101: *“The physical landscape characteristics which are attributed to these Character Areas would largely have been retained and protected during construction and enhanced as part of the Project. There would the loss of small areas of grassland habitat and hedgerows as the access track is completed and where the invertors, substation and other solar farm infrastructure is installed”*. In order to understand the extent of vegetation removal required, and given its importance, precise distances of hedgerow, areas of grassland, and numbers and species of trees etc should be clearly set out, or reference made to the location in the Environmental Impact Assessment Report where this information is detailed and shown in Figures. The effects of removal of this vegetation on landscape character and on views should also be clearly described.

2.51 The LVIA states that the *“construction works would cause a Small magnitude of impact to the character of the host Character Area/ Types”* (para. 8.9.5), but then para. 8.9.6 refers to the magnitude of impact as being ‘low’. These statements appear to have mixed up the terminology. ‘Small’ is a term that relates to the size/ scale (which is a contributing factor to the magnitude). Limited justification is provided for the judgement of magnitude on the host LCA/LCTs during construction, and it is considered that the effects have been underemphasised as direct effects of a construction project of this scale are likely to give rise to a higher than ‘low’ magnitude of impact to the host LCA/LCTs. Para. 8.9.7 is confusing as it refers to the magnitude of impact of the Project Site under the sub-heading ‘Significance of the effect’ whereas this would be clearer under the preceding sub-heading of ‘Magnitude of impact’. Again, limited justification is provided for the judgement of magnitude of impact on the Project Site during construction, and it is considered that the effects have been underemphasised, as construction activities of the scale proposed are likely to result in direct and significant effects.

2.52 The assessment of landscape effects during the operation and maintenance phase is set out from para. 8.9.100. Within the narrative set out in paras 8.9.103 – 8.9.106, which justify the magnitude of impact upon the LCA/LCTs and the Project Site, mitigation measures (including new planting) are referred to throughout and so this judgement appears to reflect year 15. There appears to be no explanation as to the magnitude

of impact at year 1. As for construction, it is considered that the effects on landscape during the operation and maintenance phase have been underemphasised – both the effects on the host LCA/LCTs and the Project Site are reported to be not significant. It is considered that locally significant effects on landscape character are inevitable given the extensive change in land use across a site of this scale.

2.53 In para. 8.9.111, the LVIA has grouped the host LCAs together to form one judgement on the ‘LCA as a whole’ which seems too simplistic an approach, given the scale of the Proposed Development. LCAs have different level of sensitivities, and the magnitudes of impact are likely to be different across each of the LCAs which will be affected.

2.54 Para. 8.9.10 onwards describes effects on the Cotswolds National Landscape as negligible to minor adverse (not significant) during construction.

2.55 Paras. 8.9.113-8.9.117 consider effects on Special Qualities of the National Landscape: *‘Where there is a small part of the Cotswolds AONB, to the northwest of Bladon, in proximity to the Project, the indirect perceptual impact is predicted to be of local spatial extent, with potential intervisibility to a very small part of the overall Project area. It is predicted that the impact will affect the receptor indirectly. The magnitude of impact on the AONB’s qualifying special qualities (tranquillity, and remoteness and wildness, space and freedom, expansive views/seascapes) is considered to be negligible at most during the operation phase.’*

2.56 It would be helpful if reference was made to a ZTV map shown in combination with the National Landscape, and to a photomontage from this area, as the text itself is of limited help in terms of understanding the nature of the change as experienced from here. Reference to Figure 8.10 below suggests there is potential visibility of the project from Combe (Wychwood Way walking trail in the National Landscape) for example, which does not seem to be noted. Viewpoint 20 is near the National Landscape, to the west of the railway, from where there appears to be a clear view to the solar panels on the hills to the south east (*Figure 8.301 below*), the closest areas being some 733m away. The LVIA (paras 8.9.186-8.9.187) reports this as a ‘Minor’ adverse visual effect in winter during construction, and ‘Negligible’ by year 15. This judgement does not seem reasonable, and it is not possible to understand why the effect would reduce at year 15, given the view of the solar panels across the hillside would not be further obscured in any way. Given this visual effect will be clearly apparent (and appears to have been understated), and the indication of visibility on the ZTV from within the National Landscape, it is unclear why a representative viewpoint in this area of the designated area was not explored, so that the effects on the National Landscape could be fully understood, explained and illustrated. Whilst the photomontage makes the solar farm appear like a ploughed field in this view, on a clear day, or with a high resolution photograph, the change would be both extensive and very obvious.

Extract from single frame Illustrative Winter Year 1: Viewpoint 20 (Figure 8.301)



Figure 8.5 – Extract showing the National Landscape in pink hatch

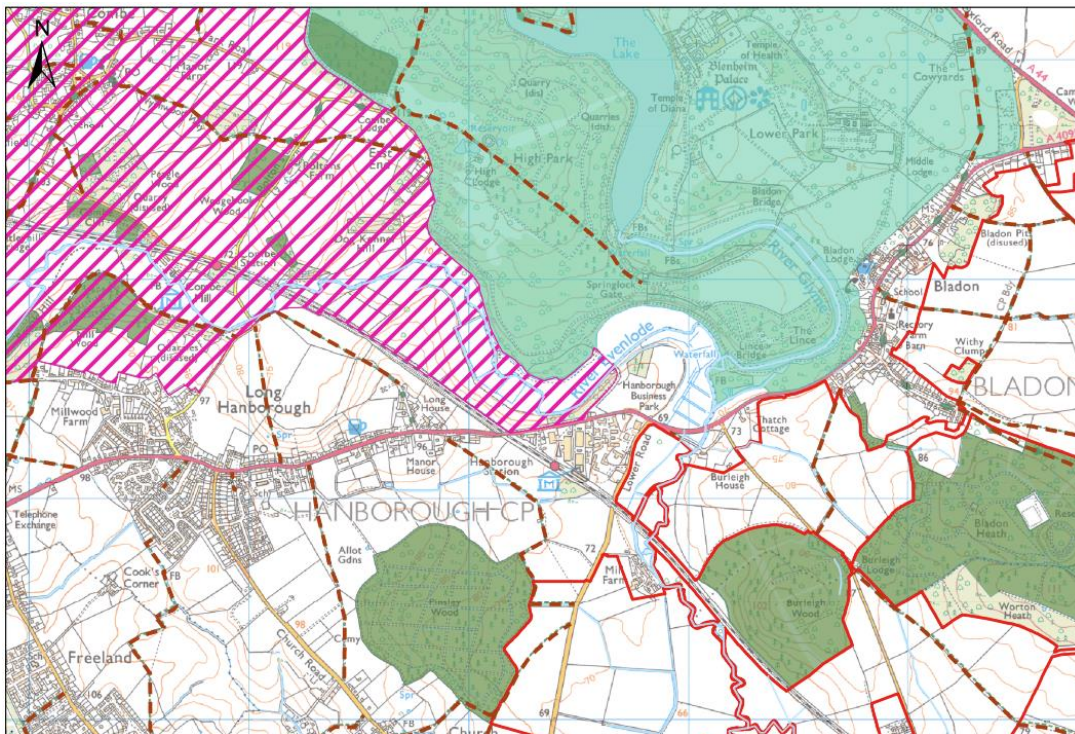
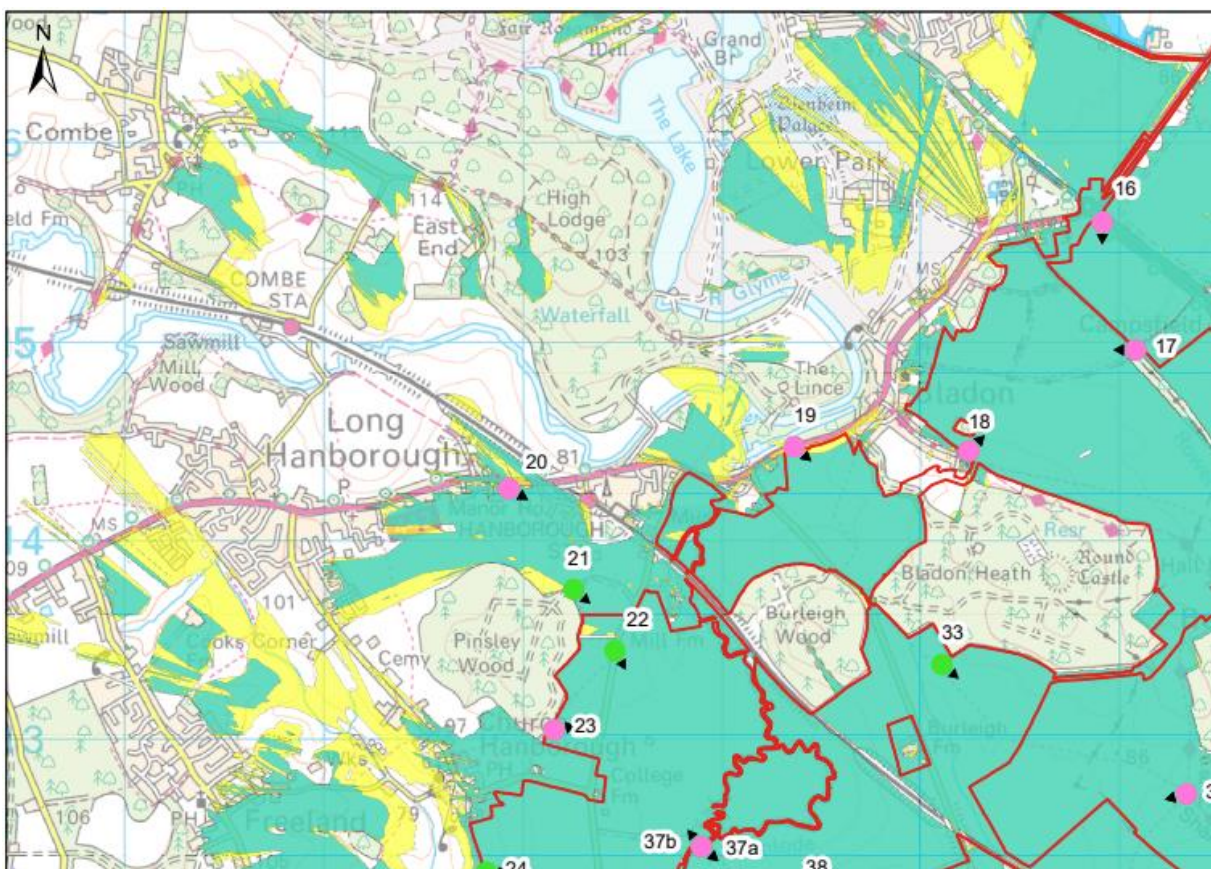


Figure 8.10 – Extract showing the ZTV for approximately the same area



Visual effects

2.57 Within the visual assessment for public rights of way during the operational phase, there are several inconsistencies, with examples as follows:

- Para. 8.9.120 states that there will be a 'significant' effect, but it is assumed that this is a typo, as a 'minor adverse residual significance of effect' is reported.
- Para. 8.9.121 states that there will be a 'major adverse significance of effect' but says that it is not significant which does not conform to the methodology.
- Para. 8.9.125 relates to the assessment for public rights of way associated with the 'central site' during the operational phase; however, it refers to construction which appears to be an error. It also states that "*Moderate' adverse effects could be considered significant*", yet the methodology says that Moderate or below is not significant, which is unclear. It then says in para. 8.9.126 that at year 15 the Moderate effect is not significant which is inconsistent with the preceding paragraph. It would be clearer if Moderate effects were either categorised as significant or not significant, but this text seems to suggest they could go either way.
- Para. 8.9.127 states a 'Major adverse significance of effect' but says that it is not significant which does not conform to the methodology. Again, this is unclear.

2.58 The visual assessment for the representative viewpoints is set out in paras 8.9.142 – 8.9.256 of ES Volume 1 Chapter 8. Each assessment appears to focus on the scale of effect, and it is not clear how geographical extent, duration and reversibility have influenced the judgements of magnitude. Overall, it appears that effects have been downplayed, with examples as follows:

- From some of the viewpoints located on the edge of the site, where panels will be very close to the receptor, the magnitude is judged to be 'Low' e.g. **Viewpoints 4, 48**, but it is considered that PV panels will be prominent features within these views given their proximity.
- In some instances, the magnitude is judged to be 'Negligible' at Year 15 yet the planting (which forms part of the Proposed Development) results in a clear change to the baseline view, and so is not 'barely distinguishable' e.g. **Viewpoints 8, 19**. For **Viewpoint 8** there are also clear views of panels, fencing and CCTV at Year 15.
- **Viewpoint 5b** is judged to experience a 'Medium' magnitude of change at Year 1. However, it is considered that the Proposed Development would be 'dominant' and result in a 'complete change in character and composition of baseline', affecting the open nature of the view, and so the receptor would experience a change that reflects the definition of 'High'. At Year 15 the LVIA states that the magnitude will remain as 'Medium' but the overall effect will reduce to 'Minor to Moderate' which does not conform with the matrix provided in **Table 8.12**. The latter considers that a 'High' sensitivity and 'Medium' magnitude to give rise to a 'Moderate to Major' effect. It is considered that significant effects are likely to occur at Year 15. The same issue also applies to **Viewpoint 5c**.
- Overall, there are no significant visual effects recorded at Year 15. This seems very unlikely for a development of this size, where one would expect to see significant effects. There are viewpoints where proposed planting will not screen panels, resulting in little/ no change in the view between year 1 and year 15, yet the overall effect is reduced e.g. **VP 13, 17, 27, 29, 48**.
- For **Viewpoint 13**, the LVIA states that at Year 15 the magnitude will remain as 'Medium' but the overall effect will reduce to 'Minor to Moderate' which does not conform with the matrix provided in **Table 8.12**. This considers that a 'High' sensitivity and 'Medium' magnitude combine to lead to a 'Moderate to Major' effect. It is considered that significant effects are likely to remain at Year 15.
- For **Viewpoint 17**, the LVIA states that at Year 15 the magnitude will reduce to 'Low' resulting in a 'Minor' effect. However, the planting in the photomontage does not seem to alter the views of panels

and fencing and so there is little change in view between Years 1 and 15. It is considered that significant effects are likely to remain at Year 15.

- For **Viewpoint 20**, the LVIA states that the magnitude will be 'Negligible' at Years 1 and 15. However, the panels are visible in the photomontage, appearing within steeply sloping fields, forming part of the backdrop to the view and so will not be 'barely distinguishable'.
- For **Viewpoint 32**, the overall effect jumps from 'Moderate to Major' at Year 1 to 'Minor to Moderate' at Year 15 despite the magnitude of change remaining at 'Medium'. The LVIA states *"the overall visibility of the Project from this location would be slightly diminished as a result of the designed in landscape proposals"* – however the change in effect does not reflect this. It does not conform with the matrix provided in **Table 8.12** which considers that a 'High' sensitivity and 'Medium' magnitude combine to result in a 'Moderate to Major' effect. It is considered that significant effects are likely to remain at Year 15. The LVIA also states *'Appropriately managed, to a suitable height, this hedgerow would screen views to parts of the Project Site in proximity to the PRow. Creating a more pleasant route through it and maintaining views to the wider landscape'*. The photomontage shows tall hedgerows that would completely enclose users of the PRow and therefore not maintain views to the wider landscape. This is an effect that should be recognised, both here and elsewhere where other PRows are similarly affected.
- The change to the sequence of views from each PRow should be considered, noting that several effects in sequence (including those that may individually be considered not significant), may come together to result in a significant effect along the length of a route, when considered more holistically.

Cumulative effects

2.59 Section 8.10 of ES Volume 1 Chapter 8 outlines the cumulative effects of the Proposed Development alongside 13 other schemes, mostly comprising proposed residential development, as well a proposed employment site and two other proposed solar PV developments. The selection of schemes considered in the cumulative assessment seems appropriate and considers those with planning consent and those with a valid planning application (Tier 1). One of the proposed solar schemes considered is at scoping stage (Tier 2) and is included due to being located adjacent to the site, which seems appropriate.

2.60 The location of the schemes considered is not clearly presented as they have not been indicated on a mapped figure, which would be helpful. Para. 7.25 of GLVIA 3 states that *'Once the range of developments to be considered and the extent of the study area have been agreed and the landscape baseline established, a map and inventory of all the relevant projects to be considered should be prepared'*.

2.61 The cumulative assessment only seems to consider cumulative interactions between the Proposed Development and each cumulative project on its own, rather than all the cumulative projects at the same time. This approach could downplay the extent of cumulative effects, as it does not consider the full scenario, whereby multiple projects may co-exist in the landscape.

Mitigation and Design

Approach to landscape mitigation

2.62 Information relating to landscape and visual mitigation is set out within the Outline Landscape and Ecology Management Plan (oLEMP) in Appendix 7.6.3 of the ES, and is illustrated on the Illustrative Masterplan in ES Volume 2, and on the Landscape, Ecology and Amenities Plan (EN010147/APP/7.3.3). N.B It is noted that the Illustrative Masterplan is vague in terms of providing information relating to the type of planting proposed, whereas further detail is illustrated on the Landscape, Ecology and Amenities Plan.

2.63 Within the oLEMP, the Site is divided into five broad geographic 'zones'. It describes the current landscape typologies and features of each zone, together with the proposed landscape and ecology features

and objectives. This approach is welcomed as it means that specific objectives can be related to landscape character. However, there is no clear understanding as to how the LVIA and understanding of baseline landscape character has informed the proposed mitigation measures, and the overall iterative design process.

2.64 Given the proposed mitigation would be fundamental in assisting with the reduction of levels of effects on landscape character and visual amenity in the longer term, it is important that the landscape and habitat proposals are firm commitments, and that their implementation is guaranteed, through requirements. These will then need to be implemented through contractual obligations, and monitored to check that they meet the requirements. Ongoing landscape management will also be fundamental to the success of this mitigation, and would need to extend to the 40-year lifespan of the project.

2.65 A key question is whether some of the proposed mitigation measures are appropriate. In some cases, new hedgerows have been proposed to compensate for removal elsewhere or to screen the Proposed Development but in doing so will completely change the nature of the view. For example, at Viewpoint 32 hedgerows are proposed either side of a PRow which cuts across a field (therefore changing the field pattern) and as a result will change the experience afforded to users, as they will be walking within a narrow corridor enclosed by tall hedgerows. This will lead to a complete change to the openness of the view, whilst features that would otherwise still be seen beyond the PV panels (e.g. the woodland at Bladon Heath which provides a backdrop to the view) will be obscured. Such effects should be recognised in the LVIA. It may be that keeping hedgerows lower, so that they have less of an effect in terms of blocking views, will be more appropriate in some places.

Extract from single frame Illustrative Summer Year 15: Viewpoint 32 (Figure 8.327)



Siting of solar PV panels within the Proposed Development

2.66 The proposed layout of the solar PV panels is shown on the Illustrative Masterplan in ES Volume 2. Due to the scale of the development, it is considered improvements could be made by pulling-back the footprint of the Proposed Development, especially from communities and other sensitive receptors. It is not clear how the LVIA has informed the layout and the overall iterative design process. It is understood that there have been very limited changes to the proposed Masterplan since the PEIR. Given the fact that the levels of effect are considered to have been understated throughout the LVIA, it may be that changes to the design were not considered necessary. Changes to the layout post-PEIR have mostly comprised the removal of PV panels where there are archaeological constraints. However, this has resulted in proposed areas of PV panels that remain being disjointed. An opportunity to create a more compact and logical layout seems to have been missed, and should be reconsidered.

2.67 The following measures are examples of how the layout could be improved. They mostly correspond with previous comments and recommendations provided by Avril Williams (Senior Landscape Officer - South Oxfordshire and Vale of White Horse Councils). This is not a comprehensive list, but provides examples of how the design of the project should have been developed to reduce landscape and visual effects, as part of an iterative process. This process should be detailed within the Design and Access Statement, so it is clear where potential impacts have been identified, what has been done to avoid or reduce them, and what the residual effects will be. Field work will be undertaken to inform further suggestions.

- Remove the areas of PV array to the south and west of the B4027 (illustrated on Figures 2.1B and 2.1C – Northern Site Area). Removal of these areas would reduce effects upon the properties at Hordley Farm and Weaveley Farm.
- Remove the isolated area of PV array on top of the localised hill that forms part of the valley side to the River Glyme, which has scenic qualities and an increased sensitivity due to its elevation (illustrated on Figure 2.1C – Northern Site Area).
- Remove areas of PV array directly south of Gove Road (A4095) and north of the PRoW that cuts through the area (illustrated on Figure 2.2A – Central Site Area), to reduce effects upon users of the PRoW (which would otherwise be surrounded by PV panels).
- Remove isolated areas of PV array between Woodstock Road and Langford Lane (and south of London Oxford Airport), illustrated on Figure 2.2A – Central Site Area. Removal of this area would reduce effects upon the properties along Evenloade Crescent and by keeping the development to the west of Woodstock Road will make the layout more compact.
- Remove areas of PV array between Worton Heath and PRoW (illustrated on Figure 2.2C – Central Site Area), to reduce effects upon users of the PRoW (which would otherwise be surrounded by PV panels).
- Remove areas of PV array between Rowel Brook and the western edge of Begbroke (illustrated on Figure 2.2A – Central Site Area), to reduce effects upon users of the PRoW that cuts through the area (which would otherwise be surrounded by PV panels).
- Remove the disjointed small triangular PV array south of Burleigh Wood, which is located within a small-scale pastoral field (illustrated on Figure 2.2D – Central Site Area). The existing railway line to the east and the field boundary hedgerow to the south form a robust boundary.
- Remove the disjointed area of proposed PV array between Pinsley Wood and Lower Road (illustrated on Figure 2.2D – Central Site Area). The road forms a robust boundary and vegetation along it provides containment within views. Removing panels in this area would increase the offset with the woodland and will make the layout more compact, whilst reducing effects upon users of the PRoW that cuts through the area (which would otherwise be surrounded by PV panels).
- Remove the small, fragmented areas of PV array on the west-facing steep valley pastoral slopes of the River Evenloade (illustrated on Figure 2.2F – Central Site Area), which has scenic qualities and an increased sensitivity.

- Remove the small, fragmented areas of PV array to the west of Cumnor Road (illustrated on Figure 2.3 – Southern Site Area), particularly those to the north/north-west of Smith Hill Copse. Removing panels in this area would increase the offset with the woodland and will make the layout more compact, whilst reducing effects upon the users of the PRoW that cuts through the area (which would otherwise have PV panels on both sides of it).
- Remove disjointed area of PV array to the south of Church Hanborough (between tributary stream and PRoW), illustrated on Figures 2.2D and 2.2F – Central Site Area, to reduce effects upon users of the PRoW (which would otherwise be surrounded by PV panels).

2.68 The following mitigation could also be considered:

- Consider the proposed height and angle of the proposed panels. Reducing the angle could lower the overall height and reduce effects.
- Consider the height at which existing and proposed hedgerows are to be maintained including so that routine maintenance can be undertaken with ease of access; so that the proposed heights of hedgerows do not block attractive or important views, or adversely change the experience of users of PRoW.
- Consider the character and appearance of mitigation planting, in both winter and summer, and as a source of impacts in its own right. The nature of hedgerow management proposed should use traditional techniques, such as laying, given the importance of this as a determinant of character. Further precision is required regarding proposed hedgerow heights, which may vary from area to area, as the text refers to 2-3m.
- Where appropriate, consider further areas of woodland planting, such as copses, to help break up views.
- Consider the offset from PRoW so that they do not read as corridors running through the proposed development, but as important elements of Green Infrastructure, running through a series of linked green open spaces. The proposed landscape masterplan should reflect the Green Infrastructure strategy of the councils, as well as the aspirations and guidance set out in relevant LCAs, and should take opportunities to implement positive aspects of relevant local strategies and guidance. The way in which the aspirations have evolved and are to be met should be fully described.

■

2.69 The suggestions above are examples. The narrative explaining the approach to the design of the project should reflect the changes that have been made to reduce landscape and visual effects. In general terms, it is apparent that further modifications to the scheme could be made to reduce landscape and visual effects.

Conclusions

2.70 Overall, it appears that the landscape and visual effects reported in the LVIA have been underplayed and some methodological issues are also highlighted.

2.71 The lack of the above elements makes difficult to accurately and fully understand the impact and effects upon the landscape and on visual amenity.

2.72 The Applicant is therefore requested to:

- Revisit the methodology applied to the assessment to ensure and clarify that:
 - the duration of the project has been correctly considered (i.e. the long-term nature of the operation phase should be considered as part of the magnitude of change).

- the reversibility of the project has been correctly considered (as aspects of the development such as earthworks, and the mitigation planting will not be reversible). Confirmation is also required as to what will happen to the substation/s and access tracks beyond the operational phase.
 - detailed information regarding the production of the ZTVs is provided (including how the heights of existing buildings and vegetation have been derived), and to provide clarity as to if a worst case 'bare earth' ZTV has been included or not.
 - the geographical extent, duration and reversibility has been correctly considered for the visual assessment for the representative viewpoints.
 - the assessment of cumulative effects considers the full scenario, whereby multiple projects may co-exist in the landscape.
- Revisit the threshold of significance which currently considers effects of Moderate or less to not be significant (given the definition provided for a medium magnitude of effect sounds like a significant effect).
 - Provide an updated assessment as currently the significance of effects appear to have been downplayed.
 - Provide an assessment that considers the effects of lighting, including temporary lighting during construction, or stronger justification as to why this has been scoped out.
 - Provide confirmation that the exclusion of the Residential Visual Amenity Assessment (RVAA) was agreed with relevant consultation bodies, and clarity regarding the justification for scoping it, out as the current reasoning appears flawed. The proposed 25m offset for properties, settlements and communities requires consideration on a case by case basis, so that aspects such as topography and vegetation are fully considered. A standard 'buffer' approach is unlikely to be sufficient in terms of mitigation of significant effects at all locations.
 - Revisit the approach to assessing and describing the landscape and visual effects at year 15 ensuring that the worst-case scenario (i.e. winter) has been assessed.
 - Provide clarification as to how the judgements (and their definitions) of susceptibility and value correspond to sensitivity by revisiting Tables 8.9 and 8.10.
 - Revisit and expand the criteria used for landscape susceptibility to clearly set out the characteristics of the landscape which are being considered to determine its susceptibility.
 - Revisit and expand the criteria used for visual susceptibility to ensure that consideration has been given to local communities, and that they have been appropriately assessed. The LVIA does not state why local communities have been scoped out, and given the scale of the Proposed Development and the number of settlements surrounding the Site, the apparent exclusion of local communities is considered to be an omission.
 - Revisit the judgements regarding landscape and visual sensitivity (Tables 8.15 and 8.17 respectively) to provide justification as to how each sensitivity rating has been reached, in terms of the contribution of judgements on susceptibility and value.
 - Provide a clear summary of the landscape character and landscape features of the Site, and show how the descriptions from the various published landscape character assessments, GI Strategy etc have informed the proposed landscape and visual related mitigation / design. Set out clearly the lengths and areas of vegetation to be lost (including numbers and quality of trees), as well as the lengths of new hedgerows /numbers of new trees etc. Consider the planting of copses of woodland to help reduce effects, where appropriate to landscape character.
 - Provide further information relating to the sensitivity of the Site, which appears to be missing.

- Revisit the judgement of sensitivity relating to the Cotswolds National Landscape (Table 8.16) and consider the national landscape as having a 'very high' sensitivity, or provide justification as to why it has been judged to have the same level of sensitivity (high) as users of public rights of way and access land.
- Provide an assessment that considers the visual effects on visitors to Blenheim Palace Park and Gardens, or justification as to why this has been scoped out.
- Revisit the assessment of landscape effects during construction and operation on the Project Site and the host LCA/LCTs, as effects have been understated as it is considered that locally significant effects on landscape character are inevitable given the extensive change in land use across a site of this scale.
- Revisit the approach taken to assessing and describing the effects on landscape character – drilling down to the character area level, rather than expressing impacts at the level of the 'LCA as a whole' and providing greater spatial specificity as to where impacts will be concentrated, how this will vary spatially and how this could/should shape design.
 - It is anticipated that this information will provide important context to inform judgements on where design changes may be required.
- Revisit the assessment of landscape and visual effects on the Cotswolds National Landscape as effects appear to have been understated, and provide a representative viewpoint from it (e.g. from Wychwood Way walking trail at Combe), so that the effects on the National Landscape can be fully understood.
- Revisit the assessment of visual effects on PRowWs as there are several inconsistencies with the methodology as noted in this review. Ensure sequential effects on users are fully considered, noting the nature and frequency of views (in summer and winter conditions).
- Revisit viewpoint assessments where the levels of effect have been reduced between years 1 and 15, but where the proposed planting will not provide any screening.
- Provide or refer to a mapped figure illustrating the locations of the schemes considered in the cumulative assessment.
- Provide the Examining Authority and relevant parties with further information on how landscape and visual matters have informed landscape mitigation proposals.
- Re-consider the appropriateness of the proposed mitigation measures where new planting will completely change the nature and openness of the view, and the experience afforded to users of PRowWs. In particular, consider the nature of the planting, its proposed height and the way it is to be managed (traditional techniques such as laying should be employed).

Chapter 3

Review of Applicant's visualisations

LVIA Visualisations

3.1 GLVIA3 states that *"the predicted changes must be described in the text but should also be illustrated by means of visualisations from representative viewpoints"* (para. 8.16) and *"where the scheme is not fully developed visualisations must be based on clearly stated assumptions"* (para. 8.22).

3.2 Representative Viewpoint Photographs (for all 55 viewpoints) are contained in ES Volume 2, taken in both winter (Figures 8.12 to 8.127) and summer (Figures 8.128 to 243). Photomontages for 31 of the viewpoints are presented in Figures 2.48 to 8.371, showing the Proposed Development at Year 1 (in winter) and Year 15 (in summer). As discussed previously, the photomontages at year 15 do not represent the worst-case scenario (i.e. winter).

3.3 The information accompanying each visualisation does not include adequate detail. The Landscape Institute's Technical Guidance Note 06/19: Visual Representation of Development Proposals (September 2019) recommends the following information is included:

- View direction should be presented as a bearing in degrees, for better understanding of direction.
- The time of day when the photo was taken should be included.
- An indication of the photograph's projection should be included (cylindrical vs planar).
- Camera height and AOD should be displayed as separate figures, with a clear indication of the height above ground that the photograph was taken.
- The enlargement factor of the image should be included.

3.4 Closer, individual viewpoint maps alongside each viewpoint would prove beneficial for increased understanding of the immediate surroundings, at a greater scale than the overall map provided.

3.5 For all visualisations, the recommended camera height of 1.5m is proposed in NatureScot Ver 2.2 (Feb 2017) guidance (Annex F, page 52) and is referenced within the Landscape Institute's Technical Guidance Note 06/19, noting that this is to be adhered to where possible. Exceptions to this should be clearly stated with good reason for doing so. Para. 8.6.43 of the LVIA states that photography was taken at a height of approximately 1.7m with no clear reasoning for the increase in height from the recommended 1.5m. This may serve to diminish the visual impact of the PV panning and fences by making them appear proportionally smaller, or conversely may allow for open views over lower field boundaries.

3.6 A number of viewpoints only demonstrate a cropped view in a single direction, when impact would be expanded across 180 or 270 degree fields of view. By only showing 90 degrees, it may understate or misrepresent the impact of the Proposed Development, and provide limited guidance to inform the assessment of effects. Examples include, but are not limited to Viewpoints 32, 41 and 48.

3.7 The single frame visualisations selected for the viewpoints appear in some instances to have been selected to demonstrate the point of least visual impact, rather than the overall view. For example, the single frame for Viewpoint 25 at Year 15 (Figure 8.311) is orientated towards mitigation planting, and not the Proposed Development further to the right that will be clearly visible.

Extract from Illustrative Summer Year 15: Viewpoint 25 (Figure 8.310)



Extract from single frame Illustrative Summer Year 15: Viewpoint 25 (Figure 8.311)



3.8 It is not clear what the anticipated height of proposed planting will be by year 15. The final paragraph of the LVIA (8.14.4) states that “However, it is reasonable to assume that these effects would start to diminish by year 5. As it is anticipated that new hedgerow planting, planted at a height of 60-90 cm, would achieve a growth rate of approximately 30 cm per year. Therefore, by year 5 of the Project, it is anticipated that newly established hedgerows, if suitably managed, would have achieved a height of approximately 2 to 3 metres and therefore screen views to much of the Project”. The proposed planting seems to have been overstated, appearing much larger than the proposed 2.3 m high PV panels as shown in the extracts below. The lower image suggests the fencing will be inside the hedgerows. It will be helpful to confirm if this will be the case, as in practice it may not be possible to plant on the road verge/ditch, which is presumably outside the landowner boundary, and where sightlines would be obscured?

Extract from Illustrative Winter Year 1: Viewpoint 41 (Figure 8.344)



Extract from Illustrative Summer Year 15: Viewpoint 41 (Figure 8.346)



Extract from Illustrative Winter Year 1: Viewpoint 54 (Figure 8.368)



Extract from Illustrative Summer Year 15: Viewpoint 54 (Figure 8.370)



3.9 It is also considered that the visualisations are not accurate, with the issues below being of note.

3.10 In some cases, the modelling of PV panels does not appear to be accurate to the PV panel layout. The example below shows an unlikely form of panel and may call into question the accuracy of the model.

Extract from Illustrative Summer Year 15: Viewpoint 25 (Figure 8.310) with LUC markup



3.11 For Viewpoint 5b, the terrain appears to have been misaligned. It is unlikely that 2.3m high PV Panels built up to the perimeter of the field would not at least partially obscure the background hedgerow.

Extract from Illustrative Winter Year 1: Viewpoint 5b (Figure 8.256)



Extract from Existing Winter: Viewpoint 5b (Figure 8.256) with LUC markup



3.12 For Viewpoint 13, the terrain does not appear to have been followed by the model. The baseline photograph does not appear to match the surveyed terrain model. When the rendered solar farm is overlaid on the photo, it appears to ‘curve off’ downwards. The panels would not sit on the path/boundary of the site, and are likely to obscure much more of the hedgerow and back of the field. To the right of the visualisation, elements appear incorrectly masked and obstructing on hedgerows which they would be behind.

Extract from Illustrative Winter Year 1: Viewpoint 13 (Figure 8.277)



Extract from Illustrative Winter Year 1: Viewpoint 13 (Figure 8.277) with LUC mark up



3.13 For Viewpoint 18, the masking out of the PV panels against the treeline appears inaccurate. Whilst in some instances this may present a worst case image, it suggests incompleteness in the visualisation process, may disjoint the viewers perspective, and make it difficult to understand depth.

Extract from Existing Winter: Viewpoint 18 (Figure 8.292)



Extract from Illustrative Winter Year 1: Viewpoint 18 (Figure 8.292)



3.14 For Viewpoint 23, incomplete masking leads to an overly complex visualisation which is difficult to read and understand. Trees, telephone masts and roads positioned within this cluster of PV panels are disregarded during montaging resulting in the repeating effect rows of PV panels (and the gaps between them), and the ground which the PV panels are sat on not being clear. The complexity of the image results in a photomontage that does not appear to accurately represent the proposed change, and does not give a clear understanding of where PV Panels sit within the landscape.

Extract from single frame Illustrative Winter Year 1: Viewpoint 23 (Figure 8.305)



3.15 For Viewpoint 32, the visualisation does not appear to take account of boundary hedges and access points, again giving a lack of clarity on any changes that may occur to the hedge line and visibility. In the instance below, some PV panels are sat behind the hedgerow, not in front of it, suggesting all development will sit within a single field, or that the hedgerow will be removed.

Extract from Existing Winter: Viewpoint 32 (Figure 8.324)



Extract from Illustrative Winter Year 1: Viewpoint 32 (Figure 8.324)



3.16 For Viewpoint 34, visibility is limited and extremely hazy in the direction of the proposal. The colouration of the PV panels and its similarity to the neighbouring vegetation reduces its impact and may falsely demonstrate the true contrast seen on a clearer day. The quality of the photography is poor.

Extract from Existing Summer: Viewpoint 34 (Figure 8.330)



Extract from Illustrative Summer Year 15: Viewpoint 34 (Figure 8.330)



Conclusions

3.17 Overall, it appears that there are some issues with how the visualisations have been prepared and presented.

3.18 The Applicant is therefore requested to:

- Revisit the methodology applied to ensure all information as advocated by the Landscape Institute's Technical Guidance Note 06/19: Visual Representation of Development Proposals is provided, and provide clear justification as to why photography was taken at a height of approximately 1.7m instead of the recommended 1.5m.
- Ensure that the full field of view occupied by the Proposed Development is shown in visualisations where this exceeds 90 degrees.
- Re-consider the single frame visualisations used where they have been selected to demonstrate the point of least visual impact.
- Ensure that the height of proposed planting has been accurately represented in visualisations, and that alongside proposed fencing, has been modelled correctly.
- Re-consider the accuracy of the visualisations noted as concern within this review.

Chapter 4

Historic Environment Review

Scope of Assessment

4.1 LUC was commissioned to review the adequacy and accuracy of the EIA submission regarding the impact of three solar farm sites to the historic environment at Botley West (the Site). The Historic Environment ES Chapter was prepared by RPS and supported by several assessments contained in appendices.

4.2 The appendices reviewed alongside the ES Historic Environment Chapter (ES Chapter) are the following:

- Historic Environment Desk-based Assessment;
- Blenheim Palace World Heritage Site – Heritage Impact Assessment; and
- Settings Assessment.

Assessment Methodology

4.3 This section identifies whether the methodology, scope and process of undertaking the ES Historic Environment Chapter fulfils the requirements of the EIA Regulations and provides sufficient information for the decision maker.

Scoping responses

4.4 Table 7.5 of the ES summarises the consultation responses relevant to the chapter.

4.5 The Lead archaeologist at Oxfordshire County Council recommended that non-designated heritage assets of equivalent significance to scheduled monuments should be considered subject to the policies for designated heritage assets – in line with paragraph 5.9.6 of the Overarching National Policy Statement for Energy (EN-1).³ However, paragraph 7.9.66 of the ES states that only historic buildings which have been identified within a Conservation Area Appraisal or Neighbourhood Plan as being of local interest underwent detailed assessment of impacts and effects, and within those areas only one building assessed was considered to have the potential for impacts due to setting change as a result of the project. No explanation is provided of whether non-designated heritage assets outside conservation areas have been identified or considered. **This is considered to represent an important information gap.** While significant effects may be less likely, the Applicant is required – in line with NPS paragraph 5.9.10 – to ensure that they have provided a full description of the significance of heritage assets affected by the proposed development. At present, it is not possible to understand the extent to which a process of survey, identification and

³ As the Proposed Development was accepted for Examination by PINS on 13 December 2024, NPSs EN1 to EN5, designated on 17 January 2024, are held to apply – in line with guidance provided on the gov.uk website: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-national-policy-statements>

assessment of the local historic environment, and the presence of non-designated heritage assets that could experience effects, has been conducted.

4.6 Oxfordshire County Council commented that the impacts on the setting of Conservation Areas have not been considered. The response to this states that effects and changes have been considered in ES Volume 3 Appendix 7.5: Setting Assessment. However, the assessments within this appendix do not appear to have fully assessed the contribution of setting to the significance of a conservation area. For example, the significance assessment of Wootton Conservation Area states that the farmland around the area ‘makes some contribution to the heritage significance of the Conservation Area’ (1.9.103), but does not explain how this is expressed (e.g. with reference to heritage values, significance or special interest) or how this contribution may be affected by the proposed development. It then concludes solar PV panels would extend up to the boundary between the site and the conservation area and that ‘new hedgerows would be planted around the perimeter of the development’ (1.9.105). This implies that the proposed development would potentially impact on the setting of the conservation area, but does not assess how or to what degree, or explain how new hedgerows would reduce or offset this effect.

Guidance

4.7 Relevant legislation, planning policies and guidance have been referred to in the Historic Environment chapter of the Environmental Statement, including the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

4.8 The methodology used to prepare the chapter is presented in Section 7.1 and 7.2 ES Volume 1 Chapter 7 and reference to the relevant NPPF is summarised in table 7.2. This is the correct guidance to have followed for the assessment. However, the NPPF has since been updated and the paragraph numbers referred to are therefore no longer correct. The table only identifies one requirement relevant to this chapter, that of the requirement of applicants to *provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting towards that significance* (RPS ES Volume 1 Chapter 7, table 7.2). Additional parts of the NPS are also of relevance and should be addressed, especially with regards to considering potential impacts on designated and non-designated heritage assets.

4.9 Table 7.3 of the ES summarises the local planning policy assessed as relevant to the chapter from the West Oxfordshire Local Plan 2031, the Adopted Vale of White Horse Local Plan 2031 Part 1 and the Adopted Cherwell Local Plan 2011-2031. The table states that the key provisions identified have been considered in the ES through the design of the project. However, as will be discussed below, there are questions regarding the efficacy of the methodology regarding significance assessment of designated and non-designated heritage assets.

Methodology

4.10 The methodology used to prepare the Historic Environment chapter of the ES is presented in Section 7.4 of ES Volume 1 Chapter 7. Section 7.5 of the document details the assessment criteria and assignment of significance.

4.11 It is noted that, as stated at paragraph 7.5.1 of the ES, the Design Manual for Roads and Bridges (‘DMRB’) methodology has been applied. While the 2020 version of DMRB represents a substantial improvement over its predecessor, it is still not intended for use beyond the design and assessment of roads and bridges. Other, more current and approved approaches are available that are better aligned with the requirements of the infrastructure planning system for renewables.

4.12 In Table 7.6 of the ES, effects considered within this assessment are grouped per activity: the “Effects arising from changes to the character of the historic landscape” are considered, whereas effects on the non-designated assets are not mentioned. Several consultees including Historic England suggest considering the effects on non-designated historic assets that may be of national importance. This aspect is not reflected in

the table. This issue is mirrored in the study area section, where setting is considered only for designated heritage assets. A 1km study area is used for non-designated assets, with no specified purpose given the absence of consideration of effects to these assets (for example, was this information used to prepare the archaeological potential or baseline information?).

4.13 In Table 7.8 Sensitivity/value criteria conservation areas, grade II listed buildings and registered park and gardens are considered of 'medium importance'. It is acknowledged that the Overarching NPS does not clearly state the level of importance of heritage assets and is open to the attribution to professional judgment.⁴ However, this is considered to represent a systematic under-estimation of the importance of Grade II listed buildings. The Planning (Listed Buildings and Conservation Areas) Act 1990, as amended, draws no distinction in legal protection for the fabric or settings of listed buildings. Indeed, grading is purely advisory and, like NPPF, NPS only invokes the grading of listed buildings from paragraph 5.9.28 onwards – with regard to weighing, rather than assessing, effects. While there is perhaps more room for interpretation where conservation areas are concerned they are, nevertheless, statutory designations and require careful consideration.

4.14 Furthermore, although it is acknowledged that the Levelling-up and Regeneration Act 2023 is not yet fully commenced, the Act elevates the status of conservation areas, scheduled monuments and registered parks and gardens by embedding the preservation and enhancement of their settings into statutory planning considerations, reaffirming their national importance and placing these designated assets on an equal footing with listed buildings.⁵

4.15 Similarly, Table 7.8 in the ES chapter ('Sensitivity/value criteria') explicitly conflates sensitivity and asset value. There is not necessarily a direct relationship between the significance / importance of an asset and its sensitivity to setting change. While the approach applied makes it unlikely that there will be accidental under-estimation of sensitivity for assets of high importance, there is clear potential for the contribution of setting to significance – and thereby sensitivity to change – of assets of low or medium value to be under-estimated.

4.16 Reassessment of the levels of importance has the potential to change the level of sensitivity/value assigned to 15 of the designated assets listed in table 7.15 of ES Volume 1 Chapter 7, and to generate potentially significant effects. For example:

Table 4.1 Impact of the Project on designated heritage assets - as stated in ES

Asset name	NHLE number	Asset type	Sensitivity/ value	Magnitude of impact	Significance of effect
Burleigh Farmhouse	1198551	Grade II listed building	Medium	Low adverse	Minor adverse
Wootton Conservation Area	N/A	Conservation Area	Medium	Low adverse	Minor adverse

⁴ Including the Historic Environment Guidance <https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment#:~:text=Scheduled%20monument%20%E2%80%93%20a%20monument%20which,desirable%20to%20preserve%20or%20enhance.> (accessed 02.05.2025)

⁵ <https://www.legislation.gov.uk/ukpga/2023/55> (accessed 02/05/2025).

Table 4.2 Table 4.2 Impact of the Project on designated heritage assets - reassigned

Asset name	NHLE number	Asset type	Sensitivity/ value	Magnitude of impact	Significance of effect
Burleigh Farmhouse	1198551	Grade II listed building	High	Low adverse	Minor or moderate adverse
Wootton Conservation Area	N/A	Conservation Area	High	Low adverse	Minor or moderate adverse

4.17 The same issue regarding attribution of importance applies for locally listed buildings considered by default of low sensitivity. Locally listed assets are buildings, structures, or sites that do not meet the criteria for statutory listing, nonetheless are recognised by local planning authorities as of particular heritage importance. For instance, the West Oxfordshire Local Plan 2031 states: “Non-designated heritage assets do not have statutory protection, but nonetheless represent a crucially important aspect of the District’s heritage, and play a defining role in the local character of an area. Those non-designated heritage assets of particular local importance, e.g. those that make a fundamental contribution, both individually and collectively, to the distinctive and special character and appearance of the area in which they are located (in terms of their siting, design and use of materials) are known as ‘locally listed buildings’”.⁶

4.18 Therefore, locally listed buildings’ level of importance/sensitivity can be reduced through assessment but should not be considered low by default.

Study Area and Zone of Theoretical Visibility (ZTV)

4.19 It is acknowledged that the 2km study area was agreed with Historic England. From the ES Chapter, it is not clear the criteria for the buffer choice, nor the criteria for the ZTV production.

Baseline Conditions

4.20 The designated and non-designated heritage assets are presented in the baseline dedicated section. The designated assets are summarised here as a list; however, summary of their description, significance/importance, including setting, is not provided. The non-designated assets are summarised in terms of archaeological potential, and no significance summary is provided. As noted above, non-designated assets are not afforded appropriate consideration.

4.21 The importance of key receptors echoes the issues highlighted for the methodology, with grade II listed buildings, unless related to the WHS, considered of medium importance alongside conservation areas.

4.22 Broadly, an appropriate range of baseline sources appear to have been used, and an effective baseline has been assembled – but the extent to which this has then been carried forward to assessment is unclear, particularly for non-designated assets.

Assessment of Effects

4.23 In regarding the assessment of likely significant effects, the ES chapter does not provide a clear summary but largely refers to the appendices. As noted above, the approach applied to assessment has resulted in likely systemic underestimation of both the importance of assets currently ascribed 'medium' value and sensitivity. This has potentially resulted in similarly systemic under-estimation of effects.

4.24 The Applicant is therefore requested to revisit their methodological approach and provide updated assessment outcomes for the relevant assets (principally grade II listed buildings, conservation areas, and non-designated built heritage assets).

4.25 Similarly, while it is welcomed that the Applicant has provided baseline information on and assessment of effects to historic landscapes, this is largely divorced from consideration of the rest of the historic environment. This is particularly apparent with regard to the open agricultural landscapes that form the setting of the Blenheim Palace WHS and RPG. This agricultural landscape provides important context for the designed landscape, was part of the source of the wealth of successive Dukes that contributed to the development of the landscape park, and is indivisible from its significance – including through its contribution to the settings of these assets. The Applicant is therefore advised to revisit the consideration of historic landscape, and make greater use of the evidence available to better understand the contribution of historic landscapes to the significance (and Outstanding Universal Value) of Blenheim – and better articulate how the proposed development will change this. On the face of it, 'minor adverse' impacts to the historic landscape would not appear to do justice to the extent or totality of change within areas of historic character. It is therefore recommended that the approach is disaggregated and deals with significance and change at a character area level. This would provide decision-makers with greater specificity and certainty.

4.26 It is noted that effects assessed as 'minor' or less are not considered to be significant for the purposes of the EIA Regulations. This is in contrast to other chapters of the ES, but is acceptable and in line with custom and practice.

Secondary, Cumulative and Combined Impacts

4.27 Given the shortcomings with other aspects of the assessment methodology, drawing sensible conclusions on secondary and cumulative effects is currently challenging.

Mitigation and Management

4.28 Mitigation measures are provided without a clear explanation of assets' significance, magnitude of impact and effects deriving from the proposed development. Therefore, the effectiveness of the mitigation is not fully understandable.

4.29 As noted above, archaeological mitigation is dealt with separately by Oxfordshire County Council.

4.30 Landscape mitigation, where proposed adjacent to historic environment receptors – particularly conservation areas – appear to have the potential to generate adverse effects in their own right. This is neither acknowledged nor assessed in the chapter. Year 15 visualisations illustrate this for a number of viewpoints. Additional mitigation with regard to setting change – such as screening planting – is rarely effective in reducing levels of effect.

4.31 The Applicant should consider revisiting the 'blanket' approach to landscape mitigation and seek to apply more sensitive design approaches that both understand and seek to conserve the heritage values and significance of affected assets.

Non-Technical Summary

4.32 The ES Chapter does not provide on its own sufficient information to understand the significant impact deriving from the proposed development to the historic environment. The NTS reflects the same issues: it lists heritage assets and archaeological potential only, before moving on to the description of mitigation measures, without addressing the significance of the assets, the contribution of the Site to their significance, or the effects of the proposed development.

Appendices

4.33 The DBA describes the heritage assets and does not analyse significance/importance.

Blenheim Palace World Heritage Site – Heritage Impact Assessment

4.34 The WHS HIA states that *no part of the Project Site is located within the Blenheim Palace WHS. Consequently, any impact would most likely occur as a result of change within the setting of the WHS* (1.1.46).

4.35 Describing the design process through which the current proposal has been developed, Figure 1.3 illustrates the sensitivity mapping of the WHS surroundings to solar development. This indicates that most of the land within the project site lies within areas of Lower Sensitivity and no part of the site is within an area of High Sensitivity, demonstrating that areas of high sensitivity have been avoided.

4.36 However, it is not clear whether this map has been produced specifically to support this development, and no information is provided on the methodology or criteria for levels of sensitivity other than that the Cotswold National Landscape designation has been used to identify areas of High Sensitivity (paragraph 1.4.22). Unless it has been produced specifically through a process of mapping areas susceptible to change in the setting of the WHS which affect its attributes of OUV, its use in determining the sensitivity of OUV to solar development may be misapplied. The methodology and criteria behind Figure 1.3 should be provided in order to clarify this aspect of design development.

4.37 The identification of potential impacts, Table 1.1, broadly follows the Guidance and Toolkit for Impact Assessments in a World Heritage Context (UNESCO, ICCROM, ICOMOS, IUCN 2022), and appears to come to reasonable conclusions on which attributes would be susceptible to the type of changes proposed. It identifies only one of the Attributes of OUV for the WHS which has the potential for impact as a result of changes to its setting, namely:

- The park retains a complete, 18th century enclosing stone wall which protects its integrity, but views into and out of the site still provide key linkages between Blenheim and the traditional English countryside and villages surrounding it.

4.38 Within this attribute, one particular element is particularly related to setting, cited in paragraph 5.02 of Appendix 3 of the WHS Management Plan Review 2017, is considered susceptible to change of the type proposed:

- The character of the setting as traditional English countryside, dotted with picturesque villages mainly built using a uniform palette of materials.

4.39 Table 1.2, Impact Evaluation then goes on to evaluate the level of impact arising to that attribute from the various elements of the proposed development, during construction, operation and maintenance, and decommissioning. The accompanying narrative states that *“the term ‘traditional English countryside’ is taken here to be a reference to the prevailing landscape surrounding the Blenheim Palace WHS comprising medium and large fields used for arable or pastoral farming and separated by mature hedgerows, along with woodlands of various sizes”* (1.4.52). The section concludes that, *very little of the landscape within the Project Site still has the ‘pastoral feel’ described in the final sentence of paragraph 3.12 of Appendix 3 of the*

WHS Management Plan Review 2017 (1.4.56) and ultimately the impact on this single attribute has been assessed as minor negative (1.4.104).

4.40 There does not appear to be sufficient analysis or explanation of how this conclusion is reached. If 'traditional English countryside' is defined as 'medium and large fields used for arable or pastoral farming', then the current largely arable use within the Project Site appears to fall within the definition. This may be further qualified as meaning those with a 'pastoral feel' in the WHS Management Plan Review, but the assessment should make explicit how, and to what degree, the proposed development is deemed to change the character of the Project Site away from 'traditional English countryside', and therefore what its effect is on the Attribute.

4.41 The individual elements of change are each judged to result in a 'Minor negative' effect, but their combined effect should also be considered.

4.42 Although EIA is concerned with significant effects, in a WHS context any negative effect – i.e. harmful impact – to any level would be expected to be avoided. UNESCO guidance does not allow for any offsetting of adverse effects to OUV, on the basis that OUV is irreplaceable. Therefore, if conclusions on impact remain at 'Minor negative' following re-examination, this may indicate that further design iteration(s) are required to identify specific areas where these effects do and do not occur, and to use this information to adjust the development until residual effects to OUV can be eliminated.

Setting Assessment

4.43 The setting assessment lacks in describing the setting of the heritage assets and the contribution of the Site to it, giving too much weight to views.

4.44 An explanation of the rationale behind the level of impact ascribed is needed per asset scoped in. Three different heritage assets are taken as example.

4.45 For instance, Blenheim Palace, Grade I Registered Park and Garden (NHLE Ref. 1000434), is the result of a medieval enclosure within a rural open landscape. It has consequently been transformed into a palace and an outstandingly designed landscape, whose rural context represents both a relic of the hunting park era and a deliberate setting choice for the new palace. As such, the asset has also a strong connection with nearby woodlands, fields and villages of Woodstock and Baldon. Therefore, stating that "the setting of the Registered Park and Garden makes a limited contribution to its heritage significance, which is largely connected to the internal components of the designed landscape" is only partially correct. It undermines the importance of its rural context and reflects a lack of understanding of how the setting contributes to the significance of the heritage asset. The introduction of a large industrial element, such as the proposed development, into this rural landscape needs to be further evaluated and weighted.

4.46 In the case of the Column of Victory, Blenheim Park, Grade II listed building (NHLE 1368002), the views are important but should not be the only elements to be considered. For example, the landmark aspect of the asset should be analysed and understood and whether the proposed development could represent a distraction to the prominence and visual marker embodied by the heritage asset should be considered.

4.47 In the case of Baldon Conservation Area, the asset is described, but no contributions of the setting to its significance are analysed. Some embedded mitigation measures are described without first addressing which aspects of the significance the proposed development will affect, or whether the Site contributes to the heritage asset's setting. Intervisibility with important views is presented without clarifying what the intervisibility will mean in terms of setting change. Finally, the level of impact resulting from the proposed development is stated but not justified.

4.48 The same approach and reflections apply to several other heritage assets.

Conclusions

4.49 Overall, it appears that contribution of the setting to the heritage assets' significance and the Site's contribution to their setting have been underplayed. Some methodological issues are also highlighted, alongside the unsupported importance of views.

4.50 The lack of the above elements makes difficult to understand the impact and effects upon the historic environment.

4.51 The Applicant is therefore requested to:

- Revisit the approach taken to non-designated heritage assets to ensure that:
 - All locally listed buildings or assets otherwise identified have been reviewed and, where of local or greater importance and with the potential to experience effects, these have been scoped into the assessment.
 - All relevant built heritage assets and historic landscapes
- Revisit the methodology applied to the assessment to ensure that statutorily designated assets are afforded a 'high' degree of importance.
 - In turn, this should address the apparent systemic under-estimation of effects as a consequence of setting change on assets currently assigned 'medium value' (e.g. Grade II listed buildings and conservation areas)
 - Provide updated assessment outcomes for the relevant assets
- Revisit the approach to conservation areas in particular, where screening created by proposed landscape mitigation has been taken into account as a mitigant – which appears to be at odds with the character and significance of most of the affected assets of this nature.
- Revisit the approach taken to assessing and describing the effects on historic landscapes – drilling down to the character area level, rather than expressing impacts at the level of the historic landscape as a whole, and providing greater spatial specificity as to where impacts will be concentrated, how this will vary spatially and how this could/should shape design.
 - It is anticipated that this information will provide important context to inform judgements on where design changes may be required.
- With regard to the assessment of impacts on the OUV of the WHS, it is noted that adverse effects are noted. While not judged to be significant, the attention of the host authorities and the Applicant is drawn to the fact that Unesco guidance is clear that any adverse effect to OUV should be considered unacceptable.

It is suggested that, taking into account the measures requested above, there may be merit in the Applicant revisiting their WHS HIA to ensure that effects are properly understood – particularly in the context of change to the historic landscape forming the setting of the WHS and contributing to OUV.
- Provide the Examining Authority and relevant parties with further information on how heritage matters (particularly the setting of conservation areas) have informed landscape mitigation proposals – and provide an assessment of effects on heritage assets of the same.

Appendix 2: Cherwell District Council – Solar PV Strategy dated 16th April 2025



JOINTLY OWNED BY



Cherwell District Council – Solar PV Strategy

Version No: Final

Issue Date: 16th April 2025

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1 Executive Summary

Cherwell District Council (the Council) declared a Climate Emergency in 2019 setting a target to be a carbon net zero organisation by 2030. The Council have also pledged to support the district to reduce its emissions. It recognises that this involves decarbonising the electricity supply in the UK, largely by deploying significantly more renewable energy.

A study into wind energy in the district in 2019 concluded that whilst there was some potential it was unlikely that most of this would come to fruition. Recent changes in government policy on wind however, may mean that wind *could* have a role to play, although this will still have to be economically viable.

Solar PV is a cheap and reliable technology – deployed at scale and pace across the world. The technology is a simple and effective means of converting daylight into electricity and provides the opportunity to decarbonise the power supply and provide cheaper electricity through breaking the link between the price of electricity and the global price of gas.

To achieve the Government's target of Clean Power by 2030 the UK needs to deploy around **50GW** of solar panels, around half of which are currently either operational or at an advanced stage of development or construction, meaning we need more new solar in the next five years than we have delivered in the last fifteen.

The amount will need to increase to **70GW – 108GW** by 2050 to accommodate the increase in electricity demand as heat and transport move from fossil fuels to electricity.

1.1 Locally determined contribution

A locally determined contribution has been developed for Cherwell through: reviewing the need for power in Cherwell and the proportion of this that may need to come from solar PV; the capacity of the grid to accommodate new generation; impacts on agricultural land and production, and how well-placed Cherwell is when compared to others to accommodate solar PV generation.

We have developed two ranges for a local contribution – one for 2030, which recognises the UK Government's Clean Power 2030 target and another for 2050, which reflects the additional demand for electricity to achieve net zero.

- **2030** – a 95% decarbonisation of the electricity supply for the UK. The potential locally determined contribution for Cherwell would be between **225MW** and **300MW**, of which 90MW has already been deployed.
- **2050** –accounts for the transition of heat and transport away from fossil fuels, and it is potentially also less constrained by the existing electricity network as there is time to bring new infrastructure forward, should that be required. A reasonable locally determined range for Cherwell is **650MW** to **1 GW**.

Cherwell is relatively well suited to solar PV generation, benefiting from above-average sunlight levels compared to the UK, while the area may be less suitable for wind generation due to relatively low wind speeds. On that basis the above ranges should be considered as a *minimum contribution* for solar PV as that is likely to be the predominant technology in the area. Current rates of deployment will need to increase fourfold to achieve even the lower end of the 2030 range.

1.2 Progress against the 2030 range

Cherwell currently has 83MW of ground-mounted solar PV and 6.65MW of rooftop PV operational. This represents around 40% of the lower end of the range for 2030 and significant improvements will need to be made to the speed of deployment if the range is to be achieved.

A minimum of an additional 135MW will be required to achieve the target of which around 38MW is currently identified and either awaiting or undergoing construction.

1.3 Where should solar be deployed – rooftop or ground mount

Solar PV can either be mounted on rooftops or directly ground-mounted, and there is a need for both in a locally defined contribution. Ground-mounted solar PV is significantly cheaper and faster to deploy than rooftop systems and currently, only around 5% of PV in the area is roof-mounted.

Concerns over loss of agricultural land to ground-mounted solar PV should be balanced against the significant biodiversity gains that can be achieved with solar PV and its significantly more efficient production of energy than crops grown for biofuels. Deployment of the 300MW target of ground-mounted solar PV would use **around 600ha of land which is equivalent to around 1.1% of all agricultural land area in the district.**

Project LEO has identified significant potential for rooftop solar PV, but this does not account for the complexity of delivering huge numbers of small individual schemes. Progress to date has been slow and considering the forecast rates of deployment for rooftop PV in the UK over the next five years, it would not be reasonable to expect more than around 10MW of new capacity to come forward on rooftops.

1.4 Actions the Council should prioritise

Beyond agreeing this strategy and adopting a locally determined contribution, the Council can undertake the following proactive measures which will speed up decarbonisation, increase the speed of deployment of solar PV and reduce the overall demand for electricity across the District:

1. Accept that a reasonable minimum contribution for solar PV in Cherwell by 2030 is between 225MW and 300MW. This range will require new ground-mounted solar systems, but not to the extent that they threaten food security.
2. Recognise the need to significantly increase the speed of deployment and use appropriate planning policy and proactive measures to promote more rapid deployment of solar PV in the district in locations where it is appropriate and on rooftops.
3. Develop a balanced approach to accepting both rooftop and ground-mounted solar PV, recognising the significant benefits of scale, pace, and biodiversity gains the latter can bring.
4. Focus on decarbonising all public sector estate in Cherwell and lead by example with the Council's buildings. This can be supplemented with measures to support other public sector bodies in their energy efficiency programmes and deployment



of solar PV.

5. Community energy has the potential to deliver significant long-term benefits to local communities within the district, including reduced energy bills and increased energy sustainability and security. The Council should continue to support renewable energy developments that are genuinely led by or meet the needs of local communities within the district.
6. Review this document when the LAEP is received and revise estimates around the speed of deployment and overall energy consumption/ need for solar in the district.

2 Introduction & Background

2.1 Purpose

The purpose of this strategy is to assess the importance of solar energy as a technology in supporting the Council in meeting both its own climate targets and in supporting area-wide decarbonisation. In doing this, the Council seeks to identify a target range of solar for the area which is consistent with its own aims and supports decarbonisation national targets.

2.2 Background – Climate Emergency

The Council declared a Climate Emergency in July 2019 and is now aiming to be net zero carbon by 2030. Further, more detailed targets are articulated in the Council's 2020 Climate Action Framework¹ (the Framework).

In addition to its legally binding commitments to achieve net zero emissions by 2050, the UK Government has declared its ambition to achieve Clean Power² by 2030. In November 2024, the UK Prime Minister declared at COP29 that the UK would reach an emissions reduction of 81% against 1990 levels by 2035 (the UK had achieved a 53% reduction by 2023).

There are two separate commitments made by the **Government**; the first is **Clean Power by 2030**, and the second will entail transitioning heat and power away from fossil fuels. This second commitment will require a 2.4-fold increase in electricity supply by **2050 to achieve Net Zero emissions**. This strategy, therefore, looks at an initial 2030 target range in line with the decarbonisation of the electricity supply as of 2030 and then makes suggestions for future target ranges to achieve the more stretching 2050 target.

2.3 Solar PV

Solar PV is a tried and tested technology widely adopted in the UK and worldwide. Solar panels provide the means to convert daylight into electricity.

Solar PV has been deployed at scale and pace in the UK since 2010, and once the up-front capital costs have been paid, the technology is cheap and reliable, and its fuel source is free. Investment in large-scale solar PV has become a staple for pension and investment funds due to its reliability and predictability. Along with wind turbines and other sources of renewable energy, solar provides the opportunity for the UK to decarbonise its power supply and break the link between the cost of electricity and the global price of gas. Solar is already one of the cheapest forms of electricity in the UK.

Both rooftop and ground-mounted solar PV provide a valuable contribution to the UK's energy supply which needs to grow over the coming decades. The technology is very quiet in operation and has high rates of reliability.

Maintenance operations are relatively straightforward, largely comprising of cleaning the panels and managing vegetation to avoid shading. Inverters and transformers (required to convert the electricity produced from DC to AC and match its voltage to the grid) will

¹ [Climate Action Framework August 2020.pdf](#)

² [Clean Power means that by 2030, Great Britain will generate enough clean power to meet our total annual electricity demand, backed up by unabated gas supply to be used only when essential.](#)

require periodic replacement – but these units are modular, so the process is relatively simple and quick.

2.4 UK Electricity Supply – how much PV do we need?

Source data for this report includes area-wide emissions data produced by the Department for Energy Security and Net Zero (DESNZ) and various other sources, including the Future Energy Scenarios (FES) produced by the National Energy Systems Operator (NESO). NESO produce scenarios annually, setting out the likely changes required to achieve net zero emissions from power by 2050, which are a combination of behavioural change and technology development. The scenarios also outline the likely amounts of key technologies needed, such as solar PV.

Electricity generated by renewables and nuclear power will be the backbone of a clean energy system. The Labour Manifesto³ articulates the following ambitions for **Clean Power 2030**:

- 60 GW offshore wind (including 5 GW of floating offshore wind)
- 50 GW solar PV
- 35 GW onshore wind

The graphic in figure 1 shows that the UK has either built or is constructing around 24MW, or nearly half of the solar PV needed for Clean Power 2030.

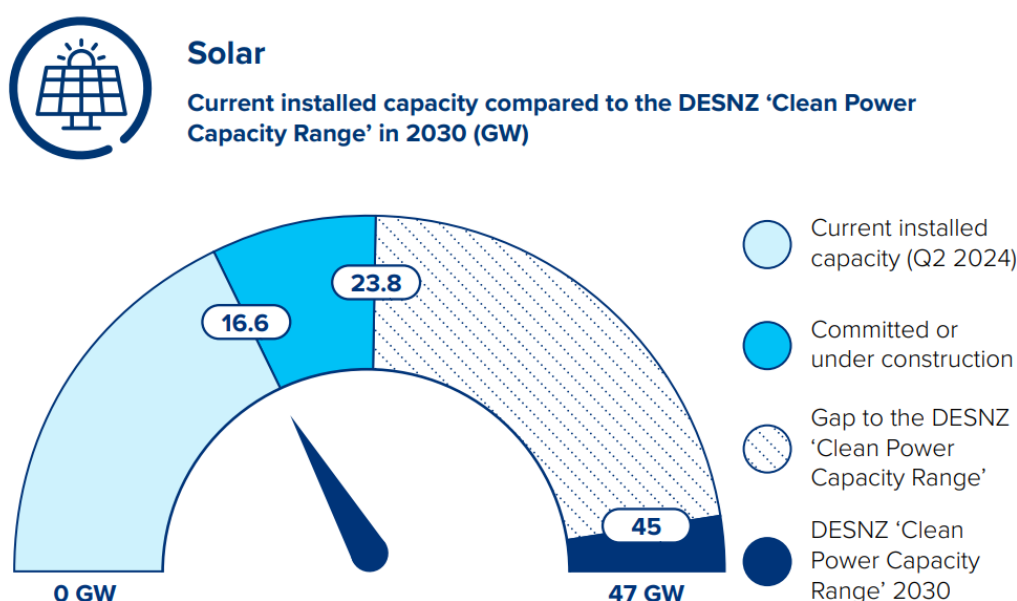


Figure 1: Currently installed solar PV capacity v capacity required to achieve clean power by 2030

The UK needs to install more solar PV in the five years to 2030 than it has in the fifteen years since 2010

³ [Make Britain a Clean Energy Superpower](#)



After 2030, the transition of heat and transport to electricity will lead to a significant additional requirement – with the target range of solar PV in the UK being between 70 and 108GW.

Quick explainer: Units of Power and electricity demand or supply

At home you will consumer power in Watts or kilowatts (kW). A typical household solar system is around 4kW and produces around 4,100kWh* (kilowatt hours) of electricity a year. A normal kettle takes around 0.25kWh to boil.

The size of a system is described in watts, kW, MW or even GW – whereas power produced or required has a time factor and is described as kilowatt hours, kWh, MWh or GWh.

As solar farms are much larger they are normally described in MW, where a MW is 1,000 kW. A mid-sized solar farm might be 40MW and this might produce around 4,100MWh – or 4.1GWh or electricity per year (enough to boil around 16.4 million kettles).

*In Cherwell each kW of solar PV installed should produce around 1,025kWh or electricity a year.

2.5 Local Area Energy Plan (LAEP)

Oxfordshire County Council and CDC will commission a LAEP for the Cherwell district – this is a strategic document which examines the available energy supply against future demand and aims to balance this in a low-carbon way. This solar report is being produced in advance of the LAEP and is therefore based on a series of assumptions which will need to be verified by the more detailed work undertaken as part of the LAEP. The figures in this report will have scope to be changed during the LAEP process but should provide a sufficiently robust analysis to enable the scale of requirement to be understood in the context of current progress.

Key Points – a reliable power source helping to deliver on National Targets

Solar PV is a cheap and reliable technology – deployed at scale and pace across the world. The technology is a simple and effective means of converting daylight into electricity and provides the opportunity to decarbonise the power supply and provide cheaper electricity through breaking the link between the price of electricity and the global price of gas.

To achieve the Government's target of Clean Power by 2030 the UK needs to deploy around 50GW of solar panels, around half of which are currently either operational or at an advanced stage of development or construction.

This amount will need to increase to 70GW – 108GW by 2050 to accommodate the increase in electricity demand as heat and transport move from fossil fuels to electricity.



3 Assessing a Locally Defined Contribution

3.1 What is a locally defined contribution, and why do we need one?

The UK has significant targets for renewable energy generation and for deployment of solar PV. A locally defined contribution, however, is a way of taking that national target and expressing it fairly for a particular area or district. In this chapter, we will look at methods that can be used to estimate a reasonable share for Cherwell and develop a range for a locally defined contribution.

Cherwell is Oxfordshire's second largest renewable energy producer, and except for a small dip in 2019, renewable energy generation in the district has increased every year since 2015. The Council recognises the need to provide a positive framework for renewable and low-carbon energy generation and acknowledges that national policy makes clear the overarching need. However, the Council considers that development needs to be managed carefully to ensure that the important characteristics of Cherwell's environment and landscape are not unacceptably harmed.

To further develop suitable policies and support for solar PV, the Council first needs to establish what would be a fair and appropriate quantity of solar PV for the district.

3.2 Defining the need in Cherwell

There is no set methodology for determining the amount of solar PV which would be appropriate for an area to generate, so we have adopted the approach of a locally defined contribution.

In determining that locally defined contribution for 2030, we will consider the following:

- Electricity consumption in Cherwell
- The split between electricity and other fuel sources – and therefore the likely requirement to expand electricity supplies between 2030 and 2050.
- What can be delivered in Cherwell by 2030, accounting for grid constraints, rooftop potential and fair use of land.

This document will set out a fair and achievable range for solar PV deployment in Cherwell by 2030 and describe the potential level of further deployment between 2030 and 2050.

3.3 A proportion of the Cherwell energy demand

This assessment is in two phases and looks both at electrical consumption in 2022 and the total electrical consumption in the area after the transition of heat and transport to net zero fuel sources.

The assessment seeks to balance power demand and supply across the district but does not fully account for the contribution that rural areas may need to make to the wider UK demand as the opportunities for electricity generation in urban areas are more constrained. Cherwell will also need to consider the relative balance of solar PV (which has good natural resource) and onshore wind (which has lower than UK average natural resource).

3.3.1 2022 Demand assessment for Cherwell

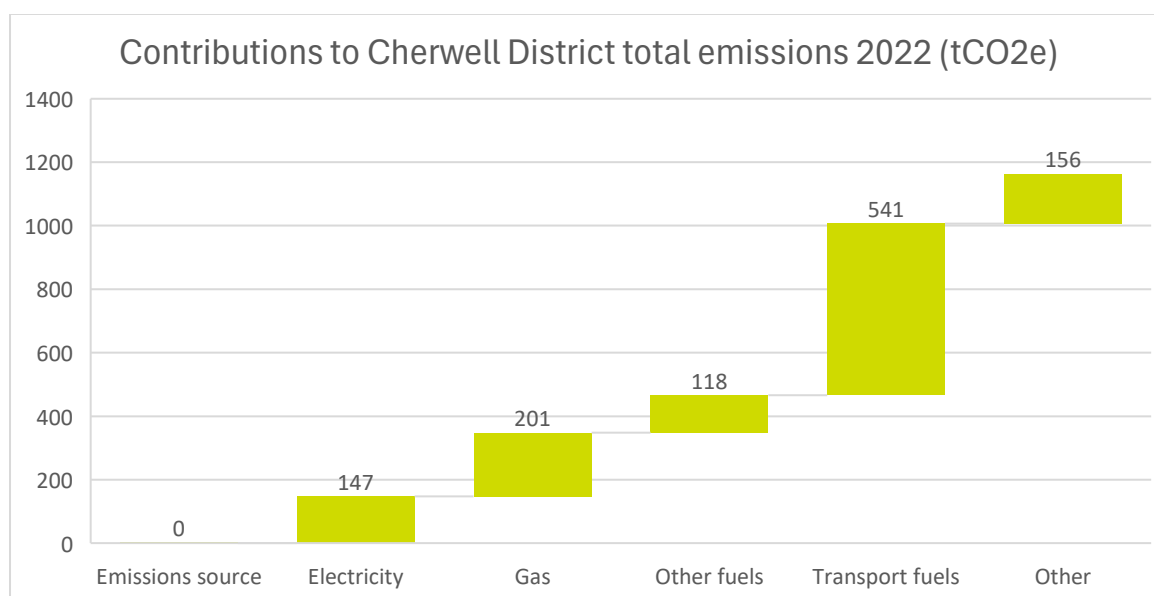
The UK Local Authority and Regional Greenhouse Gas Emissions Statistics: 2005-2022⁴ published in June 2024 by DESNZ presents the latest estimates of greenhouse gas emissions for local authorities in the UK - Table 1 provides the breakdown for Cherwell.

Table 1 – 2022 estimate of greenhouse gas emissions produced within Cherwell

Emissions Source	Electricity only (KtCO ₂ e)	All Sources (KtCO ₂ e)
Industry	41.2	149.2
Commercial	42.4	68.0
Public sector	7.3	34.1
Domestic	54.1	208.9
Transport	n/a	541.0
Land Use (including removals)	n/a	-7.6
Agriculture	2.1	119.2
Waste (includes methane emissions)	n/a	50.1
Total	147.1	1162.9

Figure 2 demonstrates that nearly half of all Cherwell emissions come from transport. For the energy calculations we have discounted the 13% of emissions from 'other' sources as these comprise emissions from land and farming and from landfill and waste which cannot be mitigated by a transition to an alternative power source.

Figure 2 – Proportion of emissions from different energy sources: Cherwell District 2022



3.3.2 Total electricity demand in Cherwell by 2050

⁴ [UK local authority and regional greenhouse gas emissions statistics, 2005 to 2022 - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

3.3.3 2050 demand assessment for Cherwell

The total energy demands set out in table 1 have been converted to electrical equivalents in table 2 on page 12. The assumptions behind these calculations are set out in Appendix 1.

Table 2 – Source of energy demand: Cherwell district

Source of Demand	GWh
Current electrical consumption	761
Additional for gas and oil conversion	613
Additional for transport conversion	724
Total	2,098

Total requirement for the district area by 2050 is, therefore, approximately 2.05 GWh, of which approximately 700 MWh is required for transport.

The Energy Systems Operator estimates that electricity consumption in the UK will increase from current levels by a factor of around 2.4 times to achieve net zero by 2050. The increase across Cherwell (on the assumptions set out above) is an increase of 2.75 times existing electricity consumption, which reflects the larger-than-average contribution made by transport emissions.

Around half of all emissions in Cherwell are from transport, with another quarter coming from heating – all of this will need to be supplied by electricity by 2050

What might change demand between now and 2050

The analysis above sets out what would happen if demand remained static over time, however, there will be additional demand from new buildings and the opportunity for the Council to influence demand in existing buildings through energy efficiency advice and support programmes. In the remainder of this section we examine how material these changes could be by 2050 and use that to refine the estimate for energy demand in 2050.

Energy efficiency for new buildings

It is to be anticipated that there will be new housing growth and new commercial buildings in Cherwell over the coming decades.

Even an efficient band A property will have a power demand, and 2.5 MWh p/a would be a reasonable proxy figure. With 20,042 new houses planned between 2024 and 2042 in Cherwell⁵ this would equate to an additional power demand of around 50 GWh pa by 2042.

Current wording proposed by the emerging Cherwell local plan states "*deliver sufficient renewable electricity generation capacity on-site (or near-site with a private supply to site) to at least equal the development's estimated total annual energy demand*"

⁵ <https://modgov.cherwell.gov.uk/mgConvert2PDF.aspx?ID=57609>

(regulated and unregulated energy), or 120kWh/m2 footprint/year..” and if this plan is adopted this could reduce additional net demand from new building below 50 GWh pa.

Energy efficiency in existing buildings

We know that around a quarter of Cherwell’s existing energy demand is oil and gas, largely used for heating buildings. So, what impact could better energy efficiency have on that demand?

Currently, the average residential property in Cherwell has an EPC rating of C, which is better than the national average and most properties will therefore have undertaken the easier and cost-effective measures such as double glazed windows, loft insulation and more efficient gas and oil boilers.

With 65,000 houses and around 5,700 commercial and other buildings in Cherwell, more complex and harder to implement ‘**deep**’ retrofit measures (such as underfloor insulation and external wall insulation) would need to be undertaken for around **2,600 homes and 228 commercial properties per year** to improve the energy efficiency of all the stock by 2050. Indicatively, homes in Cherwell each use around 11.9 MWh of oil and gas per annum for heating, and by taking energy efficiency measures such as insulation and heating controls, they could save up to 5.5 MWh, a reduction of around 46%. The Council should consider how it can lend it’s support to building owners and other local initiatives to increase take up of energy efficiency measures.

On this basis, it would be reasonable to assume that energy efficiency measures across all buildings in the district could reduce the overall additional demand for electricity from displaced gas and oil from 613 GWh to around 331 GWh by 2050. Energy efficiency measures could lead to **a reduction in overall power demand of around 275 GWh by 2050, but this is entirely dependent on this retrofit work taking place.**

Transitioning heat and transport to electricity (without any associated energy efficiency measures) will increase demand from around 750GWh pa to 2,000GWh pa by 2050. There will around 50GWh of additional demand from new buildings and a potential reduction of around 275GWh from energy efficiency.

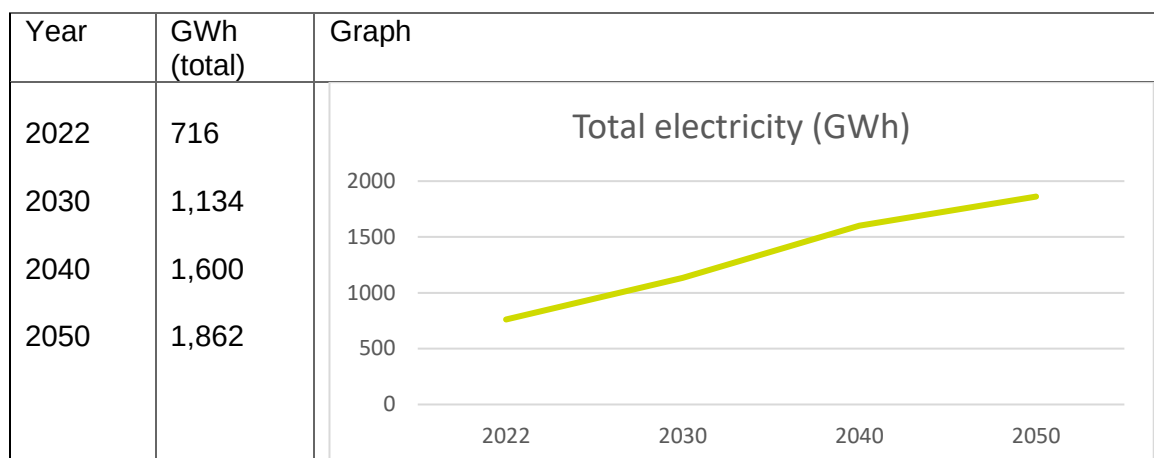
Overall growth in electricity demand over the period to 2050 is around 2.5 times which is in line with the average forecast for the UK by the Energy Systems Operator.

Developing a transition trajectory

The transition of heat and transport to electricity, the delivery of energy efficiency measures and the development of new buildings will happen over time. The chart at Figure 3 on page 14 provides an indication of how electricity demand is likely to increase over the period from 2022 to 2050.



Figure 3 – Cherwell forecast electricity demand over time



3.3.4 Translating overall demand into a need for solar PV

The Government effectively has two targets for decarbonisation of the electricity supply; the first is the Clean Power target for 2030 – which largely decarbonises the UK's electricity supply, and the second is a net zero 2050 target, which requires a significant increase in electricity generation to allow for the transition of heat and transport to electricity.

How much of total energy demand will need to be from solar PV?

We have used data from the Energy System's Operator's Future Energy Scenarios data workbook⁶ to estimate that by:

- **2030:** 19% of the UK's electricity generating capacity will be by solar PV, and 50% will need to be solar and wind.
- **2050:** 37% of the UK's electricity generating capacity will need to be solar PV, and 80% will need to be solar and wind.

Cherwell's electricity demand in 2030

Electricity demand for Cherwell by 2030 is expected to be around 1,134GWh, of which around 215MWh would represent a proportion of solar PV generation in line with national need. With each MW of solar PV producing 1,025 MWh of electricity, this would equate to around **210MW of solar PV in the district by 2030.**

Cherwell's electricity demand in 2050

Electricity demand for Cherwell by 2050 is expected to be around 1,862GWh, of which around 689MWh would represent a proportion of solar PV generation in line with national need. With each MW of solar PV producing 1,025 MWh of electricity, this would equate to around **672MW of solar PV in the district by 2050.**

⁶ [Future Energy Scenarios data workbook 2024 – using the holistic transition and electric evolution pathways data](#)



Based purely on electricity consumption in the district a fair proportion of solar PV would be 210MW by 2030, increasing to 672MW by 2050.

But Cherwell may be less suited to other forms of renewable generation, so these figures are likely to be a minimum requirement.

3.4 Grid availability

This is based on the available capacity for grid connections in the area. Information is available for the distribution networks, however capacity at transmission network level is less clear. For this assessment, we have assumed that the Botley West Solar Farm has identified the likely capacity that will come forward at transmission level before 2030.

The most significant barrier to the expansion of renewables is difficulties in securing grid connections. Understanding the current grid status in the Cherwell is therefore essential for effective strategy development and planning. It can take many years to build new grid infrastructure, so for any 2030 ambitions, consideration needs to be given to the capacity that can actually be connected in the area before that date. However, beyond 2030, there is scope for further upgrades, so any 2050 range should be less constrained by existing infrastructure.

The National Energy Systems Operator introduced proposals for very significant reforms to the process of allocating grid connections in November 2024, aimed at speeding up connections and changing the current connection queue from a “first come, first served” model to a “first needed, first ready, first connected” connecting first. New arrangements will be finalised in summer 2025, and the comments below relate to grid availability under the existing queue management systems.

The grid in the UK is operated at lower voltages by the local distribution network operators (DNO) – this is known as the **‘distribution network’** and the higher voltages and more strategic infrastructure by National Grid – this is known as the **‘transmission network’**.

It is possible to connect renewables to either network – but the scale of projects on the transmission network tends to be significantly larger.

3.4.1 Electricity network connections at **distribution** level

This section sets out more detail on where the electrical substations are in the district and therefore the locations which will be focus for development pressure.

Cherwell is served by two DNOs, Scottish and Southern Electricity Networks (SSEN), who cover the south of the district and National Grid Electricity Distribution (NGED), who cover the north. Further details are provided in Appendix 2, which explores the existing network conditions and constraints.

Figure 4 on page 16 shows the DNO areas and locations of the main substations and bulk supply points in the District.

Figure 4 – DNO infrastructure in Cherwell



From our analysis (see Appendix 1), there is currently **almost no capacity** available in the BSPs and substations around Cherwell that has **not already been contracted**.

The difference between DC and AC capacity

The size of a solar system is usually described in dc electricity. Where systems export on to the (ac) electricity grid it is more efficient to oversize the dc when compared to the ac value by a factor of around 1.25 to allow for system losses and make the most efficient use of the inverters.

Therefore a 44 MW (dc) solar farm needs around 35MW (ac) in the substation.



The contracted generation across all substations in the district is around 188 MW (ac) and is likely to be all that is available before 2030. The data available does not allow us to see how much of the contracted generation is solar PV, but it is fair to assume that the vast majority will be. This ac capacity equates to around **235MW of solar panels**

The DESNZ Renewable Energy Planning Database (REPD)⁷ identifies **121 MW** of ground-mounted solar PV projects in Cherwell District that are either operational, under construction, or awaiting construction, of which **83 MW** is already **operational**.

This leaves around 152 MW of contracted capacity to be constructed before 2030, of which 38MW already has planning consent. In July 2024, planning consent was refused for two large solar schemes at Otmoor (44MW (dc)) and Godington (45MW (dc)). These schemes are likely to be the majority of the contracted capacity at Headington and Bicester North, respectively. If these schemes do not come forward through planning appeal, then it is likely that an alternative will be sought within reasonable distance of the point of connection (max 4-5km).

The distribution networks in the district can accommodate around a further 152 MW of solar panels before 2030, of which around 38MW already has planning consent.

3.4.2 Available capacity for connection at **transmission level**

In addition to electrical connections to the distribution network some very large connections are now being made directly on to the transmission network. For Cherwell this means that there may be additional connection capacity in addition to the 152MW identified above. It's more difficult to assess the contracted capacity at transmission level across the district as the connection infrastructure covers a much wider area.

An application has been received by the Planning Inspectorate for the connection of an 840 MW solar scheme connecting to a new National Grid substation near Farmoor. A proportion of this scheme will be in Cherwell if the scheme achieves planning consent.

Panels for the scheme would cover around 890 ha, with around 128 ha being located in Cherwell. **The proportion of the scheme in Cherwell equates to around 121 MW**

Total Potential to connect solar PV to the grid before 2030

A total of 235MW of solar can be connected to the distribution network, of which 83MW is already connected. A further 121MW could be connected to the transmission network via the Botley West Solar Farm scheme. The total solar PV which could therefore be connected to the grid in Cherwell before 2030 is 356MW.

This would represent around 31% of the forecast electricity consumption in the district in 2030.

⁷ [Renewable Energy Planning Database: quarterly extract - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/91111/renewable-energy-planning-database-quarterly-extract-2021-2022.pdf) – includes schemes >150kW submitted after 2021 and schemes >1MW submitted before 2021.

3.5 Land area assessment

3.5.1 Distribution and scale of UK ground-mounted solar PV

This assessment looks at the proportion of solar PV that is likely to be required as ground-mounted and then looks at a fair proportion for Cherwell based on land area.

Figure 5 – UK distribution of wind and solar



- Solar PV
- Wind turbines

Figure 5 shows the deployment of wind and solar in the UK. Cherwell and the surrounding districts are heavily dominated by solar PV. This is because of both relatively poor wind resource and Government policy between 2015 and 2024.

Around 68% of installed solar PV by capacity is in southern England, east Anglia and the east midlands. By contrast, only 14% is located north of the Humber.

Government appetite for onshore wind has increased in recent years, however, wind resource is fixed, and it is likely that **Cherwell's contribution will largely be solar.**

Looking at the UK distribution of solar it would be fair to assume that locations in southern England should expect to accommodate significantly more solar PV than their land area alone would suggest.

Historically, around 55% of solar PV is ground-mounted, with the remainder being on rooftops. Over the last fifteen years, some of the more straightforward rooftop schemes have been delivered, and ground-mounted solar PV systems have become significantly larger; it would therefore be fair to assume that of the 50GW required by 2030, at least 27.5GW will be ground-mounted and of the 70GW+ required by 2050 at least 38.5GW will be ground-mounted.

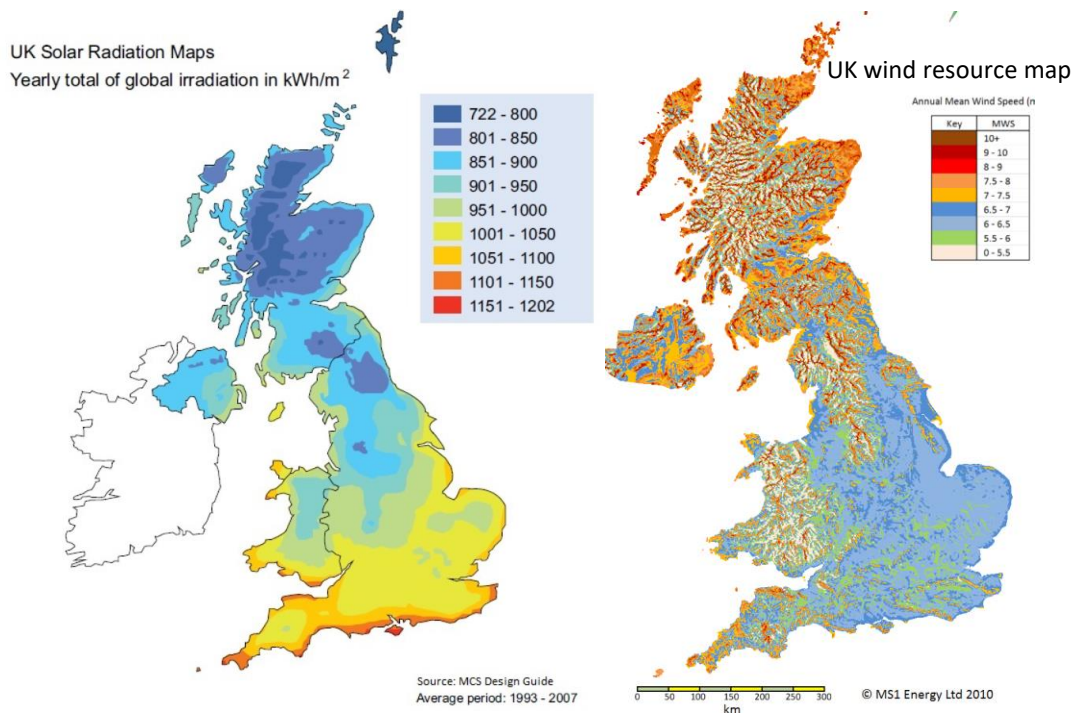
Chapter 5 will provide further analysis on the type of land that might be used and the opportunities for rooftop deployment in the district.

The land area of England and Wales is around 166,476 sq km, of which Cherwell represents around 0.35%. (Scotland has been excluded due to expected low rates of Solar deployment) Cherwell should, therefore, expect to host at least **176MW of ground mount PV by 2030 (to meet the Clean Power goal) and 248MW by 2050 (to achieve overall net zero).** Looking at land area alone is far too simplistic as it does not allow for significant factors, which will mean that rural areas like Cherwell will need to take a larger proportion of what is needed. These factors include:

Rurality – On average, in the UK, there are 277 people per sq km; in Cherwell, this number is 278 people per sq km. There is, therefore, no strong argument that Cherwell has a high population density and should, therefore, take less of a share.

Mix of wind and solar - The majority of the solar development in England will be in the south, as Wales and northern England have better wind resource and less suitable land (see figure 6).

Figure 6 – Comparison of UK solar and wind resources



Solar irradiance in Cherwell exceeds the UK average, while the area's wind resource falls below the national average. Generally, wind speeds of less than 7 m/s (i.e. green and blue) are not considered viable without subsidy.

Due to its good solar resource and relatively poor wind resource Cherwell should expect to take more than an average proportion of the UK's solar PV requirement by land area

3.6 Locally determined contribution to UK solar PV

We have examined three different aspects which could be considered when defining a local contribution for solar PV. Table 3 (on page 20) sets out the parameters for each of these in both 2030 and 2050.

Table 3 - potential contributions to solar PV in Cherwell

Parameter	2030 (MW)	2050 (MW)	Comments
Solar as a proportion of area-wide electricity consumption	210	672	This may be an underestimate, as Cherwell is unlikely to accommodate any wind generation. Cherwell's total renewables contribution in 2030 could be nearer 560MW in 2030 and 1.5GW in 2050. Need to consider that heavily urban areas will be unable to fulfil their own demand, with the balance being made up from rural areas and offshore wind.
Grid constraints	356	n/a	This assumes that 121 MW associated with the Botley West transmission connected system are possible by 2030. If that is not the case, then the 2030 maximum would be 235MW.
Land area	176	248	This is likely to be a significant underestimate as most ground-mount solar PV will need to be in southern England and the Midlands. It also represents significantly less than 19% of the area's supply requirements by 2030 or 37% by 2050. This does not take account of the balance between rooftop and ground-mounted solar.

The land area assessment does not appear to produce a fair contribution, as it would mean that Cherwell is producing significantly less energy from solar PV than the UK average, whereas its population density and solar resource suggest it should produce more than average.

Balancing area wide consumption, renewable potential and available grid connections **225-300 MW of solar PV by 2030** would be a fair and realistic minimum contribution. Beyond that, if Cherwell is to make its full contribution to the decarbonisation of the UK, then between **650 MW and 1GW by 2050** are likely to be necessary.

A reasonable amount of solar PV deployment for Cherwell

An initial range should be identified for 2030 to align with the Government's Clean Power ambitions, with a more ambitious range identified for 2050 to reflect the need to increase UK renewables generation by a factor of 2.4 to decarbonise heat and transport and achieve net zero by 2050.

Cherwell has an average population density for the UK, good solar irradiance and relatively poor wind resource. Based on triangulating the Cherwell energy demand, the available grid capacity and land constraints the following are considered reasonable **minimum** contributions from Cherwell to the national need for solar PV:

By 2030 – between **225MW** and **300 MW**
By 2050 – between **650MW** and **1GW**

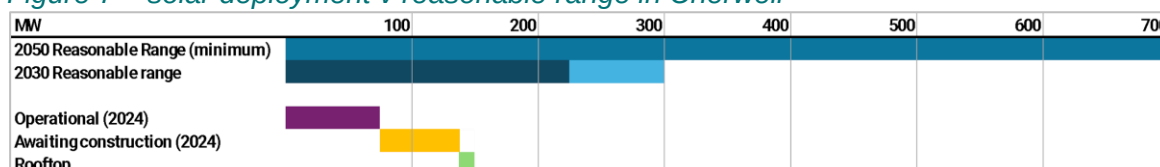
Atmospheric carbon emissions are cumulative – so early action has a greater impact on combatting climate change – so available grid connections should be utilised.

4 Cherwell Progress against target

Currently, there are around 128MW of operational or soon-to-be operational solar PV assets in Cherwell. Of this total, around 6.65MW is rooftop and the remainder is ground-mounted – see figure 7.

This represents around 57% of the lower end of a reasonable range for 2030 and around 17% of what might be necessary by 2050.

Figure 7 – solar deployment v reasonable range in Cherwell



Solar PV in the UK started to be deployed at scale from around 2010 onwards, meaning that, on average, the district has installed around 6MW pa – of which around 7.5% is rooftop.

If the district is to achieve even the lower end of the desirable range by 2030, then deployment between 2025 and 2030 needs to be closer to 20-25MW pa. The time taken to develop and deliver projects varies depending on scale and whether they are rooftop or ground mounted – but it is fair to assume that anything other than small domestic schemes will take 6-12 months minimum from inception to completion.

Progress in deploying solar PV needs to increase around four-fold if Cherwell are to achieve even the lower end of a reasonable range for 2030.

Section Summary – Progress and rate of deployment

Cherwell currently has operational solar PV of around 90MW of solar, of which nearly 7MW is on rooftops. There is a further 38MW either in construction or awaiting construction.

To achieve the lower end of a reasonable contribution to UK solar PV by 2030 at least a further 135MW will be required and the average speed of deployment will need to quadruple.

5 Where could the solar be installed?

Solar PV can be mounted on existing buildings (rooftop) or ground-mounted (including carport arrays). In this chapter, we explore where an appropriate balance might be between rooftop and ground-mounted solar for Cherwell.

5.1 Advantages and challenges of rooftop and ground-mounted solar

This section sets out the pros and cons of both rooftop and ground-mounted solar; the subsequent sections of this chapter will go on to explore a suitable balance for Cherwell and provide supplementary information in support of the information in table 4.

Table 4 – advantages and challenges of different types of solar system

Solar Type	Advantages	Challenges
Rooftop	- Provides electricity directly to the customer - Broadens access to cheap electricity - Doesn't need to take farmland out of production - Small domestic schemes (4kW) generally don't require lengthy grid application process or costs	- Expensive - Slow to deploy as it depends on lots of individual decisions - Not possible/suitable for all roofs due to structural stability, roof covering type, overshadowing, poor orientation, protected planning status - Can be considered unsightly
Ground-mounted	- Meets need at scale and pace - Most forms are cheap to deploy (carports are not) - Land on ground-mounted solar farms can be used for significant bio-diversity enhancement	- Generally needs farmland for larger scale developments – taking land out of farming use (although not necessarily out of food production). - Profits from generation not retained in the local economy - Large schemes can be visible across a wide area

5.2 How common are rooftop and ground-mounted solar?

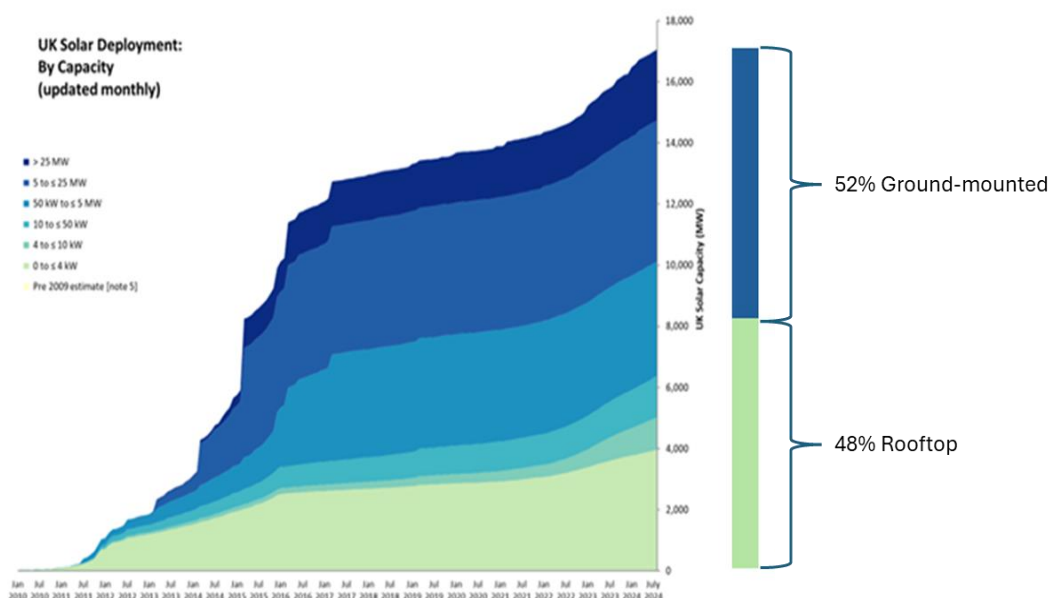
How is solar split between rooftop and ground-mounted in the UK?

The Microgeneration Certification Scheme (MCS) reported in May 2024 that more than 1.5 million smaller installations under 50kW had been installed across the UK since 2008. This represents around 10GW of capacity and makes the average size of these systems around 6.7kW, indicating that these are mostly small domestic installations (4kW or less). Around 5-6% of UK homes currently have a solar system.

Solar Energy UK predicts 2 million installs will be reached in three years' time, an average of around 167,000 installations per year. If you assume that 90% of these will be domestic, then around 0.6% of the housing stock is installing a solar system each year.

Figure 8 shows the split between ground-mounted and rooftop solar in the UK.

Figure 8 – UK Solar Deployment: By Capacity⁸



What are the proportions in Cherwell, and why are they different from the UK average?

In Cherwell, around 7.5% of the solar PV is rooftop, with the remaining 92.5% being ground mounted. Rooftop solar PV systems are a combination of small residential scale schemes (generally <4kW) and larger commercial schemes. It is likely there are two factors determining a relatively low proportion of rooftop solar:

1. Dense urban areas rarely have the space for any ground-mounted solar – so systems in these areas are almost all roof-mounted, which will drive a higher proportion of rooftop systems (i.e. significantly more than 48%) in these areas.
2. The commercial rooftop installations are a combination of agricultural buildings and larger commercial buildings. While Cherwell should have an average density of agricultural buildings, there may be a lower density of commercial buildings than in other areas, or more of these may be tenanted. Buildings with a landlord/tenant relationship can be more problematic for rooftop solar PV due to the additional complexity and the short-term nature of some tenancy agreements, particularly in sectors such as logistics. Really big rooftop solar PV systems tend to be on much larger owner-occupied roofs, such as the Rolls Royce 3.4MW system or the schemes recently delivered at Peel Ports.

⁸ [Solar photovoltaics deployment August 2024.xlsx \(live.com\)](#)

Currently, **installed rooftop** capacity in Cherwell is around **6.65 MW**.

Data from Project Leo⁹ suggests that further suitable rooftop capacity could provide around 550 MW of solar PV (325 MW of domestic and 230 MW of non-domestic). These figures do not necessarily account for all relevant factors, such as tenure, the structural ability of the roof to support the load or whether larger commercial schemes could secure a grid connection and is therefore potentially a significant overestimate.

Assuming that rooftop solar PV has been installed since 2010, the 6.65 MW represents around 0.475MW each year, although Figure 8 above shows that this is not linear. If Cherwell were to deploy rooftop solar PV at the rate forecast by Solar Energy UK (i.e. around 0.6% of housing stock per year), this would equate to around 400 installs per year (and around 1.5MW of capacity).

Counting 2025 and 2030 you could credibly expect to install around a further 9-10MW of rooftop solar at UK forecast rates of deployment. This is around 3.5 times faster than the historic rate since 2010.

Project Leo suggests there is very significant potential for rooftop solar in Cherwell, but this optimism is not matched by current rates of deployment. By 2030 it would be credible to expect around 17MW of rooftop solar in Cherwell.

5.3 Ground-mounted solar and the use of agricultural land

Policy Context

In 2019, the UK Government set a legally binding target to reduce the UK's greenhouse gas emissions by 100% by 2050, compared with 1990 levels, and since October 2021 have introduced a raft of further supportive policies (Ten Point Plan for a Green Industrial Revolution¹⁰, Net Zero Strategy: Build Back Greener¹¹, British Energy Security Strategy¹², Mission Zero¹³, Powering Up Britain – Energy Security Plan¹⁴, Great British Energy¹⁵ and Clean Power 2030¹⁶). All these policies are supportive of a significant increase in renewables including solar PV.

5.4 National Planning Policy

Competing pressures for land from energy, housing, biodiversity, food, water and transport are balanced in policy terms through the National Planning Policy Framework (NPPF).

The NPPF has a presumption in favour of sustainable development – which includes all renewables and goes on to encourage local authorities to identify criteria for suitable land allocation, but also recognises the economic benefits of Best and Most Versatile

⁹ [Project Leo](#)

¹⁰ [The ten point plan for a green industrial revolution - GOV.UK \(www.gov.uk\)](#)

¹¹ <https://www.gov.uk/government/publications/net-zero-strategy>

¹² <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

¹³ [MISSION ZERO - Independent Review of Net Zero \(publishing.service.gov.uk\)](#)

¹⁴ [Powering Up Britain - Joint Overview \(publishing.service.gov.uk\)](#)

¹⁵ [Great British Energy founding statement - GOV.UK \(www.gov.uk\)](#)

¹⁶



Agricultural Land (BMVAL),¹⁷ advising that where significant development of agricultural land is involved, poorer quality land should be used in preference.

The National Planning Statement EN-3 outlines how solar and agriculture can be complementary. EN-3 sets out that land type should not be a predominating factor in determining the suitability of a site for solar development. Consequently, a developer must instead identify why the use of BMVAL is necessary and then whether it is possible or feasible to locate the scheme on poorer over higher-grade agricultural land.

For schemes that could potentially affect BMVAL land of more than 20 hectares (ha), Natural England are a statutory consultee and should be relied upon to make an informed judgement on whether a proposed development would result in unnecessary loss.

Balanced against this will always be the need to construct solar farms in locations that can connect to the grid at an affordable price. Where there is a prevailing land quality near a suitable grid connection, developers can use a sequential test to demonstrate that there is no suitable lower-grade land available.

The Cherwell Local Plan will seek to balance the need for new infrastructure against other considerations, such as landscape, and the impact of each scheme will need to be considered in line with local and national planning policy.

5.5 Use of agricultural land

Food security is often cited as a reason not to develop ground-mounted solar PV systems. This section examines the substance of that argument and how it applies to Cherwell.

The Department for Environment Food and Rural Affairs published its Food Security Report¹⁸ in 2021, which highlighted that the ‘biggest medium to long term risk to the UK’s domestic production comes from climate change and other environmental pressures like soil degradation, water quality and biodiversity’. Under a medium emissions scenario, climate change could reduce BMVAL from a baseline of 38.1% to 11.4% by 2050.

Whilst food production is important, agricultural land in the UK is used for a variety of uses that are not for food production; these include leisure uses, e.g. golf courses or pony paddocks and the cultivation of non-food crops, e.g. pumpkins or flowers, and biofuels.

Total agricultural land in the UK amounts to around 17 million hectares, of which around 6 million ha are cropped¹⁹, and some cropped land is indirectly used for food production; for example, around 40% of wheat and barley produced are used as animal feed, rather than for direct consumption.

According to Government sources²⁰, around 133,000 ha (2.2%) of arable land in the UK was used in 2023 to grow biofuels. Table 5 below sets out the crops grown and land areas required – together with the energy density per ha.

Table 5 – Land area used for energy crops or solar PV

¹⁷ [FactSheet: Solar Farms and Agricultural Land 2024 | Final \(solarenergyuk.org\)](#)

¹⁸ [United Kingdom Food Security Report 2021 - GOV.UK \(www.gov.uk\)](#)

¹⁹ [Defra UK land use statistics 2023](#)

²⁰ [Bio energy crops in England](#)



Crop	Hectares grown	Main use	Energy density (MWh/ha)
Wheat	45,000	Biodiesel	32
Sugar beet	2,600	Biodiesel	4.5- 7.25
Maize	73,000	Anaerobic digestion	10.5
Short rotation coppice	3,800	Wood chip/ pellet	n/a
Miscanthus	8,800	Pellets	43
Solar PV	n/a	Solar PV	480

Solar PV yields more than ten times as much energy per hectare than any crop grown as biofuel.

Using land for solar PV yields significantly more energy per hectare than growing any form of crop for energy without the additional benefits of not releasing additional carbon from the soil during the cultivation process. Ground-mounted solar PV is an efficient way of producing energy from land and requires around 2 ha per MW. If all the 70GW of solar PV the UK needs as part of its decarbonisation needs were on agricultural land (i.e. none on rooftops), this would only require around 140,000 ha – around 0.8% of total agricultural land. Even if all of this was on arable land, it would only amount to around 2.3% of that land (similar to current biofuel production). By comparison, England has over 250,000 ha of golf courses.

The UK could meet all its solar needs by utilising around 60% of the land currently occupied by golf courses. Solar PV does not therefore represent an undue pressure on food production nationally.

The faster that transport and heat are transitioned to an electrical power source, the less the demand will be for biofuels. Conversely, using agricultural land for solar PV could actually reduce pressure to use agricultural land for biofuel production.

There are around 53,000 ha of agricultural land in Cherwell. If 300MW of ground-mounted solar PV were deployed in Cherwell this would require around 600ha of land and represent around 1.1% of all agricultural land area in the district.

Solar PV deployment at the scale discussed in this report does not, therefore, represent an undue pressure on food production, either nationally or within the district. If the UK does face pressure on agricultural land for food production, then there are other things it could do before restricting efficient energy production, such as moving to more plant-based diets or moving to modern methods of farming, such as vertical farming.

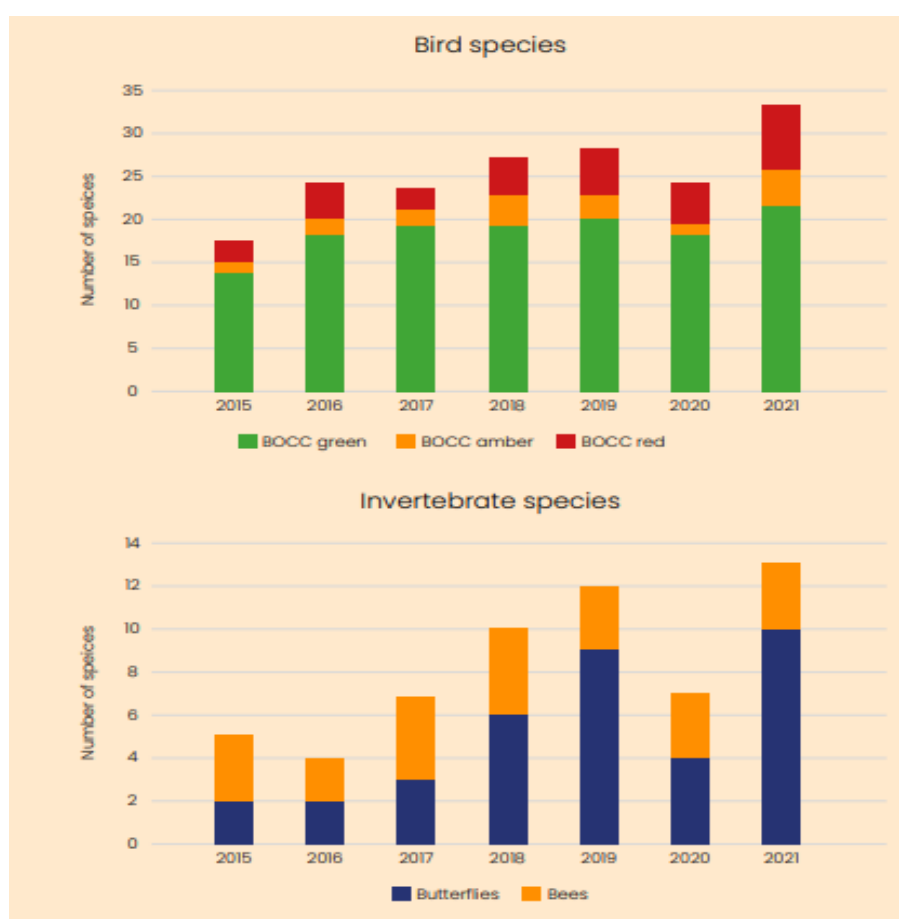
Some land around solar farms is kept in farming use through grazing sheep to manage the grassland around the panels, although this tends to lead to lower biodiversity net gain than growing wildflower meadow.

Some emerging research suggests that agrivoltaic farming (the practice of growing crops underneath solar panels) could become a reality. The potential benefits include reduced water consumption and improved crop protection from extreme weather. However, this practice has yet to be commercially adopted due to potentially significant operational challenges such as protecting plants and equipment from damage (e.g. from vehicles) and ensuring that all personnel on site are familiar with safe working practices in the vicinity of high voltage electrical equipment.

5.6 Impact of solar PV on biodiversity

Solar farms can also provide opportunities to improve natural capital and biodiversity net gain. These are achieved in a variety of ways, including the introduction of species-rich grassland to support pollinators. Figure 9 below is an extract from Solar Energy UK's Natural Capital Best Practice Guidance²¹ and shows study-based increases in butterfly and bee populations across the Sawmills solar farm in Devon.

Figure 9 – Extract from the Solar Energy UK Natural Capital Best Practice Guidance – tracking recorded sightings of species at the solar farm over a seven-year period post construction



Intensive arable farming can be damaging to soil health, and taking fields out of agricultural production for a period allows the soil time to recover.

²¹ [Natural Capital Best Practice Guidance](#)



The landscaping around a solar farm also allows for further habitat improvement, including new tree and hedge planting and, in many instances, the introduction of new wetlands or drying areas. Further information in relation to biodiversity enhancement can be found in Solar Energy UK's (SEUK) Natural Capital Best Practice Guidance.

There is good evidence to suggest that areas of ground-mounted solar PV can be good for biodiversity

5.7 Financial and speed to market considerations

When considering a balance between rooftop and ground-mounted solar PV, the considerations of how fast you can achieve your aim and what it will cost must be carefully considered. It is significantly cheaper and faster to deploy ground-mounted solar PV than rooftop, meaning faster and more cost-effective delivery of Clean Power by 2030 can be achieved if there is a reasonable proportion of ground-mounted solar PV.

The economics of ground-mounted solar PV are insufficient to support the high land values generally associated with sites with prospects for redevelopment for either residential or commercial use.

Capital Costs

Ground-mounted systems' overall size can drive economies of scale, making larger schemes more financially attractive due to the nature of some fixed (or largely fixed) costs such as grid connection, switchgear and CCTV infrastructure. Beyond that, costs are modular and linked directly to the capacity installed.

By contrast, the costs of roof-mounted schemes are higher and very dependent on the extent of scaffolding and structural work required. Similarly, carport installations are expensive when installed in existing car parks due to the need to disrupt the parking surface and the relatively expensive nature of carport structures. Table 6 below sets out typical costs per MW for installation.

Table 6 – typical installation costs for different types of solar system

Type of Installation	Cost per kW	Exclusions
Ground-mounted (20MW+)	£ 520	Grid connection (typically up to £ 100/kW)
Ground mounted (1-3 MW)	£ 850	Grid connection (typically up to £ 100/kW)
Rooftop	£ 875	Scaffolding, upgrades to building electrical system, structural surveys and structural strengthening
Carport (existing car park)	£ 1,500	Grid connection (typically up to £ 100.kW)

The cost of solar schemes varies by a factor of up to 300% depending on where it is located. Large ground-mounted schemes are the most economic form of deployment.

Financial returns on investment

The cost of a system is only part of the consideration in relation to whether or not a scheme is financially viable – with the other part being the value that can be generated by the electricity produced. Large-scale ground-mounted solar systems typically connect directly to the grid and export electricity via a Power Purchase Agreement (PPA) to large suppliers at or around the prevailing rate for wholesale power (for argument's sake, around 8p/kWh).

Any solar system connected directly to a customer via a 'private wire' can potentially charge more for its electricity than a grid-connected scheme because customers pay additional charges for use of the grid network – typically up to 2/3 of any bill. Where the system owner is also the customer, they can also avoid VAT on the electricity payments. This generally benefits smaller rooftop schemes and some small ground-mounted schemes. Private wire PPAs to an external customer should achieve around twice the wholesale price, and a scheme where the customer owns the system might save three times the wholesale price.

Speed of deployment

Speed of deployment is important as carbon released into the atmosphere is cumulative, so carbon savings made in earlier years result in a bigger overall impact than those built out later. When compared with other new energy projects, solar projects are quick to deploy and offer a path to rapid decarbonisation of the energy supply.

Ground-mounted schemes are very fast to build and can connect MWs of power in a matter of weeks. It is significantly faster to build out MWs of power at field scale than it is via individual rooftop projects.

Section Summary – The balance between rooftop and ground-mounted solar

If Cherwell is to make a reasonable and fair contribution to the decarbonisation of the UK's energy system, it will need to deploy both rooftop and ground-mounted solar projects at scale and pace.

The potential for rooftop solar PV is significant, but current industry installation capacity and speed of take up suggest that a target of more than an additional 10MW of rooftop solar by 2030 would be unlikely to be deliverable.

As Cherwell already has around 128MW of solar and rooftop solar could yield a further 10MW by 2030 this would leave a shortfall of between 87MW and 162MW which would need to be ground-mounted. Solar of this scale would represent less than 0.15% of the land area in Cherwell and would therefore not have a material impact on food production.

Ground-mounted solar is more than 10 times as efficient at producing energy per hectare than any other form of biofuel and comes with the added benefit of increased biodiversity.

6 Cherwell District Council contribution and actions

6.1 Introduction

This section will consider the actions that the Council and other public sector bodies in the district can take to increase the deployment of solar PV to achieve the target range whilst also improving energy efficiency in the public estate to reduce demand. Further information on the methodology of public estate energy efficiency can be found in Appendix 3.

6.2 Community Energy

There is strong backing from the new Government for community led development and ownership of solar PV, either on rooftop or ground mounted. Policy support yet to match stated aspirations, but the recognition of the value of local involvement and ownership is clear and we are expecting policy developments as Great British Energy starts to operate. Capturing the financial benefits of renewable energy generation in the local area can boost the local economy and increase local acceptance of solar panels.

The Low Carbon Hub operates in Oxfordshire and presents the Council with opportunities to develop and support community energy development and ownership in the area.

6.3 Planning Policy

At the time of writing, Cherwell's Local Plan is being redrafted. Although it doesn't specifically allocate sites for new solar PV, it does include a criteria-based policy (CSD6), which provides a positive framework for the assessment of future planning proposals for renewable schemes.

Proactive consideration of solar PV at the plan-making stage will enable the Council to have more input into potentially suitable locations and the size and scale of schemes.

6.4 Taking a balanced view

In 2023, the Campaign for the Preservation of Rural England (CPRE) published a study (Shout from the Rooftops²²) produced for them by UCL, setting out the potential for rooftop solar PV in the UK. Broadly, the report concludes that almost all the solar capacity required by the UK could be accommodated on rooftops but went on to concede that this would be both significantly slower and more expensive than taking a balanced approach between rooftop and ground-mounted solar PV.

Carbon emissions into the atmosphere are cumulative, and early action to reduce emissions has a significantly greater impact on overall emissions between now and 2050 than measures which occur later.

The Council needs to balance the impact on the area of ground-mounted solar PV with the improvements to the deliverability and the speed of carbon reduction in its decision-making.

²² [Shout from the rooftops](#)

6.5 Proactive support for small-scale and rooftop solar PV

The Council already has a supportive planning policy in relation to small-scale and community-owned projects, but this could be supplemented with two forms of more direct action:

Introduction of a support programme for domestic solar PV

Appendix 3 sets out how Solar Together²³ has been used by the West of England combined authority to increase the take-up rates for domestic solar PV systems in the able-to-pay market. The scheme (run by partner iChoosr) uses bulk buying to provide quality assurance and drive down costs by aggregating demand for new rooftop systems.

Support rent a roof scheme for public sector and commercial buildings

A key recommendation from our analysis of the energy efficiency in public buildings in Cherwell is the deployment of more roof-mounted solar systems. These provide a cheap source of electricity to the building's occupiers as well as providing income to the system owner.

Appendix 3 sets out the example of West Suffolk Council, who are currently rolling out a programme of rooftop solar PV across the public estate and some commercial occupiers in their area. The scheme works by the Council installing a solar system on the roof of the customer's property and then charging for the sale of electricity through a Power Purchase Agreement. The Council should review whether it could either develop a similar scheme or how it could leverage its trusted position to promote the existing scheme run by the Low Carbon Hub²⁴.

6.6 The role of private wire systems

The term 'private wire' is commonly used to describe a solar system which is directly connected to a customer. Whilst this is common for rooftop systems, it is less common but still useful with some ground-mounted systems.

Appendix 3 sets out the case study of the Lamby Way solar farm in Cardiff – where the Council has installed a 9MW solar farm on a former landfill site. The solar farm exports around two-thirds of its electricity to a local wastewater treatment plant via a private wire. This arrangement has been beneficial to the council in generating a strong income stream and beneficial to the customer (Welsh Water) in providing decarbonised electricity at an affordable and predictable price.

The Council should consider whether it has any opportunities in the area to pursue similar arrangements.

6.7 Demand reduction in public buildings

These findings are based on a detailed analysis undertaken on Display Energy Certificates for all public buildings in the District; more detail and the methodology are presented in Appendix 3.

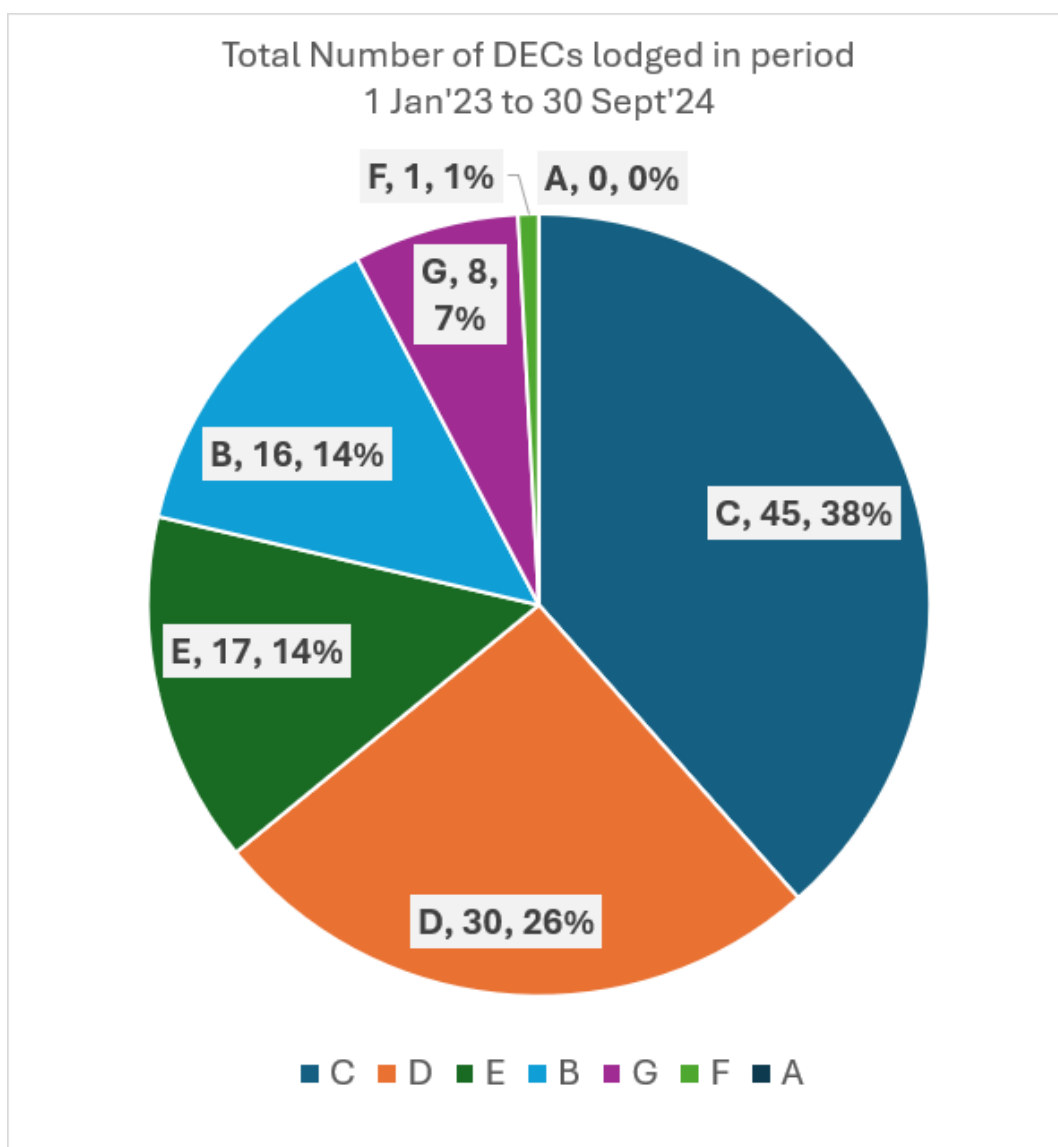
Key findings from the analysis include:

²³ [Solar Together West of England](#)

²⁴ [Low Carbon Hub](#)

1. Only around 4% of the buildings had decarbonised heating and hot water solutions. The vast majority of the other buildings analysed were heated by mains gas, with a handful relying on LPG or oil.
2. Of the 117 buildings analysed, 19% generate electricity from solar PV. A priority recommendation of the advisory reports reviewed was the installation of solar PV (and, in many cases, solar thermal).
3. The energy performance rating of public buildings in Cherwell is in line with national averages, however, around 22% of buildings fall in the very poor ratings F and G (Fig 10) and further analysis suggests that very few improvements have been made to any of the buildings over the last decade.

Figure 10 energy performance ratings for public buildings in Cherwell



The Council should work with other public sector bodies in the area to improve the energy performance of the public estate – with particular emphasis on a transition to low carbon heat sources, improving the energy efficiency of the worst performing buildings (22%) and installation of solar PV.



Cherwell District Council – options for action

In addition to the development of appropriate and supportive planning policy for both rooftop and ground mounted solar PV the Council could take the following proactive steps to try to speed deployment of solar PV in the district and reduce demand for power. These steps include:

- Development of appropriate planning policy

- Maintaining a balanced view on the overall need for solar PV and that this will mean both new rooftop and new ground-mounted systems in the district

- Support to new rooftop schemes either through rent a roof or bulk buying models

- Review and identification of any opportunities to develop new solar capacity directly wired to a customer

7 Conclusions and Next Steps

7.1 Conclusions

The UK needs to install more solar PV in the five years to 2030 than it has in the fifteen years since 2010. The Council recognises the need for additional solar PV capacity in its area and has commissioned this report to understand what a reasonable locally defined contribution to the UK's solar PV generation might be.

In setting the locally defined contribution, the Council has considered the following factors:

1. The overall proportion of the UK's target, which it would be reasonable for Cherwell to accept.
2. That two ranges are necessary - the first is a range for 2030 to align with Government policy on Clean Power, which largely supports decarbonisation of the existing electricity supply. The second is a longer-term 2050 target, which underpins the transition of heat and transport from fossil fuels.
3. The Council would like to see as much of the required solar PV as possible deployed on rooftops to manage the pressure on land supply in the area.
4. The Council recognises that there is a balance to be struck between early delivery of carbon savings, cost and achieving a higher rate of rooftop deployment.

7.2 Locally defined contribution

Setting a locally defined contribution allows Cherwell to assess what is fair for them in a local context and what can be delivered within the timescale.

This report recommends that Cherwell Council accepts the following as locally determined contributions to the UK solar PV target:

- **2030 - between 225-300 MW**
- **2050 - between 650 MW and 1GW**

7.3 Current deployment and progress against the 2030 target

The current deployment of solar PV in the District is around 90 MW, of which 6.65 MW is currently rooftop solar.

This represents around 40% of what is reasonably necessary by 2030, and even achieving the lower end of the range will require a fourfold increase in the speed of deployment. As early deployment is beneficial in securing less carbon emissions, then any over-achievement by 2030 should be viewed as a bonus.

7.4 Balancing rooftop and ground-mounted solar PV

Currently, around 5% of solar PV in the District is roof-mounted, and the average deployment rate over the last decade has been around 475 kW pa. The Solar Together example shows that this can potentially be increased over the coming years but that it is



highly unlikely to achieve all of the additional 100 MW+ required by 2030, so additional ground-mounted solar PV will be required.

When the national rate of deployment of rooftop solar systems is taken into account, an aggressive target for rooftop PV by 2030 would be 17MW (of which nearly 7MW is already deployed).

This would leave a balancing target for ground-mounted solar PV of at least an additional 125 MW by 2030.

7.5 Actions the Council should prioritise

Beyond agreeing this strategy and adopting a locally determined contribution, the Council can undertake the following proactive measures which will speed up decarbonisation, increase the speed of deployment of solar PV and reduce the overall demand for electricity across the District:

7. Accept that a reasonable contribution for solar PV in Cherwell by 2030 is between 225MW and 300MW. This range will require new ground-mounted solar systems, but not to the extent that they threaten food security.
8. Recognise the need to significantly increase the speed of deployment and use planning policy and proactive measures to promote more rapid deployment of solar PV in the district.
9. Develop a balanced approach to accepting both rooftop and ground-mounted solar PV, recognising the significant benefits of scale, pace, and biodiversity gains the latter can bring.
10. Focus on decarbonising all public sector estate in Cherwell and lead by example with the Council's buildings. This can be supplemented with measures to support other public sector bodies in their energy efficiency programmes and deployment of solar PV.
11. Community energy has the potential to deliver significant long-term benefits to local communities within the district, including reduced energy bills and increased energy sustainability and security. The Council should continue to support renewable energy developments that are genuinely led by or meet the needs of local communities within the district.
12. Review this document when the LAEP is received and revise estimates around the speed of deployment and overall energy consumption/ need for solar in the district.

Appendix 1 – Assumptions for calculation of energy need in Cherwell

Area wide emissions factors have been used as the basis of our analysis and we have then converted the emissions from oil and gas into an equivalent electrical consumption. Our assumptions in doing this are set out below:

To understand the total electricity demand for the district, it is necessary to first understand both the existing fuel sources and how these will need to change over time to achieve net zero.

Currently, around 27% of district emissions are produced from burning gas and oil, with a further 46% of emissions coming from transport. If Cherwell is to become net zero, then these energy demands will need to be met from carbon-free fuels.

In making our assessments, we have made the following high-level assumptions:

1. The replacement low-carbon fuel will be electricity for all uses. Even if this is not wholly correct, the other replacement is likely to be hydrogen, which will require carbon-neutral electricity in its production. Any functions which are fuelled by hydrogen are likely to be a very small proportion of the Cherwell emissions.
2. The Gas and Oil (other than the Industry 'other') category is largely burned for heating, and this will be replaced with heat pumps. This assumption then accounts for the greater efficiency (in kWh) of heat pumps when compared with burning gas (3:1 efficiency improvement).
3. We have assumed Gas (Industry 'other') is part of industrial processes and will be at a 1:1 conversion rate on kWh. As gas for heating is accounted for under another heading, this is likely to be fuel burned directly as part of a manufacturing process, and we cannot, therefore, assume that there will be a correlating efficiency saving by converting to electricity.
4. Transport emissions have assumed a split between cars, vans and HGVs. For this exercise, we have assumed it is consistent across all road networks. We have allowed for the greater efficiency of electric vehicles in calculating the necessary kWh.
5. We have not included emissions from diesel trains as we have been unable to find suitable data sets for conversion. These represent around 1.8% of power demand in the district.

Appendix 2 – Grid Connections in Cherwell

Understanding of the current grid status within the Cherwell

One of the major barriers to the expansion of solar power are difficulties in securing grid connections (in part because of a lack of grid capacity). To supply power to consumers, energy generators need to be connected to either the transmission or the distribution network, or directly to the customer. This requires approval from Distribution Network Operators (DNOs), National Grid or both. Understanding the current grid status within the Cherwell district is therefore essential for effective strategy development and planning.

Cherwell is served by two DNOs, Scottish and Southern Electricity Networks (SSEN) and National Grid Electricity Distribution (NGED). This section provides an overview of the district's electricity infrastructure, focusing on the role of the two DNOs and explores the existing network conditions and constraints. Engagement discussions with both DNOs have been crucial to understanding their respective network capacities, constraints, and future development plans.

The split of Cherwell's district occurs geographically, with the northern parts of the district primarily served by SSEN and the southern regions by NGED. This division has implications for the district's energy infrastructure and planning, as each DNO operates under different frameworks and capabilities.

SSEN: Current Grid Status



Figure 11 – Cherwell district DNO split



The grid's capacity to handle electricity generation, including from renewable sources like solar, is influenced by several factors. SSEN has been working to enhance the network's flexibility and resilience to accommodate the increasing integration of distributed generation, such as solar panels on homes and businesses. However, the grid's capacity is not unlimited, and there are several existing limitations and constraints.

One key constraint is the thermal capacity of the network, which refers to the maximum amount of electricity that the cables and transformers can carry without overheating. In some areas of Cherwell, the network is nearing its thermal limits, especially in parts where there is already significant distributed generation or high demand. This can limit the ability to connect new renewable generation sources without upgrades to the infrastructure.

Another limitation is related to voltage management. The introduction of large amounts of distributed generation, particularly from intermittent renewable sources like solar, can cause fluctuations in voltage levels, which can affect the stability and reliability of the grid. SSEN has implemented some voltage control technologies, but in areas where the grid is weaker, this remains a challenge.

Finally, grid congestion is a concern, where the existing infrastructure may not be able to transport all the generated electricity to where it is needed, particularly during peak generation periods (e.g., sunny days with high solar output and strong wind). This can lead to constraints on connecting new renewable energy projects unless significant network reinforcements are made.

Overall, while the SSEN grid in Cherwell is capable of supporting some further renewable generation, there are capacity constraints and technical limitations that must be addressed to fully unlock the potential for increased solar and other renewable energy installations. These challenges highlight the need for ongoing investment in grid infrastructure and innovative solutions to manage the evolving demands of a more decentralized energy system.

Bicester North Bulk Supply point

This Bulk Supply Point (BSP), which steps down 132kV lines to either 33kV or 66kV, faces constraints both upstream and downstream. In electrical distribution, upstream and downstream refers to "Incoming" and "outgoing" circuit breakers. At the time of writing this report Bicester North BSP had 108.11 MVA of contracted generation and 39.105 MVA of quoted generation and is also constrained by a 132kV thermal limitation under Fault Current Overload (FCO).

The BSP supplies three substations: Bicester, Cottisford, and Upper Heyford.

Bicester: This substation is constrained both upstream and downstream. It has a transformer rated at 60 MVA, with 33.51 MVA of contracted generation and 50% reverse power flow capacity. It is also affected by upstream thermal limitations.

Upper Heyford: Upper Heyford is constrained both upstream and downstream. Its transformer is rated at 15 MVA, with 5.82 MVA of contracted generation and 50% reverse power flow capacity. The substation is also limited by upstream thermal constraints and has limited physical space for expansion, particularly for circuit breaker connections.

Cottisford: Cottisford is constrained upstream but unconstrained downstream. The transformer here is rated at 2.5 MVA, with no connected generation and 50% reverse

power flow capacity. Like the others, it faces upstream constraints due to thermal limitations.

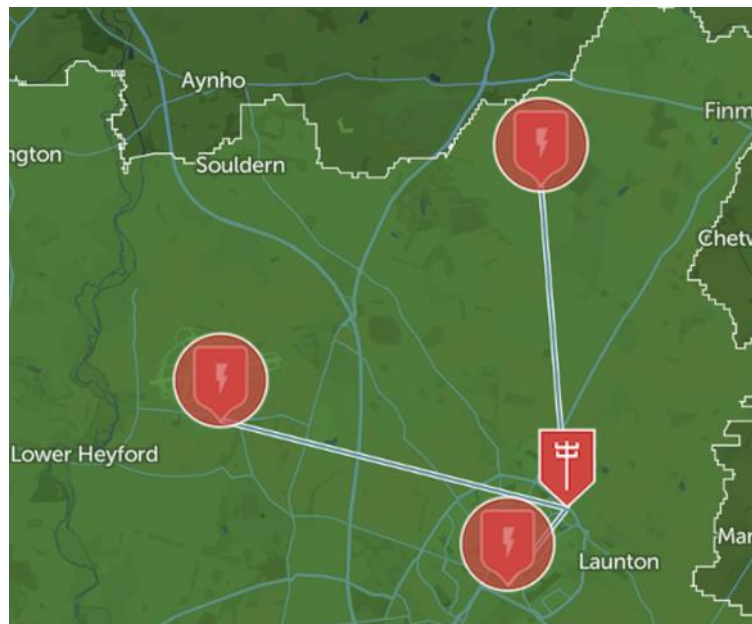


Figure 12 – Bicester North Bulk Supply point

Headington North Bulk Supply point

The Headington Bulk Supply Point feeds the Arccott substation, located in the southern part of the Cherwell district. The Arccott substation faces upstream constraints due to voltage and thermal limitations, but it remains unconstrained downstream. The transformer at this substation is rated at 15 MVA, with 12.2 MVA of contracted generation connected.

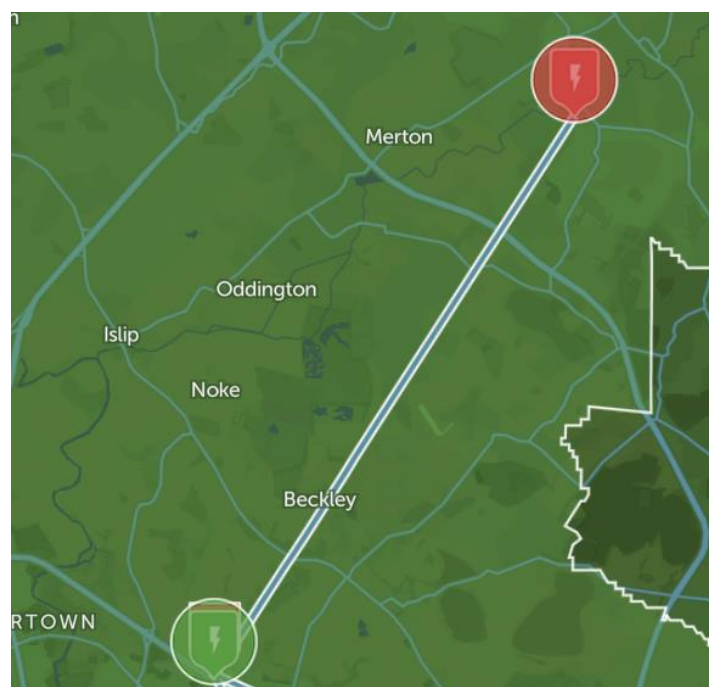


Figure 13 – Headington North Bulk Supply point



NGED: Current Grid Status

NGED's grid network has been progressively upgraded to enhance its capacity to handle distributed generation, particularly from renewable sources such as solar. This includes the implementation of smart grid technologies, which allow for better monitoring and management of the grid, enabling it to integrate more renewable energy sources. However, the capacity to connect new renewable generation varies by location within the Cherwell district. In some areas, there is available capacity for additional solar generation, while in others, the grid may be approaching its limits.

Similar to the SSEN area, one of the primary constraints is the thermal capacity of the network. As the amount of electricity generated by solar and other renewables increases, the grid infrastructure must be capable of carrying this additional load without overheating. In parts of the district, the thermal capacity is close to being fully utilised, which can restrict the connection of new generation sources unless upgrades are made.

High deployment of solar power can lead to voltage fluctuations, particularly during periods of high generation and low demand (e.g., sunny days with little electricity consumption). NGED has implemented various voltage control measures, such as automatic voltage regulators and reactive power management systems, but voltage stability remains a challenge in areas with high levels of distributed generation.

Grid congestion occurs when the existing infrastructure is unable to transport all the generated electricity to where it is needed, particularly during peak generation times. This is a significant issue in regions with extensive solar installations, as the grid was originally designed to handle power flow from large, centralised power plants rather than many smaller, distributed generators.

In areas where the grid is already heavily utilised, there are connection constraints that can delay or limit the ability to connect new solar projects. Developers in these areas may need to wait for network upgrades and may be required to fund part of the upgrade costs, which can be a barrier to expanding renewable energy capacity.

NGED has invested in the Worcester and Banbury areas through their Extra High Voltage (EHV) Reinforcement project. This project involved the installation of a new 66 kV cable between primary substations, impacting 30,000 customers. The project provided significant benefits, including improved network resilience and reinforcement, benefiting both the local area and the wider community. The total project cost was £5 million, and it was completed in 2022.

Epwell 66/11kV Substation

The Epwell substation, a primary station located in the northwest part of the Cherwell district, is situated within an Active Network Management (ANM) Zone which means that connections within this zone may be offered a more cost-effective solution through ANM, potentially eliminating the need for network reinforcement. An ANM system continually monitors all the constraints on an area of the network, in real-time, and allocates the maximum amount of capacity available to customers in that area based on the date their connection was accepted.

This substation is heavily constrained, with a reverse power headroom of -2.12 MVA. It has a reverse power capability of 7.23 MVA, but with 12.08 MVA of connected generation, the amount of electricity being fed back into the substation exceeds its ability

to manage or safely handle reverse power flow. This excess generation is primarily from local sources like solar farms, wind turbines, or other distributed energy resources, which can push power back from the distribution network into the transmission network or even further upstream.

Additionally, the substation has accepted 0.04 MVA of generation that is yet to be connected, with an additional 0.16 MVA offered but not yet accepted.

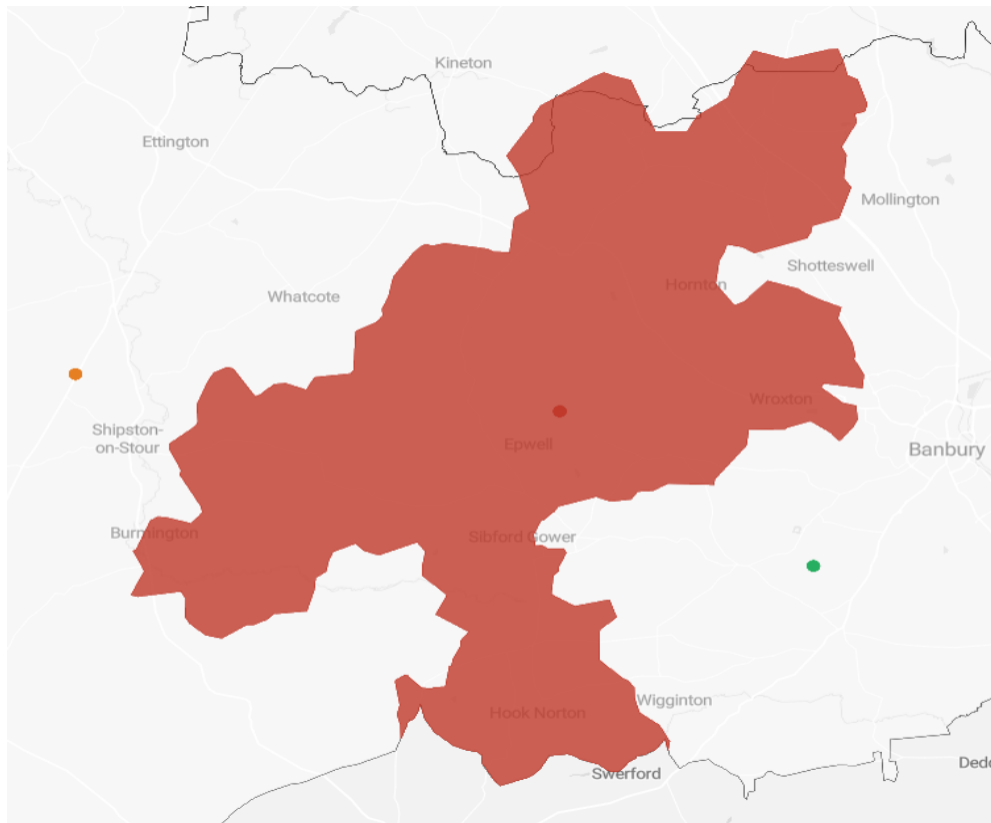


Figure 14 – Epwell 66/11 kV Substation area

Bloxham 66/11kV Substation

The Bloxham substation, a primary station located in the northern part of the Cherwell District, is also within an ANM Zone.

This substation is not constrained, with a demand headroom of 7.35 MVA and a reverse power headroom of 2.18 MVA. It has a reverse power capability of 4.6 MVA, with only 3.31 MVA of connected generation. Additionally, 0.06 MVA of generation has been accepted but is not yet connected.

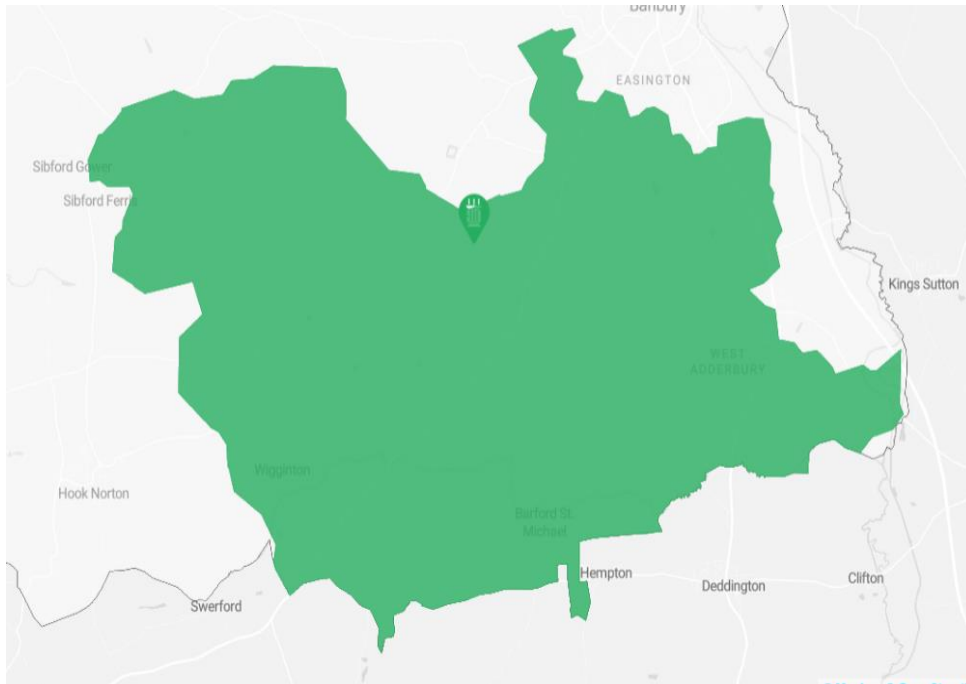


Figure 15 – Bloxham 66/11 kV Substation

Engagement discussions with both DNOs have been crucial to understanding their respective network capacities, constraints, and future development plans.

Available capacity for connections to the distribution networks

Both the SSEN and NGED networks are congested, and further connections (which have not already been contracted) are not currently available, and connection dates extend to 2030 and beyond.

Table 7 below sets out the available and connected capacity in each of the substations in the area:

Table 7 – Substation capacity in Cherwell

DNO	Substation	Generation Capacity (MVA)	Contracted Capacity (MVA)	Available
SSE	Cottisford	1.25	0	Nil (due to constraint at BSP)
SSE	Upper Heyford	7.5	5.82	Nil (due to constraint at BSP)
SSE	Bicester	30	33.51	Nil
SSE	Bicester North BSP	-	108.11	Nil
SSE	Arncott	7.5	12.2	Nil
SSE	Headington	20	3.6	Nil (due to constraint at the BSP)
SSE	Headington BSP	-	76.26	Nil
NGED	Epwell	7.23	12.12	Nil
NGED	Bloxham	4.6	3.37	1.23

The West Midlands licence area

The West Midlands license area, which Cherwell falls within, has historically experienced relatively low levels of large-scale solar PV deployment compared to neighbouring regions, with 563 MW of capacity currently connected to the network²⁵. In recent years, deployment has slowed, but there is renewed interest from developers, as evidenced by the 129 sites totalling 4.4 GW in various stages of development. This surge in pipeline projects is notably high compared to previous levels, highlighting a growing focus on developing solar projects in regions of the UK that have seen less activity in the past.

SSEN

Although the growth in installed solar capacity has slowed since 2018, the region still has a strong pipeline of projects totalling 5.6 GW. These projects are either in the process of accepting connection offers or are in the quoting stage. As of August 2023, 32% of this capacity is operational, under construction, or has received planning approval.

SSE is also enhancing the electrical infrastructure in this area, including the Cherwell district, through the Witney Green Recovery Project. This £5 million investment in Witney, Oxfordshire, will benefit surrounding areas, including Cherwell, by supporting the transition to low-carbon technologies with an additional 14.2 MW of capacity.

Operational PV schemes

Operational schemes and those awaiting or under construction in Cherwell are set out in table 8 below.

Table 8 – Solar project developments in Cherwell

Site Name	Development Status	Size (MW)
Land South West Of Apollo Business Park	Operational (2014)	1.7
Epwell Grounds Farm solar park	Operational (2014)	7
North Of Field Barn	Operational (2014)	1
Rickfield Farm solar park	Operational (2014)	1
Hill Farm	Operational (2017)	5
Shelswell Park Solar Farm	Operational (2013)	5
The Flit	Operational (2015)	10.5
Rowles Farm solar park	Operational (2015)	13
Brooks Farm Solar Park	Operational (2015)	8
Home Farm (Merton - solar)	Operational (2013)	18.3
New Stone House	Operational (2015)	12.5
Tesco Superstore Bicester	Under Construction	0.6
Leadenporch Farm	Awaiting Construction	0.5
Land North of Hill Farm	Awaiting Construction	8.9
H M Prison Leyhill, Tortworth	Awaiting Construction	0.2
British Bakels, Granville Way	Awaiting Construction	0.8
Bicester Park, Charbridge Lane	Awaiting Construction	0.3
Bicester Avenue Garden Centre, Oxford Road	Awaiting Construction	0.6
Brook Farm	Awaiting Construction	25
Essentra Components, Langford Lane	Awaiting Construction	1.2

²⁵ [654888 \(nationalgrid.co.uk\)](https://nationalgrid.co.uk/654888)

Appendix 3 - Existing initiatives in Oxfordshire and case studies from other areas

Project LEO (Local Energy Oxfordshire)

Oxfordshire is in the enviable position of hosting two national demonstrator projects:

- Project LEO – wide ranging and innovative energy trials – seeking to accelerate the UK’s transition to a zero-carbon energy system
- Energy Superhub Oxford – an ambitious urban decarbonisation project, pioneering and integrated approach to decarbonising power, transport and heat to help Oxford reach net zero by 2040.

Over the four years to 2023, Project LEO integrated a range of local technical trials (e.g integration of solar and hydro installations, low-carbon heating, and flexibility aggregation platforms) with “smart and fair neighbourhood” projects that focused on community engagement and involvement and focussed on three key areas:

- Creating a viable commercial marketplace for trading energy flexibly.
- Test how energy systems and networks need to adapt to make the most of the flexibility and make them ready for the transition to a Smart Local Energy Systems.
- Working with communities to see how households, businesses and local institutions could benefit from energy flexibility.

Important messages for policymakers

The final report published in February 2023²⁶, identifies thirteen key messages for policymakers to support the transition to Net Zero, but highlights five of these as the most important. These are set out in Table 9.

Table 9 – Project LEO five most important messages for policymakers

Key Message	Commentary
Local Area Energy Plans are vital to achieving Net Zero	Project LEO has shown how collaborative, Local Area Energy Planning is necessary to get to Net Zero and recommends the development of a body to create the required planning and toolkits and offer advice and guidance for Local Authorities.
Aggregators in the broadest sense are key to enabling flexibility systems	The report finds that aggregators are essential for plugging the specialist expertise gap enabling flexibility providers who are not ‘energy experts’ to create Smart and Fair Neighbourhoods, flex at the grid edge and organising many Distributed Energy Resources.
Optimisation behind the secondary substation brings a wide range of benefits	Project LEO showed that there is significant potential associated with optimising energy systems at the local level, rather than relying primarily on the Transmission network to import and export power.

²⁶ [Project LEO Final Report: A digest of key learnings - Project LEO \(project-leo.co.uk\)](https://project-leo.co.uk/)



Investment in data and digital is key to enabling efficient and smarter local area networks.	Project LEO has shown that strategic investment in the network can deliver significant benefits for the energy network and local communities and this investment is essential to meet Net Zero timelines. However, it needs to be justified on the basis of robust data, mapping and planning processes.
Innovation funding is improving but must adapt to help deliver Net Zero	Funding for innovation projects (capital and revenue R&D) must become more flexible to encourage cross-sectoral investment to accelerate, at scale, real-world innovation that delivers a benchmark for rapid change to deliver Net Zero ambitions.

Case study examples

Kings Hill Solar Farm, Kent County Council

The 3 MW, 12 acre Kings Hill Solar Farm, owned by Kent County Council and is forecast to generate 3 GWh of renewable electricity each year, enough to power 750 homes and avoiding 621 tCO₂e pa and reducing Kent County Council's electricity bills. The construction cost was £5m with revenue estimated at £13m over the lifetime of the farm.

The solar farm will be removed following its 30 year operational life, with the aim that the land will become a nature reserve. On site mitigation includes tree planting, a new wildflower meadow, bat and bird boxes and winter shelter areas for animals.

Lamby Way solar farm Cardiff Council

The solar farm comprises 9MW of panels surface mounted on a closed and capped landfill site. The scheme connects 3 MW of capacity for direct grid export, 3MW of directly connected to a waste-water treatment plant (WWTP) approximately 2km from the site and the remaining 3 MW can be switched between export and the WWTP.

The scheme returned over £ 0.5m of profit in excess of the business case in its first year of operation due to the sharp increase in energy prices following the invasion of Ukraine.

Solar schools and community buildings in North Lincolnshire

North Lincolnshire Community Energy (NLCE) installed 1.4 MW of panels on 14 schools and colleges, a community hub, a museum and a community council building, generating 1.1 GWh pa and saving 68 tCO₂e pa. NLCE raised £576,000 through a community share offer, which has saved £100,000 in electricity costs since the project began in 2023.

Alongside the financial and environmental benefits NLCE, North Lincolnshire Council and the installer Joju ran a series of workshops at schools and , and free, interactive community events showcasing the benefits of solar and sustainability.

Solar Together West of England

Solar Together West of England (covering four councils: Bath and North East Somerset, Bristol, North Somerset and South Gloucestershire) has installed around 120 individual systems to resident's properties since its first round in 2021. In two rounds a total of 6.5 MW solar PV has been installed saving an estimated 33,000 tCO₂e over 25 years.



Solar Together is a group buying scheme that helps to reduce the costs for residents in local authority areas. The scheme is usually established locally using a concession agreement between the local authority and iChoosr, which runs the scheme. Local authorities using the scheme work with the company to promote the scheme to residents and eligible small and medium sized businesses and once enough have signed up a reverse auction is held where the collective buying power is used to appoint the lowest priced supplier. All installers are pre-vetted and must comply with iChoosr's criteria to guarantee quality. Participating residents will pay the installer directly, with iChoosr providing scheme oversight.

The West of England group buying approach resulted in a 22% discount in Round 1 (2021) and a 34% discount in Round 2 (2023) based on the typical market price for an average 14 panel system at the time. In addition to the solar panels, the West of England scheme also offers optional battery storage and electric vehicle charge points.

Appendix 3 – Public Sector estate methodology

DEC Background

In the UK, DEC's have been stored in a central database since the implementation of the Energy Performance of Buildings Directive²⁷ in 2008. A DEC and Advisory Report are required for buildings with a total useful floor area over 250m² that are occupied, in whole or part, by public authorities and frequently visited by the public. There is a key requirement within the Directive for certificates to be lodged on an annual basis (for buildings over 1000m²). This means that empirical data on the energy performance of public sector, non-domestic buildings, has been collected regularly over the course of the last fourteen years.

A DEC shows the energy performance of a building based on actual energy consumption, as recorded over the last 12 months, within the validity period of the DEC (the operational rating). The operational rating is a numerical indicator of the actual annual carbon dioxide emissions from the building. The various types of energy consumption, from occupying a building, must be brought together on a common basis so that the performance of one building can be compared with that of another. The UK has decided that the common unit should be CO₂ emissions, since this is a key driver for energy policy.

This rating is shown on a scale from A to G, where A is the lowest CO₂ emissions (best), and G is the highest CO₂ emissions (worst). DEC's for buildings larger than 1,000m² also show the operational ratings for the previous 2 years, where available.

The operational rating is based on the amount of energy consumed during the occupation of the building, over a period of 12 months. This information is taken from meter readings and is compared to a hypothetical building with performance equal to one typical of its type (the benchmark). Typical performance for that type of building would have an operational rating of 100. A building that resulted in zero CO₂ emissions would have an operational rating of zero, and a building that resulted in twice the typical CO₂ emissions would have an operational rating of 200. If the building is a net energy generator, it would still be given an operational rating of zero.

The operational rating must be calculated according to the methodology²⁸ approved by the Secretary of State. This is done by an accredited energy assessor using a software tool for the calculation which has been approved by the Secretary of State.

A DEC must be accompanied by an advisory report and the owner of the building must have a valid report available (see time frame below). The advisory report highlights recommendations to improve the energy performance of the building (i.e. its fabric and associated services such as heating, ventilation and lighting).

Where the building has a total useful floor area of more than 1,000m², the DEC is valid for 12 months. The accompanying advisory report is valid for 7 years. Where the building has a total useful floor area of between 250m² and 1000m², the DEC and advisory report are valid for 10 years.

²⁷ [Energy Performance of Buildings Regulations 2008: circular 06/2008 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/circular-economy/circular-06-2008)

²⁸ [Government methodology for producing operational ratings, display energy certificates and advisory reports](#)

Local Partnerships DEC analysis approach

Our approach to the analysis involved use of the open DEC data published on the Governments Energy Performance of Buildings Register²⁹ to derive the current energy performance of the public sector buildings within the Cherwell district area.

DEC certificate data was obtained from the Open Data Communities website where the Department of Levelling Up, Housing and Communities (DLUHC) have published all DEC records lodged from January 2008. The records were filtered to ensure that only those buildings located within the Cherwell district area were included. This dataset comprised 117 buildings (or sites).

The advantages of using the most recent annual lodgement period are as follows:

- DECs submitted should include the benefit of Public Sector Decarbonisation Scheme (PSDS) Phase 1 – 3b delivery. As part of Phase 1 the Council upgraded 8 of its sites, including its 4 main leisure centres. Air source heat pumps, solar panels with battery storage, LED lighting and a solar thermal system were installed across the sites. Insulation across the buildings was also improved.

We understand from the Council's Climate Change Action Plan 2023 – 2024³⁰ that other corporate sites have received investments too, and further work is planned to expand the amount of solar PV across the corporate estate.

- DECs submitted should also include the benefit of energy efficiency improvements post COVID-19.
- Using the most recent data should provide an understanding of:
 - Where the public sector estate in the Cherwell district is currently positioned in relation to net zero.
 - Identification of the requirements needed to reach net zero.

The public estate, within the Cherwell district area, supports the delivery of public services using a diverse range of properties. To aid comparison of performance across the whole estate, buildings were split into the following sectors:

- Blue Light
- Heath and Care
- Retail and Hospitality
- Schools
- Universities
- Other (which includes workshops and storage facilities)

Please note that there were no DECs lodged in the period from the Local Authority Office sector. Table 10 (p49) below shows the number of buildings (or sites) and floor area within the 117 DEC sample, grouped by sector.

²⁹ [Energy Performance of Buildings Search Results \(opendatacommunities.org\)](https://www.opendatacommunities.org/buildings-search)

³⁰ [Cherwell District Council Action Plan 2023 24.pdf](#)

Table 10 – Number and floor area of buildings (or sites) within the DEC sample grouped by sector

Sector Category	Number of Buildings	% of All Buildings	Total Floor Area (m ²)	% of All Floor Area
Blue Light	1	0.85%	3,499	1.22%
Health and Care	6	5.13%	34,454	12.19%
Leisure and Culture	13	11.11%	32,484	11.49%
Schools	79	67.52%	171,806	60.78%
Universities	7	5.98%	14,267	5.05%
Other	11	9.40%	26,191	9.27%
Total	117	100.00%	282,654	100.00%

Once filtered and downloaded, the data set contains a series of numeric variables which were then used to complete the analysis presented in this report. Key numeric variables are summarised in Table 11.

Table 11 – Key numeric variables used in the analysis

Numeric Variable	Comment
ANNUAL_ELECTRICAL_FUEL_USAGE	Used to calculate the total kWh of electricity used in each building.
ANNUAL_THERMAL_FUEL_USAGE	Used to calculate the total kWh of thermal used in each building.
MAIN_BENCHMARK	Used to categorise building types into sectors.
MAIN_HEATING_FUEL	Used to calculate the number of buildings using different fuel types (e.g. mains gas, LPG, oil etc).
OPERATIONAL_RATING_BAND	Used to calculate the distribution of DEC's by Energy Performance Operational Ratings.
RENEWABLES_ELECTRICAL	Used to calculate the number of buildings that use on site renewable sources for electricity.
RENEWABLES_FUEL_THERMAL	Used to calculate the number of buildings that use on site renewable sources for heating.
TOTAL_FLOOR_AREA	Used to calculate the total floor area for different sector categories.

Key Findings and Conclusions

Heating fuel type analysis

Table 12 below shows the fuel type used by the 117 buildings for which DEC's were lodged. Of these buildings, 5 (4.27%) already used decarbonised heating and hot water solutions. This is broken down as follows:

- Biomass – 1 (0.85%) building
- District Heating – 1 (0.85%) building
- Mains Electricity – 3 (2.56%) buildings

There are no buildings that use coal, anthracite or bio gas for their heating. 109 (93.16%) of the buildings are heated by mains gas. There is 1 (0.85%) LPG building and 2 (1.71%) buildings which use oil to fuel their heating systems. Achieving net zero will therefore require almost 96% of public sector buildings within the Cherwell district area to transition to low carbon heating.

Table 12 – Heating fuel type analysis

Fuel Type	Number of Buildings	% of Buildings
Biomass	1	0.85%
District Heating	1	0.85%
Electric Heating	3	2.56%
LPG	1	0.85%
Oil	2	1.71%
Mains Gas	109	93.16%
Total	117	100.00%

On Site Renewable Sources

DECs also contain information relating to energy obtained from On Site Renewable (OSR) sources for both heating and for electricity. OSR include technologies that generate heat or electricity from ambient sources and have zero (or near zero) CO₂ emissions. Where a building makes use of OSR to provide electricity or heat for use in the building, the DEC acknowledges how these have contributed towards reducing the carbon dioxide emissions of the building (on a % basis).

There are a number of technologies that can be used to provide heat for a building, emitting low or no net CO₂ emissions.

- Solar hot water
- Air source heat pumps
- Ground source heat pump
- Biomass heating
- Solar photovoltaics (PV)
- Wind turbines

DECs do not provide technology granularity regarding OSR therefore our working assumption is that heat pumps are a Low and Zero Carbon (LZC) technology and not renewables. Therefore, the only feasible renewables on a built estate is likely to be solar PV.

Of the 117 DECs lodged, 22 (18.80%) of the buildings use OSR for electricity. There are no buildings currently using OSR for thermal purposes.

Advisory Reports

The advisory report which accompanies the DEC contains recommendations for improving the energy performance of the building. The advisory report may contain a range of possible improvements, including cost effective measures that may be implemented to improve the energy performance of the property. The report includes zero and low cost operational and management improvements, possible upgrades to the



building fabric or services, and opportunities for the installation of low and zero carbon (LZC) technologies.

The report enables the occupier to identify what may be done to improve, for example, building energy management, building services, etc. therefore reducing energy consumption and CO₂ emissions. The advisory report categorises the list of recommendations, by payback period as follows:

- Short term payback (up to 3 years), for example building energy management measures.
- Medium term payback (3 to 7 years), for example upgrading building services.
- Long term payback (more than 7 years), for example low and zero carbon technologies.

Each category includes the energy assessor's selection of the most suitable improvement measures for the building, generally between 5 and 10 measures. The advisory report also includes the energy assessor's recommendations, which may include additional improvement measures, for example measures recommended by a previous energy audit.

The advice provided in the advisory report is intended to be for information only. Occupiers receiving an advisory report are advised to seek further detailed professional advice before reaching any decision on how to improve the energy performance of the building.

Of the 117 DEC's lodged, 26 of the buildings had accompanying advisory reports. A total of 359 individual recommendations (an average of 13.8 recommendations per advisory report) across 62 different recommendations. The 26 buildings that have accompanying advisory reports are:

- B BLOCK, BANBURY CAMPUS, Broughton Road OX16 9QA
- B BLOCK, The Warriner School, Bloxham OX15 4LJ
- Banbury Library, Marlborough Road OX16 5DB
- Banbury Museum Heritage Centre, Cafe Quay, Spiceball Park Road OX16 2PQ
- Bicester Day Centre, Launton Road OX26 6DJ
- Bishop Carpenter C of E Primary School, School Lane, North Newington OX15 6AQ
- Brookside Primary School, Bucknell Road OX26 2DB
- Cropredy C of E School, Station Road, Cropredy OX17 1PU
- D BLOCK, The Warriner School, Bloxham OX15 4LJ
- Elms Clinic, Oxford Road OX16 9AL
- Fritwell C of E School, East Street, Fritwell OX27 7PX
- Hanwell Fields Community School, Rotary Way OX16 1ER
- Hook Norton C of E Primary School, Sibford Road, Hook Norton OX15 5JS
- Horton General Hospital, Oxford Road OX16 9AL
- HUMANITIES BLOCK, The Warriner School, Bloxham OX15 4LJ
- Kidlington & Gosford Leisure Centre, Oxford Road OX5 2NU
- Longford Park Community Centre, Hobby Road OX15 4GJ
- Maternity Unit, Horton General Hospital, Oxford Road OX16 9AL
- MATHS BLOCK (NEW), The Warriner School, Bloxham OX15 4LJ
- Ruscote Community Hall, Ruscote Arcade, Longelandes Way OX16 1PH
- St Marys Catholic Primary School, Queens Avenue OX26 2NX

- St. Thomas More RC School, Oxford Road OX5 1EA
- Thames Valley Police, Banbury Police Station, Warwick Road OX16 2AE
- The Grange CP School, Avocet Way, Banbury OX16 9YA
- Unit 2, 9, Castle Quay OX16 5UH
- William Morris Cp School, Bretch Hill OX16 0UZ

Whilst there are a variety of recommendations provided, Table 13, illustrates 8 priority advisory report recommendations on potential energy saving measures which account for 35.7% of the total recommendations. In total there were 39 (10.9%) recommendations which did not have an assigned recommendation code

Table 13 – Priority advisory report recommendations from the 26 buildings which had accompanying advisory reports.

No	Priority Recommendation	Frequency
1	Consider installing building mounted photovoltaic electricity generating panels.	20 buildings
2	Consider implementing regular inspections of the building fabric to check on the condition of insulation and sealing measures and removal of accidental ventilation paths.	19 buildings
3	Engage experts to review the building lighting strategies and propose alterations and/or upgrades to daylighting provisions, luminaires and their control systems and an implementation plan.	17 buildings
4	Consider installing automated controls and monitoring systems to electrical equipment and portable appliances to minimise electricity waste.	16 buildings
5	It is recommended that energy management techniques are introduced. These could include efforts to gain building users commitment to save energy, allocating responsibility for energy to a specific person (champion), setting targets and monitoring.	16 buildings
6	Consider engaging with building users to economise equipment energy consumption with targets, guidance on their achievement and incentives.	14 buildings
7	Consider installing building mounted solar water heating.	13 buildings
8	Consider engaging experts to review the condition of the building fabric and propose measures to improve energy performance. This might include building pressure tests for air tightness and thermography tests for insulation continuity.	13 buildings

As can be seen from the table, the installation of photovoltaic electricity generating panels has been recommended for 20 (76.9%), and the installation of buildings mounted solar water heating on 13 (50.0%) of the buildings.

Energy Performance

A DEC shows the energy performance of a building based on actual energy consumption. The rating is an indicator of the annual CO₂ emissions from operating the

building. This rating is shown on a scale from A to G, where A is the lowest CO₂ emissions and represents the best performing buildings.

Table 14 shows the distribution of DEC's by Energy Performance Operational Ratings for the 117 public sector buildings which had DEC's submitted within the lodgement period. The highest Operational Ratings proportions were in bands C (32.38%) and D (31.94%). Only 2.12% of buildings were in band A.

Table 14 – Energy Performance Operational Ratings: Display Energy Certificates, Cherwell district, 1 January 2023 to 30 September 2024

Energy Performance Rating	Total Number of DEC's lodged in period	%
A	0	0.0%
B	16	13.7%
C	45	38.5%
D	30	25.6%
E	17	14.5%
F	1	0.9%
G	8	6.8%

Table 14 shows that none of buildings were given an A rating for operational efficiency. A clustering around the C and D ratings is apparent, with these two grades making up 64.1% of all the certificates available. This is consistent with DLUHC data for the whole of England. The lower grades (E, F and G) make up 22.2% of the certificates available. 6.8% of buildings have the lowest G rating performance.



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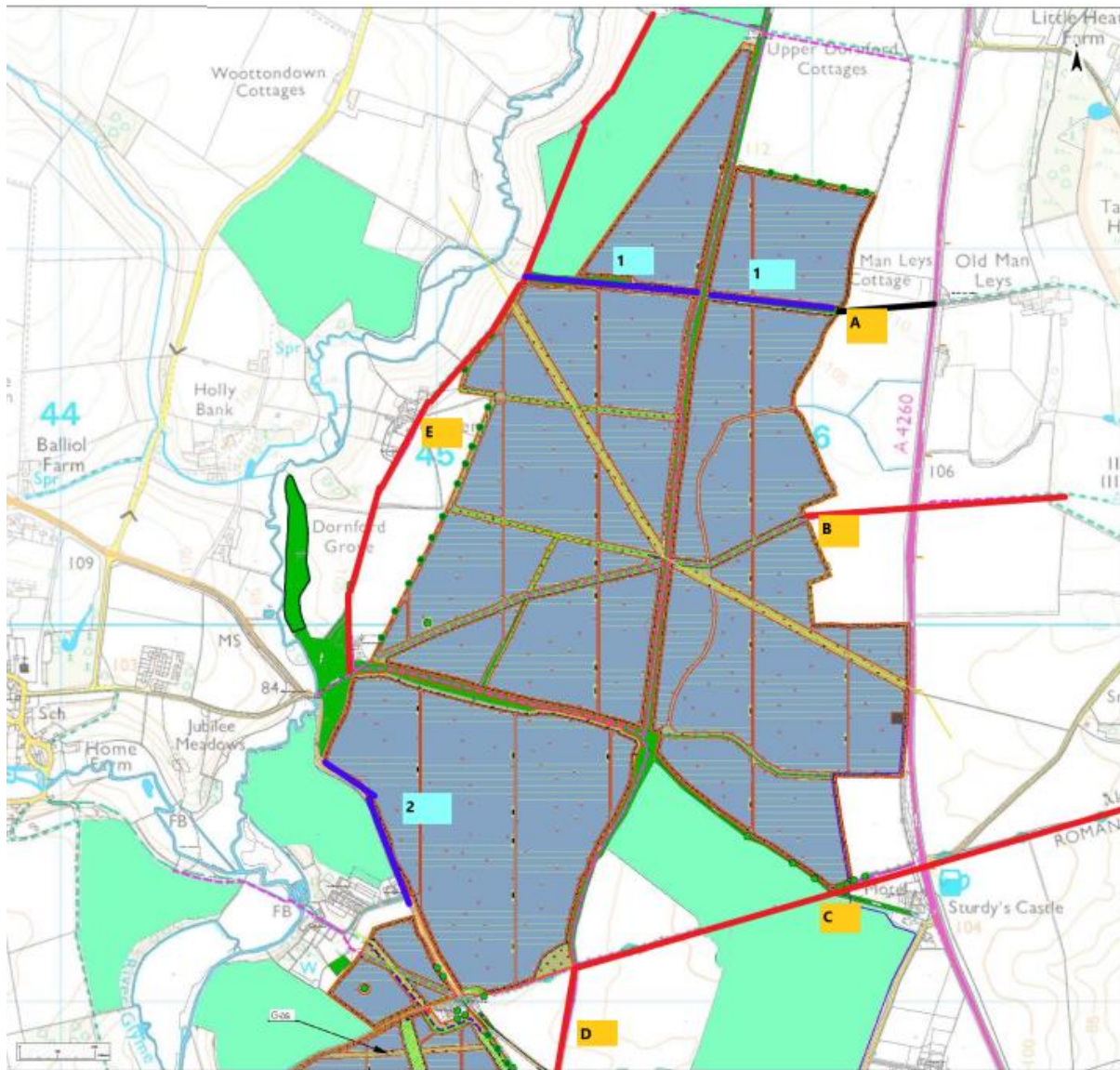
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Appendix 3: Maps Showing Required Onsite and Offsite Public Rights of Way Mitigation Measures

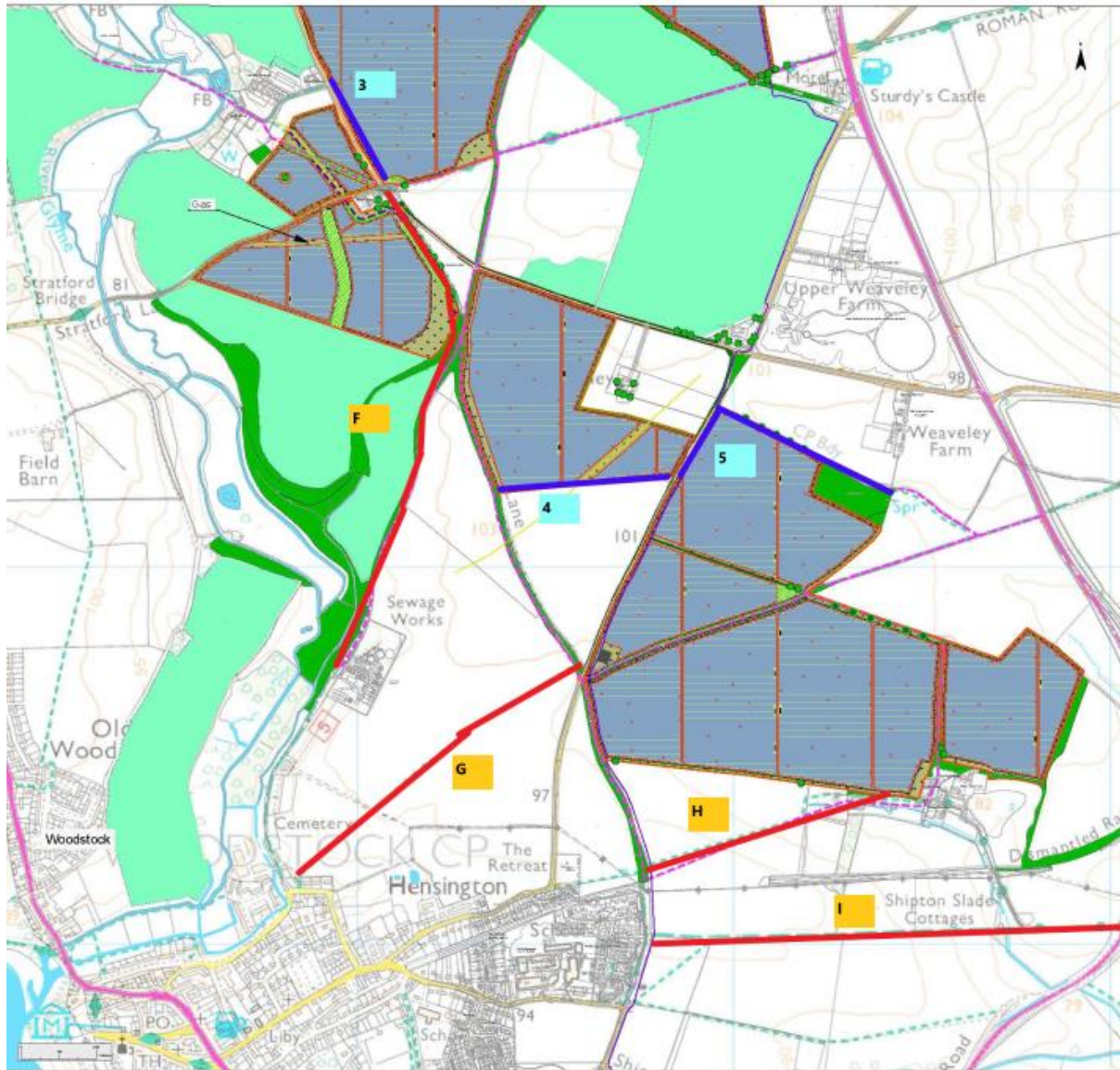
Illustrative Masterplan Plan 01

- | | |
|--------------------------------|--|
| 1. Onsite footpath connection | A. New offsite footpath link to Old Man Leys |
| 2. Onsite bridleway connection | B. Upgraded footpath link |
| | C. Upgraded footpath link |
| | D. Upgraded footpath link |
| | E. Upgraded footpath link |



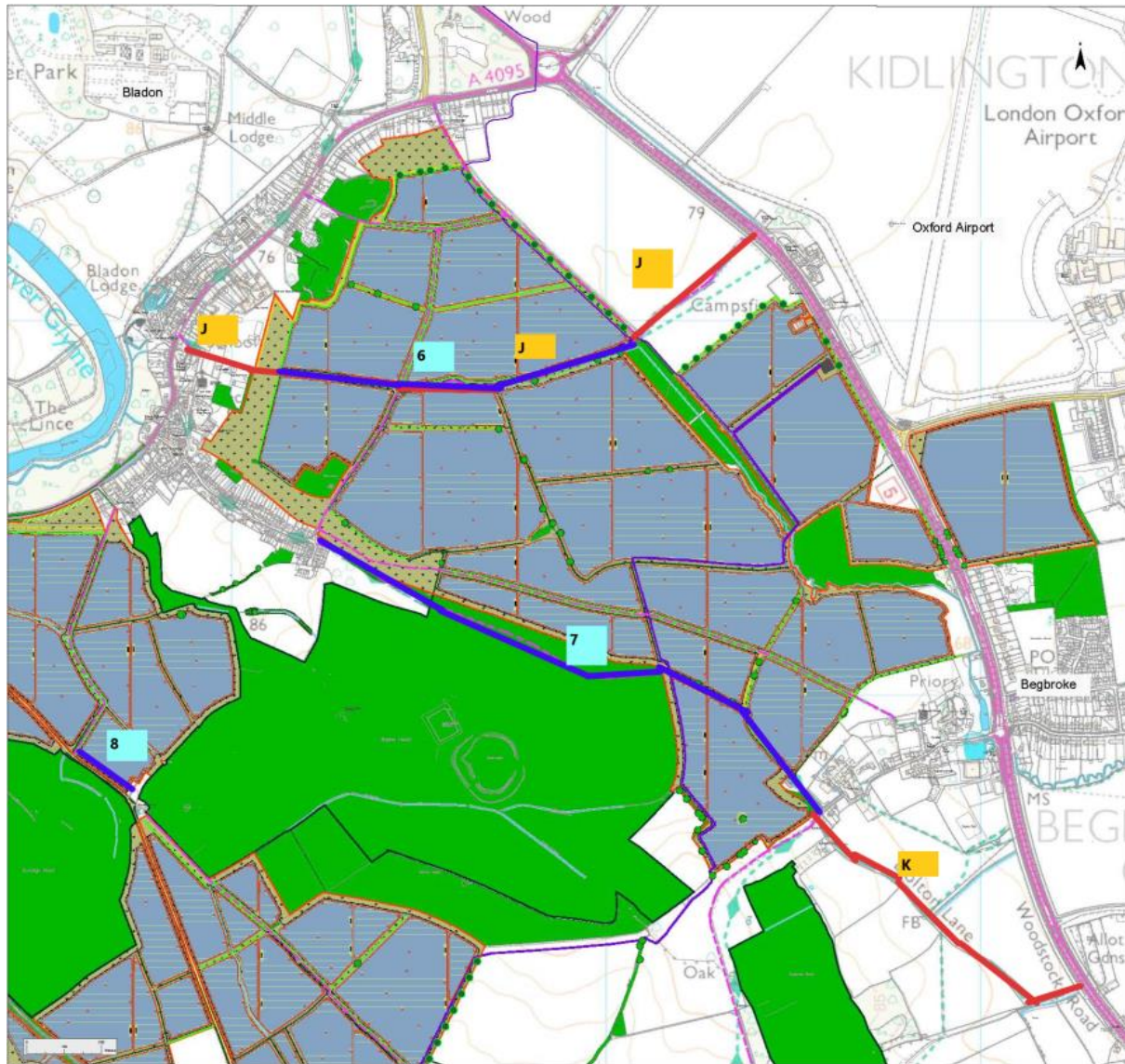
Illustrative Masterplan Plan 02

3. Onsite brideway connection	F. Upgraded path surface
4. Onsite footpath connection	G. Upgrade footpath to brideway to Woodstock Green Lane
5. Onsite footpath connection	H. Upgraded path surface
	I. Upgraded path surface



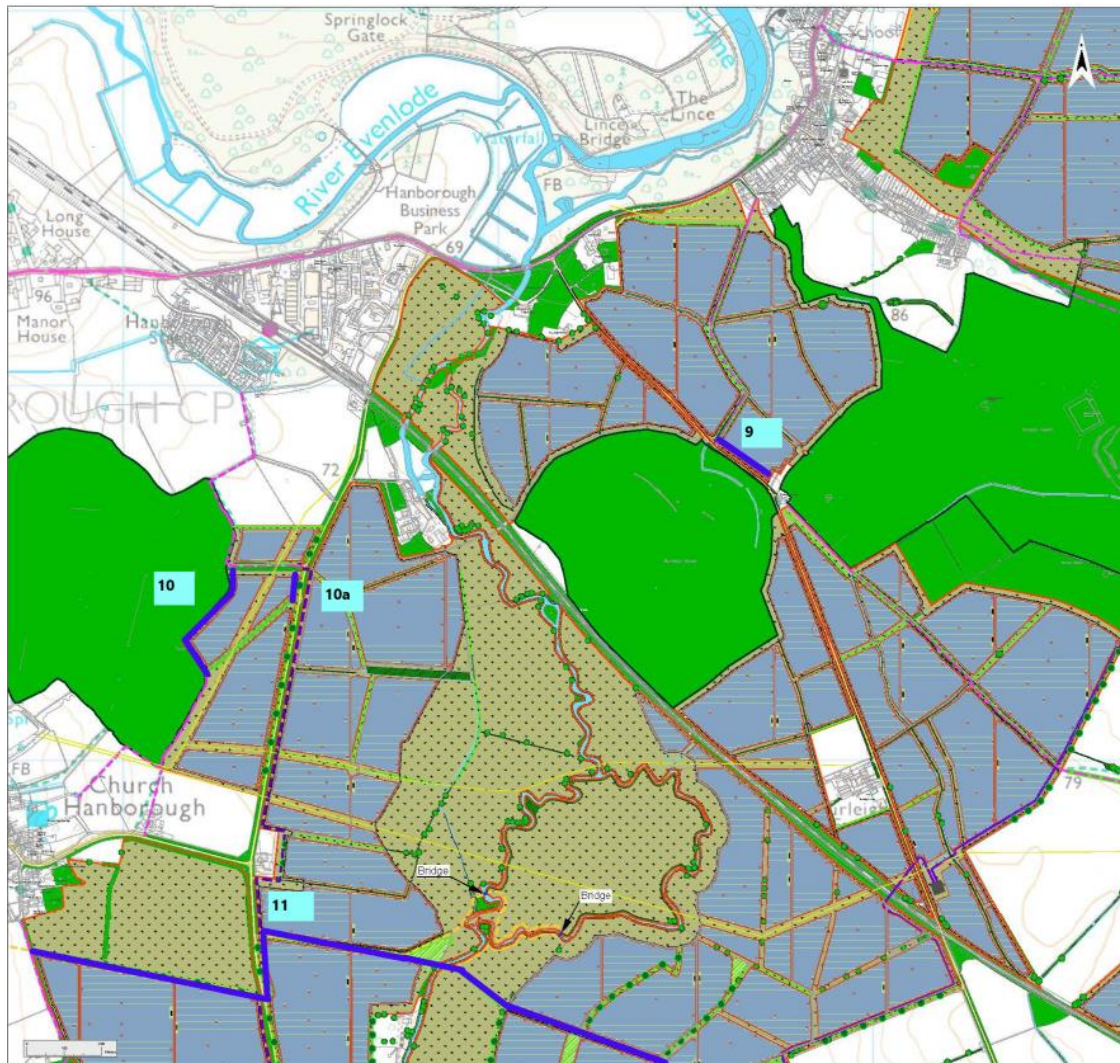
Illustrative Masterplan Plan 03	
6. Upgrade footpath to blacktop cyclepath 7. Improve surface of bridleway/cyclepath 8. Onsite new footpath	J. Upgrade footpath to blacktop cyclepath K. Upgraded path surface

- | |
|---|
| J. Upgrade footpath to blacktop cyclepath |
| K. Upgraded path surface |



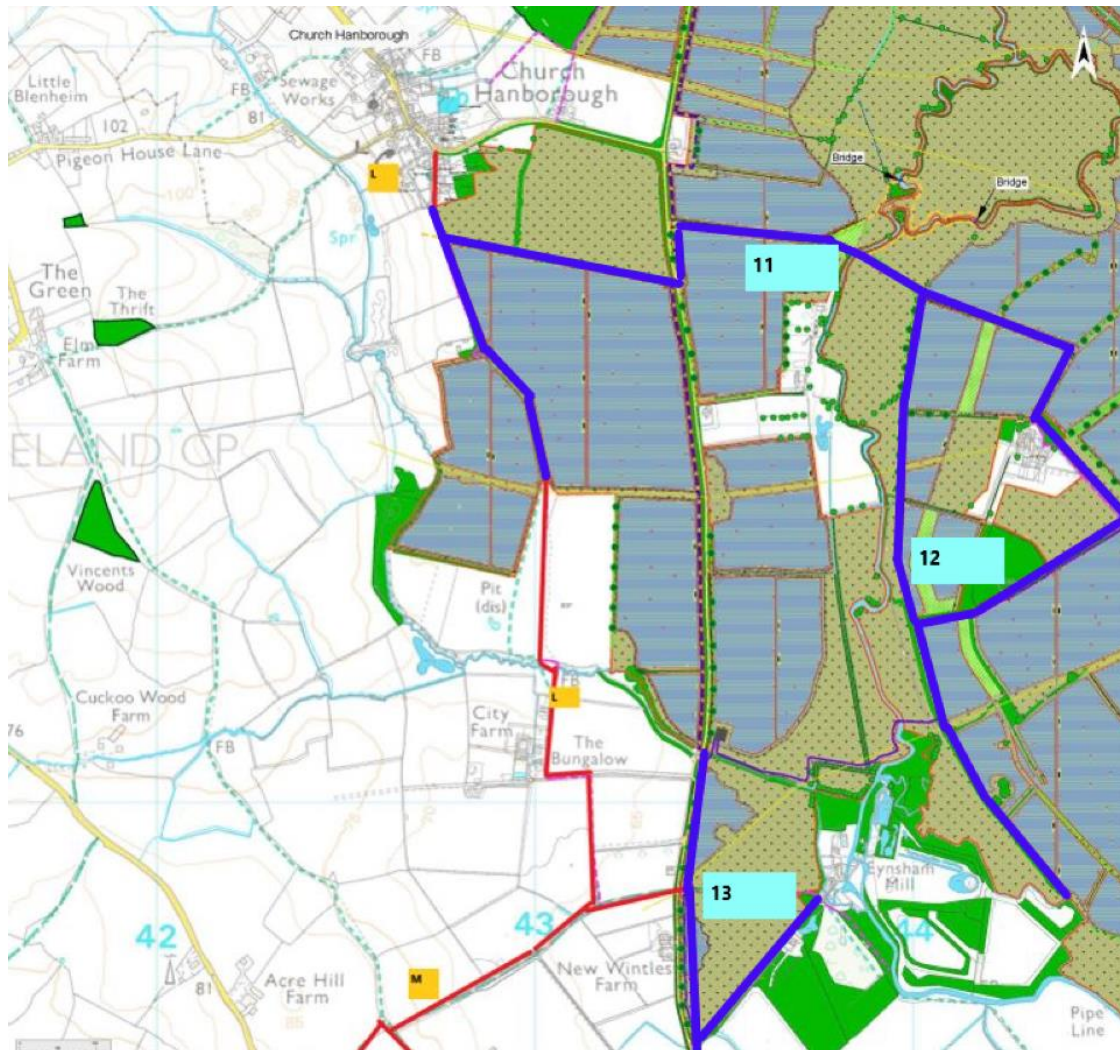
Illustrative Masterplan Plan 04

- 9. Linking footpath
- 10. Linking footpath
- 10a. Linking footpath (alternative)
- 11. Footpath upgraded to bridleway to Cassington (also on plan 5 and 6)



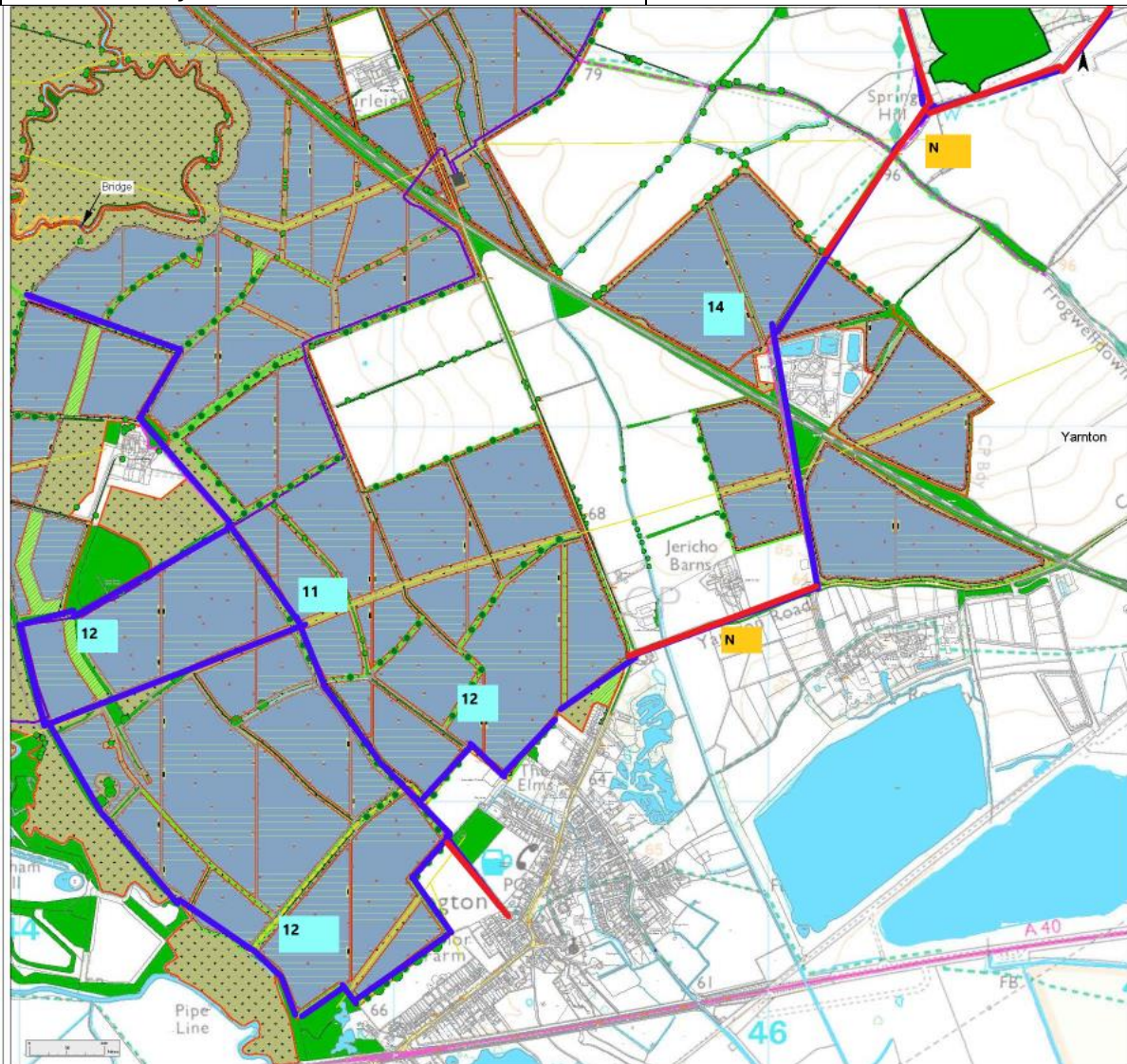
Illustrative Masterplan Plan 05

11. Footpath upgraded to bridleway to Cassington inc crossing	L. Upgrade to bridleway/cyclepath
12. Linking bridleways	M. Upgrade surface
13. Linking bridleways	



Illustrative Masterplan Plan 06

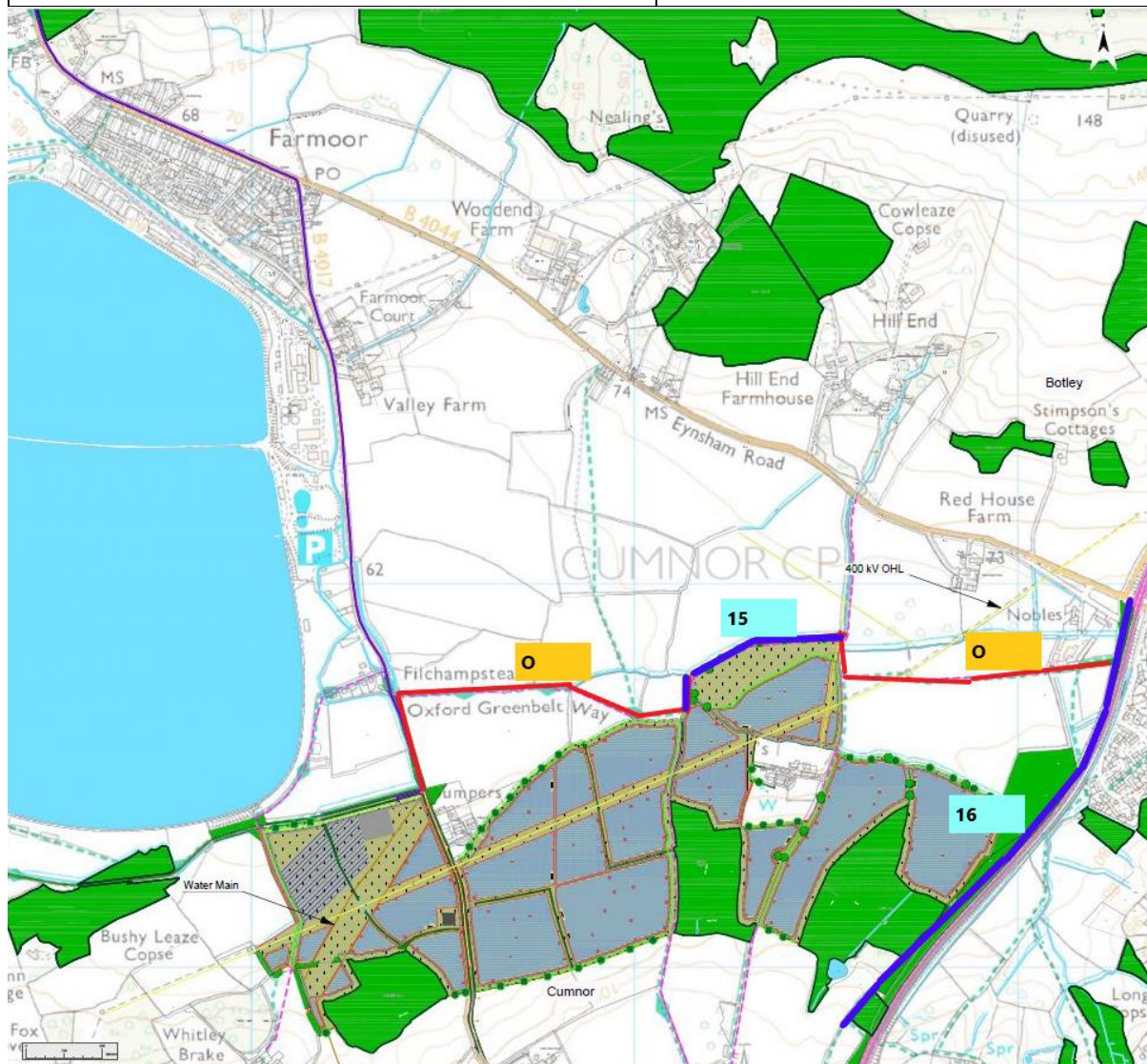
- | | |
|--|---|
| <ul style="list-style-type: none"> 11. Continuation of upgrade brideway to Cassington 12. Linking bridlevays 14. Linking bridlevay and upgrading footpath to bridlevay each side of Begbroke Wood to bridlevay124/1 | <ul style="list-style-type: none"> N. Linking bridlevay and upgrading footpath to bridlevay each side of Begbroke Wood to bridlevay124/1 |
|--|---|



Illustrative Masterplan Plan 07

- 15. Upgrade footpath to bridleway
- 16. Link path and upgrade to bridleway

O. Upgrade footpath to bridleway



Illustrative Masterplan Plan 08

17. Upgrade footpath to bridleway & improve
18. Improve surface

Q. Upgrade footpath to bridleway
R. Improve surface
S. Improve surface

