



Botley West Solar Farm

Environmental Statement

Volume 1

Chapter 20: Cumulative Effects and Inter-relationships

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Glossary

Term	Meaning
The Applicant	SolarFive Ltd
The Project	The Botley West Solar Farm

Abbreviations

Abbreviation	Meaning
CEA	Cumulative Effects Assessment
EIA	Environmental Impact Assessment
ES	Environmental Statement
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
NPS	National Policy Statement
PEIR	Preliminary Environmental Information Report
ZoI	Zone of Influence

Units

Unit	Description
ha	Hectares
MWe	Megawatt electrical

20 Cumulative Effects and Inter-relationships

20.1 Introduction

- 20.1.1 This chapter of the Environmental Statement (ES) has been prepared by RPS for Photovolt Development Partners GmbH (PVDP), on behalf of SolarFive Ltd (the ‘Applicant’).
- 20.1.2 The Project is classed as a ‘Nationally Significant Infrastructure Project’ (NSIP) for the purposes of the PA 2008 and requires an application for a Development Consent Order (DCO). The application for development consent is being submitted to the Planning Inspectorate (PINS), with the decision on whether to grant a DCO to be made by the Secretary of State for Energy Security and Net Zero (the Secretary of State), as required under the PA 2008.
- 20.1.3 The proposal is to install and operate approximately 840MWe of solar generation in parts of West Oxfordshire, Cherwell and Vale of White Horse Districts (the Project). The application is accompanied by an Environmental Statement (ES) prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended (the ‘EIA Regulations’), and other required documents including a statement on pre-application consultation.
- 20.1.4 In order to inform the scope of the EIA, the Applicant sought a Scoping Opinion from PINS (on behalf of the Secretary of State). The cumulative and inter-relationships assessments have been carried out in accordance with the approach set out in the Scoping Opinion, which was received on 24 July 2023 (this is provided as an Appendix to Chapter 4: see Appendix 4.2 of Volume 3 of [EN010147/APP/6.5]).
- 20.1.5 The Cumulative Effects Assessment (CEA) element of this chapter considers effects on environmental receptors from two or more developments which could occur at the same time and which could result in greater effects than if the Project occurred on its own. Inter-related effects, refer to the interactions between aspect assessments and are considered for ‘project lifetime effects’ and ‘receptor-led effects’. This is set out in further detail within **section 20.4**.
- 20.1.6 This chapter is accompanied by Volume 3: Appendix 20.1: Cumulative Developments Longlist and Shortlist [EN010147/APP/6.5] and Volume 2: Figure 20.1 to Figure 20.3 that show the Cumulative Developments [EN010147/APP/6.4].

20.2 Legislation and Policy

Legislation

- 20.2.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (hereafter referred to as ‘the EIA Regulations’) require the EIA process to consider cumulative and inter-related effects. Cumulative effects result from multiple actions on receptors and resources over time and are generally additive or interactive (synergistic) in nature.

20.2.2 The EIA Regulations state in Schedule 4(5) that an assessment should provide a description of the likely significant effects, including cumulative effects, that could occur as a result of the Project in combination with other developments:

‘(e) the cumulation of effects with other existing and/or approved projects, taking account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;

...

The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary...effects of the development.’

20.2.3 The EIA Regulations (Regulation 5(2)(e)) also require that the EIA process should identify, describe and assess the significant effects in relation to:

‘(e) the interaction between the factors referred to in sub-paragraphs (a) to (d) [being population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage and the landscape.]’

National and Local Planning Policy, and Guidance

National Policy Statements

20.2.4 Paragraph 4.1.5 of the Overarching National Policy Statement (NPS) for Energy (EN-1) (Department for Energy Security & Net Zero (November 2023)) states that: *‘In considering any proposed development, and in particular when weighing its adverse impacts against its benefits, 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; and*
- *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’.*

20.2.5 In respect to the assessment content paragraph 4.3.3 states *‘The Regulations require an assessment of the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative... positive and negative effects at all stages of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects.’*

20.2.6 In respect to health impacts, paragraph 4.4.5 states *‘The impacts of more than one development may affect people simultaneously, so the applicant should consider the cumulative impact on health in the ES where appropriate.’*

20.2.7 Paragraph 4.3.2 of NPS EN1 states that *‘The Regulations specifically refer to effects on population, human health, biodiversity, land, soil, water, air, climate, the landscape, material assets and cultural heritage, and the interaction between them’.*

- 20.2.8 Paragraph 4.3.19 of NPS EN-1 goes on to state 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.’*
- 20.2.9 With respect to pollution control, paragraph 4.12.15 of NPS EN-1 states that the Secretary of State *‘in close cooperation with the EA and/or the pollution control authority [...] should be satisfied, before consenting any potentially polluting developments, that [...] the effects of existing sources of pollution in and around the site are not such that the cumulative effects of pollution when the proposed development is added would make that development unacceptable, particularly in relation to statutory environmental quality limits.’*
- 20.2.10 Regarding socio-economic impacts paragraph 5.13.4 states *‘The applicant’s assessment should consider all relevant socio-economic impacts, which may include: [...] cumulative effects - if development consent were to be granted to for a number of projects within a region and these were developed in a similar timeframe, there could be some short-term negative effects, for example a potential shortage of construction workers to meet the needs of other industries and major projects within the region.’*
- 20.2.11 In relation to traffic and transport, paragraph 5.14.21 states that *‘The Secretary of State should only consider refusing development on highways grounds if there would be an unacceptable impact on highway safety, residual cumulative impacts on the road network would be severe, or it does not show how consideration has been given to the provision of adequate active public or shared transport access and provision’.*
- 20.2.12 For water quality and resources in respect to the applicant’s assessment, paragraph 5.16.7 states the *‘the ES should in particular describe [...] any cumulative effects.’*

National Policy Statement for Renewable Energy Infrastructure (EN-3)

- 20.2.13 Paragraphs 2.10.94 and 2.10.95 of NPS EN-3 (Department for Energy Security & Net Zero, 2023b) states *‘The approach to assessing cumulative landscape and visual impact of large-scale solar farms is likely to be the same as assessing other onshore energy infrastructure. 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. 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 zero.’*
- 20.2.14 With respect to traffic and transport and noise and vibration, paragraph 2.10.126 of NPS EN-3 states *‘Where a cumulative impact is likely because multiple energy infrastructure developments are proposing to use a common port and/or access route and pass through the same towns and villages, applicants should include a cumulative transport assessment as part of the ES. This should consider the impacts of abnormal traffic movements relating to the project in question in combination with those from any other relevant*

development. Consultation with the relevant local highways authorities is likely to be necessary.'

National Planning Policy Framework

20.2.15 Although the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities & Local Government, 2023) does not contain specific policies for Nationally Significant Infrastructure Projects (NSIPs), it can still be a material consideration. The following statements are relevant to this assessment.

20.2.16 Paragraph 49 of the NPPF states *'However, in the context of the Framework – and in particular the presumption in favour of sustainable development – arguments that an application is premature are unlikely to justify a refusal of planning permission other than in the limited circumstances where both:*

a) the development proposed is so substantial, or its cumulative effect would be so significant, that to grant permission would undermine the plan-making process by predetermining decisions about the scale, location or phasing of new development that are central to an emerging plan [...]

20.2.17 Paragraph 115 states *'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.'*

20.2.18 Paragraph 160 states *'To help increase the use and supply of renewable and low carbon energy and heat, plans should [...] provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts).'*

Planning Inspectorate Guidance: Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment

20.2.19 In the absence of a single agreed industry standard method for cumulative effects assessment, PINS issued this online guidance (Planning Inspectorate, 2024) outlining a suitable methodology for NSIP projects. This methodology has been taken into account in section 20.4.

Planning Inspectorate Guidance: Nationally Significant Infrastructure Projects - Advice Note 9: Rochdale envelope

20.2.20 Specific to the inter-related effects impact assessment, the Planning Inspectorate Advice Note 9 (Planning Inspectorate, 2018) has been considered while writing this chapter, with specific regard to the following (paragraph 4.13):

- *'ensure that interactions (interactions between aspect assessments includes where a number of separate impacts, e.g. noise and air quality, affect a single receptor such as fauna) between aspect (the Planning Inspectorate refers to 'aspects' as meaning the relevant descriptions of the environment identified in accordance with the EIA Regulations) assessments are taken into account relevant to the worst case*

scenario(s) established and that careful consideration is given to how these are assessed.

- *ensure that the assessment of the worst case scenario(s) addresses impacts which may not be significant on their own but could become significant when they inter-relate with other impacts alone or cumulatively with impacts from other development (including those identified in other aspect assessments).¹*

20.2.21 This methodology has been taken into account in section 20.4.

Local Planning Policy

20.2.22 There is no local planning policy concerning cumulative effects.

20.3 Consultation and Engagement

20.3.1 On 4 April 2023, the lead Planning Policy & Implementation Officer at West Oxfordshire District Council was contacted to review the cumulative methodology along with the CEA long list. This was distributed to the other councils to get an agreed comprehensive long list.

20.3.2 In June 2023 a Scoping Report was submitted to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects and, where necessary, to determine suitable mitigation measures for the construction and operational phases of the Project. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Project would not have the potential to give rise to significant environmental effects in these areas.

20.3.3 Following consultation with the statutory bodies, a Scoping Opinion was provided by the Planning Inspectorate (on behalf of the Secretary of State) on the 24 July 2023.

20.3.4 Key issues raised during the scoping process specific to cumulative effects and inter-relationships are listed in Table 20.1, together with details of how these issues have been addressed within the ES.

Table 20.1: Summary of scoping opinion, and Applicant responses

Comment	How and where considered in the ES
Planning Inspectorate	
ID 3.12.2: The ES should explain the methodology for defining both the short list of developments identified and justify the omission/inclusion of developments for each cumulative assessment. This should be informed by appropriate consultation with the relevant bodies.	The methodology is set out in Section 20.4 of this chapter and also Chapter 4: Approach to Environmental Assessment in Volume 1.
ID 3.12.2: The ES should explain how the inter-relationships assessed have been identified and explain the methodology for assessment.	The methodology is set out in Section 20.4 of this chapter
ID 3.12.2: The Applicant’s attention is drawn to the consultation response from the Environment Agency (Appendix 2 of this Opinion) regarding the overlap of the Proposed Development with the Thames	This development is in the long list (Appendix 20.1) but is not assessed further in the short list

Comment	How and where considered in the ES
<p>Valley Flood Scheme. The ES should provide clarity on this overlap, should it remain, and any interactions/impacts between the two developments.</p>	<p>as it is not considered to cause impact.</p>
<p>ID 3.12.2: 'To be able to visualise the cumulative impact of developments in the area, BPC would like to request that the ES include a plan that shows the Project in relation to not only all the approved and proposed residential developments in the area, but also to the approved and proposed solar farms and other non-residential developments in the area, such as, for example, the proposed Park and Ride on the A44 near the Bladon Roundabout. In addition to these proposed developments, the plan should also include developments built/being built but not yet showing on the OS base map being used. They should also show the built solar farms already in the area as, unlike residential developments, the OS base map does not show these types of developments and it could be assumed that these areas are undeveloped and still open countryside.'</p>	<p>The long list has included these developments and Figure 20.1 has been created to show approved and proposed developments and solar farms where appropriate.</p>
<p>ID 3.12.2: Council draws PINS attention to the fact that the proposed southern site lies immediately adjacent to, and south of, another proposed solar power station (Red House Farm) where the Vale of White Horse District Council (VWHDC) has required an extensive set of Environmental Impact Assessments be carried out (P22/V2581/SCO).</p>	<p>This application has now been withdrawn and therefore excluded from the assessment.</p>
<p>ID 3.12.2: The Scoping Opinion request does not list any sites that it may consider for cumulative impacts. Paragraph 7.2.35 [of the EIA Scoping Report] refers to 'large' but doesn't define what this may be. There are also potential sequential Cumulative Impacts with other existing and proposed solar and other development in the Oxford Green Belt, especially those sites that the Oxford Green Belt Way passes. This area of the Oxford Green Belt contains numerous rights of way with limited detractors and is a key recreational resource to Oxford and surrounding urban areas.</p>	<p>The long list has included these developments and Figure 20.1 has been created to show approved and proposed developments and solar farms where appropriate</p>
<p>ID 3.12.2: Said to be away from main settlements but sites between several existing settlements which have or are due to be extended in current LP's filling in surrounding area with differing development (5.4.6) (paragraph 7.12.2 of the EIA Scoping Report) including 4,000 homes. Long term aggregated environmental effect must be considered together with disruption. GB land will almost totally be filled between Yarnton and Long Hanborough (Figure 2), resulting in complete loss of amenity for residents.</p>	<p>Appendix 20.1 provides the longlist and shortlist.</p>

20.4 Assessment Methodology

Study Area

20.4.1 The study area, or Zone of Influence (Zoi), for the CEA and assessment of inter-relationships is based primarily on the study areas for each topic area for the Project as well as the study areas for each of the other developments.

Methodology

20.4.2 The CEA methodology is primarily based on the process set out in the Planning Inspectorate Advice Note Seventeen (Planning Inspectorate, 2019) which

consists of a four stage process. The four stage process and how this has been progressed is outlined in Table 20.2.

Table 20.2: Summary of the Four Stage Approach to CEA

CEA Stage	Activity
Stage 1	Identify a long list of 'other developments' using the tiered approach. In order to do this, the Zol for each topic area has been identified which forms the basis of the search area. The developments included in the long list have been included along with important information and the assigned tier.
Stage 2	From the long list, develop a short list of 'other developments' which are considered within the CEA. Inclusion/exclusion criteria outlined below used to define the short list. The short list has been consulted upon with statutory and non-statutory consultees during the EIA process.
Stage 3	A desk study has been undertaken to gather the appropriate environmental information (if available) for the identified 'other developments' in the short list.
Stage 4	An assessment of the likely cumulative effects. The apportionment of effect between the Project and the 'other developments' is considered, eg whether the contribution to the effect is demonstrably related to one development or whether there is an equal contribution from either development.

Stage 1

20.4.3 The Zol for each topic area has been identified primarily based on the extent of likely effects. Each topic area has used topic-specific guidance along with professional judgement and knowledge of the local area to define the geographical Zol. The identified Zols are presented in Table 20.3.

Table 20.3: Zone of Influence for Cumulative Effects Assessment

Topic	Zone of Influence
Historic Environment	Built heritage and buried archaeology: 1 km from the site boundary.
Landscape and Visual Resources	Effects on landscape character and visual amenity during construction and operation: 5 km from the site boundary.
Ecology	Effects on Ecology & habitats including nationally and locally designated sites: 5 km from the site boundary.
Ground Conditions	1 km from the site boundary.
Hydrology	1 km from the site boundary.
Traffic and Transport	5 km from the site boundary.
Air Quality	Up to 700 m from construction works. Construction dust effects not expected more than 350 m from construction works.
Noise and Vibration	5 km from the site boundary.
Climate Change	N/A
Socio-Economic	Local study area includes the surrounding local authorities.
Human Health	For initial analysis, data collection has focused on the local authorities. Health-specific data is tailored in geographic scope to the varying health determinants being assessed, and the requirement of the individual health assessment protocols being applied.

Agricultural Land Use and Agricultural land within the site boundary
Public Rights of Way

20.4.4 The types of ‘other development’ considered in the CEA are set out in Table 20.4 (adapted from Table 2 of Planning Inspectorate Advice Note Seventeen). The key difficulties in any CEA relate to the level of detail available in relation to ‘other developments’ and the reliance that needs to be made on environmental assessment carried out by others. For those applications at earlier stages of development or those for which EIA has not been undertaken, professional judgement and knowledge of the study area have been employed to consider the receptors or resources that may be affected by the Project and the ‘other developments’ in question. Minor household applications have been excluded from the long list.

Table 20.4: ‘Other Developments’ for Inclusion in the CEA (adapted from Planning Inspectorate, 2019)

Tier	Description
Tier 1	<p>Under construction (however, where projects are expected to be completed before construction of the Project and the effects of those projects are fully determined, effects arising from them should be considered as part of the baseline).</p> <p>Permitted application(s) but not yet implemented.</p> <p>Submitted application(s) but not yet determined.</p>
Tier 2	<p>Planning application(s) where a scoping report has been submitted.</p>
Tier 3	<p>Projects on the planning register where a scoping report has not yet been submitted.</p> <p>Sites identified in the relevant Local Development Plans (and emerging Local Development Plans – with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposal will be limited.</p> <p>Other plans and programmes (as appropriate) which set the framework for future development consent/approval, where such development is reasonably likely to come forward.</p>

20.4.5 The long list identified using the above methodology is presented in Appendix 19.1. Each development on the long list has been assigned a tier based on Table 20.2.

20.4.6 This list has been updated periodically during the EIA process, informed by consultation and modelling confirming the extent of study areas, and was finalised approximately three months prior to the submission of the application for development consent.

Stage 2

20.4.7 The following criteria have been used in screening developments for inclusion in the short list. These criteria, however, are not exhaustive or wholly prescriptive: expert judgement by the EIA team has also been applied

throughout the CEA process. The following developments have been included in the short list.

- EIA developments or those where an un-determined EIA screening or scoping request indicated the possibility of significant environmental effects was foreseen.
- 'Major developments', where identified as such on the planning register, or which have the potential to result in cumulative effects (based on professional judgement).
- Developments whose scale, nature or location suggests potential for particular cumulative effects – e.g. an industrial or combustion process as a source of air or water pollutant or noise emissions, a potential large traffic generator such as distribution warehouse or retail park, or a development in proximity to a designated site or other asset.
- Completed developments that may not be captured in baseline studies (e.g. due to very recent start of operation).
- Developments that introduce sensitive receptors for which the assessment of effects on existing sensitive receptors identified through baseline study and included in the assessment of a particular environmental impact would not be representative.

20.4.8 The short list is summarised in Table 20.5 and the locations of the short listed developments are shown on Figures 20.1, 20.2 and 20.3. Developments not meeting these inclusion criteria and/or not considered to have potential for cumulative effects have been screened out of the short list.

Table 20.5: Summary of Short List of 'Other Developments' Identified for CEA

Project Name	Application Reference	Capacity / Scale / Description	Distance from Project (km)
Tier 1			
Salt Cross Garden Village	20/01734/OUT	2,200 dwellings and 40ha of employment land.	Adjacent
West Eynsham Strategic Development Area (Eynsham Nursery)	15/00761/FUL	77 dwellings (allowed at appeal).	1.5
West Eynsham Strategic Development Area (Land west of Thornbury Road)	18/01009/RES	160 dwellings.	1.5
Land east of Woodstock	16/01364/OUT	300 residential dwellings, up to 1100sqm of A1/A2/B1/D1 floorspace.	Adjacent
Land north of Hill Rise, Woodstock	21/00189/FUL	180 dwellings (Appeal allowed Oct 23).	1.0
Land north of Banbury Road, Woodstock	21/00217/OUT	235 dwellings with community space and car barns.	0.3

Project Name	Application Reference	Capacity / Scale / Description	Distance from Project (km)
Land south of Witney Road, Long Hanborough	14/1234/P/OP	Erection of up to 169 dwellings, with new Doctors Surgery (allowed at appeal).	1.9
Land north of Witney Road, Long Hanborough	22/01330/OUT	150 dwellings.	2.2
Land south east of Pinsley Farm	17/03155/RES	120 dwellings.	Adjacent
Twelve Acre Farm - Solar Farm	19/02516/FUL	31.9 MW peak. Up to 10 batteries in shipping containers. Up to 10 inverters in shipping containers. Internal access tracks, perimeter fence, CCTV cameras.	2.5
Land Between Woodstock Sewage Works And B4027 - Solar Farm	20/01817/FUL	5MW generating capacity on 9.1ha of land.	Adjacent
Salutation Farm - Solar Farm	13/1277/P/FP	13.2MW. 52,800 free standing solar panels.	3.5
Tar Farm Solar Farm	21/03711/FUL	49.9 MW.	6.0
Land at Bicester Road, Kidlington	22/00747/OUT	Outline planning application for the development of up to 370 homes, public open space (including play areas and woodland planting), sports pitches and pavilion, drainage and engineering works, with all matters reserved (appearance, landscaping, layout and scale) except for vehicular and emergency accesses to Bicester Road.	3.0
West of Rutten Lane Yarnton	21/03522/OUT	The erection of up to 540 dwellings (Class C3), up to 9,000sqm GEA of elderly/extra care residential floorspace (Class C2), a Community Home Work Hub (up to 200sqm)(Class E), alongside the creation of two locally equipped areas for play, one NEAP, up to 1.8 hectares of playing pitches and amenity space for the William Fletcher Primary School, two vehicular access points, green infrastructure, areas of public open space, two community woodland areas, a local nature reserve, footpaths, tree planting, restoration of historic hedgerow, and associated works. All matters are reserved, save for the principal access points.	Adjacent
Land south of Perdiswell Farm, Shipton Road	22/01715/OUT	Erection of up to 500 dwellings with associated access, open space and infrastructure.	Adjacent
New Science Park West of junction with The Boulevard, Oxford Airport, Langford Lane	23/00517/F	Redevelopment of the site to include the demolition of existing buildings and development of new accommodation across 5 buildings for employment uses (Class E(g)(ii) and (iii)) plus ancillary amenity building, outdoor amenity space, car parking, cycle parking, landscaping and associated works.	Adjacent

Project Name	Application Reference	Capacity / Scale / Description	Distance from Project (km)
OS Parcel 4347 East of Pipal Cottage, Oxford Road, Kidlington	23/01233/OUT	Outline application (with all matters except access reserved) for up to 800 dwellings, two form entry primary school, a local centre, business uses and public open space, new access and associated transport infrastructure.	4.0
Rowles Farm, off A34, Bletchingdon, Oxford, OX25 3QQ	13/01027/F	Construction of a solar farm with on-site equipment rooms and plant, security fencing, landscaping and associated works.	7.5
Rickfield Farm, off South Newington Road, Milcombe	13/01197/F	Solar Farm.	13.0
Flit Solar Farm, off Woodstock Road, Yarnton	14/00786/F	Construction of a Solar Farm with on site equipment rooms and plant, access improvement and on-site tracks, security fencing and thermal imaging system, landscaping and associated works.	2.0
Hill Farm, Duns Tew	15/00570/F	Erection of 5MW PV Solar Farm and associated infrastructure.	8.5
North of Ploughley Road and NW of railway line, Arcott	20/00285/F	Construction and operation of a solar photovoltaic ('PV') farm, with battery storage and other associated infrastructure including inverters, security cameras, fencing, access tracks and landscaping.	13.5
Land north of Manor Farm, Noke	22/01682/F	Development of a ground mounted solar farm incorporating the installation of solar PV panels, associated infrastructure and access, as well as landscape planting and designated ecological enhancement areas.	7.5
Land north and adj to Mill Lane, Stratton Audley	22/03873/F	Installation and operation of a renewable energy generating station comprising ground-mounted photovoltaic solar arrays and battery-based electricity storage containers together with a switchgear container, inverter/transformer units, Site access, internal access tracks, security measures, access gates, other ancillary infrastructure and landscaping and biodiversity enhancements.	15.0
NW Bicester (circa 10ha solar farm as part of residential led scheme)	21/04275/OUT	OUTLINE - with all matters reserved except for Access - Mixed Use Development of up to 3,100 dwellings (including extra care); residential and care accommodation(C2); mixed use local centre (comprising commercial, business and service uses, residential uses, C2 uses, local community uses (F2(a) and F2(b)), hot food takeaways, public house, wine bar); employment area (B2, B8, E(g)); learning and non-residential institutions (Class F1) including primary school (plus	10.0

Project Name	Application Reference	Capacity / Scale / Description	Distance from Project (km)
		land to allow extension of existing Gagle Brook primary school); green Infrastructure including formal (including playing fields) and informal open space, allotments, landscape, biodiversity and amenity space; burial ground; play space (including Neaps/Leaps/MUGA); changing facilities; ground mounted photovoltaic arrays; sustainable drainage systems; movement network comprising new highway, cycle and pedestrian routes and access from highway network; car parking; infrastructure (including utilities); engineering works (including ground modelling); demolition	
Multi-phased residential-led mixed used development.	23/02098/OUT	Up to 215,000 square metres gross external area of residential floorspace (or c.1,800 homes which depending on the housing mix could result in a higher or lower number of housing units) within Use Class C3/C4 and large houses of multiple occupation (Sui Generis); Supporting social infrastructure including secondary school/primary school(s) (Use Class F1); health, indoor sport and recreation, emergency and nursery facilities (Class E(d)-(f)). Supporting retail, leisure and community uses, including retail (Class E(a)), cafes and restaurants (Class E(b)), commercial and professional services (Class E(c)), a hotel (Use Class C1), local community uses (Class F2), and other local centre uses within a Sui Generis use including public houses, bars and drinking establishments (including with expanded food provision), hot food takeaways, venues for live music performance, theatre, and cinema. Up to 155,000 net additional square metres (gross external area) of flexible employment uses including research and development, office and workspace and associated uses (Use E(g)), industrial (Use Class B2) and storage (Use Class B8) in connection with the expansion of Begbroke Science Park; Highway works, including new vehicular, cyclist and pedestrian roads and paths.	Adjacent
Outline planning application for the residential development of up to 300 dwellings with associated infrastructure and open space (outline)	23/03307/OUT	Residential development up to 300 dwellings.	1.3

Project Name	Application Reference	Capacity / Scale / Description	Distance from Project (km)
and new access off the A44 (detailed)			
Retention of existing garden centre and associated car parking. Outline application for creation of new vehicle access... proposed 10no. two storey dwellings... proposed day nursery... proposed 120no. units of retirement living... proposed parking and landscaping.	24/00657/OUT	Retention of existing garden centre and associated car parking, in a modified fashion. Outline application, with all matters reserved except for access, with retention of vehicular access from Sandy Lane (to serve new housing only) and creation of proposed new vehicular access from Begbroke Hill (to serve the remainder of the retained and proposed development). Proposed 10no. two storey dwellings accessed from Sandy Lane. Proposed new day nursery (approx. 90no. children) and proposed 120no. units of retirement living accommodation in two to four storey development. Proposed new two-tier decked car park to provide approximately 270no. car parking spaces, plus retention of existing car parking area in modified fashion, and staff car parking. Proposed 39no. cycle parking spaces for the garden centre, plus approx. 115no. staff and visitor cycle parking spaces across the site. Proposed landscaping, including public open space, and pedestrian and cycle links.	3.4
Erection of a stadium (Use Class F2)	24/00539/F	Erection of a stadium (Use Class F2) with flexible commercial and community facilities and uses including for conferences, exhibitions, education, and other events, club shop, public restaurant, bar, health and wellbeing facility/clinic, and gym (Use Class E/Sui Generis), hotel (Use Class C1), external concourse/fan-zone, car and cycle parking, access and highway works, utilities, public realm, landscaping and all associated and ancillary works and structures.	5.9
Hybrid application for Northern Gateway	18/02065/OUTFUL	87,000sqm business space, 550 sqm community space, up to 2,500sqm retail and food, 180 bed hotel and up to 480 residential units.	3.0
Tier 2			
Cumnor Solar Farm	P23/V0306/SCR	Request for an EIA Screening Opinion prior to the submission of an application for the installation of a 13MW solar photovoltaic array and battery storage facility.	1.5

Project Name	Application Reference	Capacity / Scale / Description	Distance from Project (km)
Land to the west of Red House Farm, Botley, OX2 9ND	P22/V2581/SCO	Request for a Scoping Opinion for a proposed 49.99MW solar scheme.	Adjacent
Land to the west of Red House Farm, Botley, OX2 9ND	P22/V0144/SCR	Request for an EIA Screening Opinion prior to the submission of an application for the installation of a solar photovoltaic array.	Adjacent
Land to the west of Red House Farm, Botley, OX2 9ND	P22/V2051/SCR	Updated request for Screening Opinion.	Adjacent
Red House Farm Eynsham Road Farmoor Oxford OX2 9ND	P23/V2624/FUL	Installation of ground mounted solar photovoltaic array with associated infrastructure, security fence, CCTV, cable route, landscaping, and onsite biodiversity net gain.	Adjacent
Farmoor Reservoir, Farmoor	P18/V2796/SCR	Request for a Screening Opinion for 7.3MW solar generator on part of reservoir.	Adjacent
Curbridge Solar	24/01127/SCREE N	Screening opinion (EIA) for development of a 30MW solar farm with 30MW BESS	11.8
Tier 3			
Salt Cross Garden Village Strategic Location for Growth	EW1	2,200 dwellings and 40ha of employment land	Adjacent
West Eynsham Strategic Development Area	EW2	1,000 dwellings	1.5
Land east of Woodstock	EW3	300 dwellings	Adjacent
Land north of Hill Rise, Woodstock	EW4	120 dwellings	1.0
Land north of Banbury Road, Woodstock	EW5	180 dwellings	0.3
Land at Pinsley Wood	722302	600 dwellings (call for sites - strategic promotion)	Adjacent
Land east of Oxford Road	PR6a	690 dwellings and associated infrastructure	4.0
Land west of Oxford Road	PR6b	670 dwellings and associated infrastructure	4.0
Land south east of Kidlington & Land at Stratfield Farm	PR7a & PR7b	430 dwellings and associated infrastructure	3.0
Land east of A44	PR8	1950 dwellings and associated infrastructure	Adjacent
Land west of Yarnton	PR9	540 dwellings and associated infrastructure	Adjacent

Stage 3

- 20.4.9 A desk study search of the environmental information available for each of the 'other developments' listed in the short list has been undertaken. This included searching on Local Planning Authorities and the Planning Inspectorate websites. The information gathered has been used to identify the likely significant cumulative effects.

Stage 4

- 20.4.10 The CEA does not aim to assign significance levels (such as negligible, minor, moderate or major) for the identified effects. Instead, the assessment has been used to identify where there is the potential for cumulative effects to occur and to provide details of whether cumulative effects are likely to be significant or not. A statement is made as to whether the cumulative effect would be worse or better than the effects predicted for the Project alone, whether the cumulative effects have the potential to be more significant than the effects of the Project alone and, if so, whether this would be adverse or beneficial.
- 20.4.11 Each topic assessed as part of the EIA process has considered the 'other developments' from the short list which could result in significant effects. Each topic has based this selection on the location, nature and status of each development and provided a table justifying the inclusion of each development in their assessment. Chapters 7 to 19 provide an assessment on the likely significant cumulative effects. This chapter provides a summary of these assessments.

Approach to NGET Cumulative Effect Assessment

- 20.4.12 The Project will connect to a new National Grid Electricity Transmission (NGET) system, via a new National Grid 400kV substation to be located in the Southern Project Site. The area to be set aside for the NGET substation amounts to between 2.3ha to 3.8 ha. National Grid will be responsible for construction of the NGET.
- 20.4.13 For assessment purposes, it is assumed that the NGET substation will be within the Project Site. To cater for the eventuality that National Grid decides not to locate the NGET in the Project Site, then an assessment has been made under a cumulative scenario for its delivery in an area adjoining the west of the Southern Site, south of Farmoor Reservoir. Additionally, as part of this cumulative scenario, the assessment is made for the substitution of solar panels on the land formerly set aside for the NGET. National Grid would be responsible for seeking any necessary consents and permissions.

Inter-relationships

The approach to assessing inter-related effects has also followed a four stage process, albeit different stages to the CEA, as summarised in Table 20.6 and discussed in the following paragraphs.

Table 20.6: Summary of the Approach for Assessment of Inter-related Effects

Stage	Description
1	Assessments undertaken for individual EIA topic areas within the ES.
2	Review of the likely receptor(s)/resource(s) affected by more than one impact through analysis of the assessment of effect sections undertaken for individual ES topic areas.
3	Identification of potential combined effects on these receptor groups through review of the topic-specific assessments in the ES chapters.
4	Assessment undertaken on how individual effects may combine to create inter-related effects on each receptor group for 'Project lifetime effects' and 'receptor led effects'.

Stage 1: Topic-specific Assessments

20.4.14 The first stage of the assessment of inter-related effects has been presented in each of the individual topic chapters (Chapters 7 to 19 of this ES) and comprises the individual assessments of effects on receptors across the construction and operational phases of the Project.

Stage 2: Identification of Receptor Groups

20.4.15 Stage 2 has involved a review of the assessments undertaken in the topic-specific chapters to identify 'receptor groups' requiring assessment within the inter-related effects assessment. The term 'receptor group' is used to highlight that the approach taken for the inter-related effects assessment does not assess every individual receptor assessed during the EIA process, but rather potentially sensitive groups of receptors. The receptor groups can be broadly categorised as follows:

- landscape and visual resources: designated sites; landscape character; visual receptors (residents, users of public rights of way, other visual receptors);
- historic environment: buried archaeology; designated heritage assets; settings of heritage assets;
- land use and recreation: agricultural land; farm businesses; users of recreational facilities (eg Public Rights of Way (PRoW));
- socio-economics: employment levels; housing and other local services; tourism;
- ecology and nature conservation: ecologically designated sites; important habitat features; protected species;
- traffic and transport: road users; residents;
- noise and vibration: residents;
- air quality: residents;
- health: residents in the local area;
- climate change; and

- water environment: surface water bodies; flood risk (residents, other land uses).
- air quality

Stage 3: Identification of Potential Inter-related Effects on Receptor Groups

20.4.16 Consideration has then been given to the potential for inter-related effects to arise for each of the identified receptor groups across the Project phases (i.e. Project lifetime effects) as well as the interaction of multiple effects on a receptor (i.e. receptor-led effects), as defined below.

- Project lifetime effects – assessment of the scope for effects that occur throughout more than one phase of the Project (construction, operation and maintenance and decommissioning) to interact to potentially create a more significant effect on a receptor than if assessed in isolation.
- Receptor-led effects – assessment of the scope for multiple effects to interact, spatially and temporally, to create inter-related effects on a receptor or receptor group. As an example, multiple effects on a given receptor, such as local residents, could include construction dust and noise, increased traffic and visual change which may interact to produce a greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects might be short term, temporary, or incorporate longer term effects.

Stage 4: Assessment of the Inter-related Effects on Each Receptor

20.4.17 Individual effects on each of the receptor groups identified above has then been considered. A descriptive assessment of the scope for these individual effects to interact to create a different or greater effect has been undertaken. The assessment is undertaken qualitatively based on the information available for the Project. Professional judgement is used to identify the likely inter-related effects that could occur at identified receptor locations. The assessment does not assign significance levels but instead a statement has been made as to whether the inter-related effects would be worse or better than the effects considered alone, and if so, whether this would be adverse or beneficial.

20.5 Assumptions and Limitations of Cumulative Assessment

20.5.1 The assessment of cumulative effects is based on the short listed developments and publicly available information. The short list of developments has been regularly updated. However, an appropriate cut off at September 2024 has been applied prior to publication of the ES to allow the assessment to be finalised. Therefore, any new applications which come forward after the cut -off have not been included in the ES. However, it is noted that new developments coming forward after the cut-off date for the ES could be considered during the examination period if required by the Examining Authority.

20.5.2 As with any assessment of cumulative effects, the outcome is based on the amount of information available for each other developments on the short list. The level of information available depends on which stage in the planning process the development is at: i.e. those for which an application has been submitted will have more information available compared to allocations in a local development plan. Similarly, the likelihood of a development coming forward is also highly dependent on the corresponding stage in the planning process. To overcome this, greater weight is given to those developments for which more information is available and is more likely to come forward. Any developments with limited information available, reasonable worst-case parameters have been assumed in the assessment. Any mitigation measures presented in planning applications or other planning documents for the ‘other developments’ are assumed to be brought forward in an application (where the application for these other developments has yet to be submitted) and implemented by the applicant (should planning permission be granted).

20.6 Inter-relationships Assessment

Table 20.7: Summary of Inter-related Effects Assessment

Assessment Phase	Summary	Significance
Historic Environment		
Construction	<i>Loss of vegetation to facilitate access for construction, maintenance and decommissioning</i>	No significant inter-related effects considered likely.
Operation and Maintenance		
Decommissioning	The removal of short sections of hedgerow at key access points (approximately 706 metres of loss) could lead to increased visibility of elements of the Project and therefore changes within the settings of designated heritage assets and the character of the historic landscape, as well as effects relating to landscape and visual impacts and ecology.	
Landscape and Visual Resources		
Construction	<i>Removal of sections of hedgerow to accommodate the Project</i>	No significant inter-related effects considered likely.
Operation and Maintenance		
Decommissioning	Loss of agricultural Land, impacting physical landscape and visual amenity Areas of the Project removed to accommodate known areas of archaeological interest. Effects on public rights of way (PRoW) Effects upon agricultural land - The Project will result in the loss of a large area of agricultural land, for the life of the Project, anticipated to be 40 years. The loss of agricultural land would also have an effect upon the physical landscape character and visual amenity of the area. Following decommissioning, the landscape would be returned to agriculture, where it is anticipated that the lack of intensive farming would have some beneficial effects upon the quality of the soil.	
		Moderate Adverse
Ecology and Nature Conservation		
Construction		

Assessment Phase	Summary	Significance
Operation and Maintenance Decommissioning	<p>Potential impacts of habitat loss, disturbance, pollution, contamination, air quality, vehicle emissions, Invasive, Non-native Species (INNS), severance and habitat creation on habitats and species.</p> <p>The potential for receptor led effects associated with the noise/ vibration, air quality and hydrology chapters. Fragmentation of ordinary watercourses which, in turn, could impact habitats of principal importance and protected species. The mitigation measures incorporated into the project commitments will ensure that these impacts are fully mitigated.</p>	Not Significant. No change resulting from inter-related assessment
Hydrology and Flood Risk		
Construction Operation and Maintenance Decommissioning	<p>Contamination of groundwater (including aquifers) from polluted surface water.</p> <p>Contamination of surface waters from polluted groundwater.</p> <p>Contamination of habitats and detrimental effects to ecology from polluted surface waters.</p> <p>Potential for receptor led effects between possible groundwater contamination and surface water hydrology, especially in relation to the watercourse crossings via Horizontal Directional Drilling (HDD) or other trenchless techniques.</p> <p>Effects associated with possible contamination or spillages and pollution of watercourses and therefore, water quality, including those potentially used as potable source, during construction.</p> <p>Effects between dust emissions and surface water hydrology during construction.</p>	Not Significant. No change resulting from inter-related assessment
Ground Conditions		
Construction Operation and Maintenance Decommissioning	<p>Negligible to minor adverse effects have been identified in relation to ground conditions and contamination associated with the proposed development. It is therefore not envisaged that there will be any significant inter-related effects.</p>	Not Significant. No change resulting from inter-related assessment
Traffic and Transport		
Construction Operation and Maintenance Decommissioning	<p>Effects on people associated with driver delay (including temporary delays to public transport services), non-motorised user delay, non-motorised user amenity and severance.</p> <p>Effects from transport with noise and vibration, air quality and human health. Effects would be managed through measures set out in the CoCP.</p>	Not Significant. No change resulting from inter-related assessment
Noise and Vibration		
Construction Operation and Maintenance Decommissioning	<p>Noise and vibration impact from construction and decommissioning activities (Construction and Decommissioning)</p>	Not Significant. No change resulting from

Assessment Phase	Summary	Significance
	<p>Noise and vibration impact from the operation of the Project (Operation)</p> <p>Noise and vibration do not typically combine with any other potential impact to worsen the effect on sensitive receptors</p>	inter-related assessment
Climate Change		
Construction	<p>Impact on human health in the form of physical and mental health risk factors, particularly around flooding and extremes of temperature; distribution of infectious diseases; threat to food supplies, dispersion and concentration of air pollutants.</p> <p>Impact on Ground Conditions causing a potential increase of leaching of contaminants from soil, destabilise dormant natural cavities within soluble limestone strata, settlement heave of foundations and earthworks, acceleration of breakdown of putrescible material in Made ground increasing rates of carbon dioxide and methane production, new potential sources of contamination through industrial based development, or new receptors during the duration of the Project such as proximity of residential receptors through further expansion of existing residential centres or modification of existing pathways potentially increasing risk of mobilisation of contaminants.</p>	No significant inter-related effects considered likely.
Operation and Maintenance		
Decommissioning		
Socio-economics		
Construction	<p>Project lifetime effects that occur throughout more than one phase of the Project (construction, operation and maintenance, and decommissioning).</p> <p>Tourism and visual effects and agricultural land use and employment</p>	Not Significant. No change resulting from inter-related assessment
Operation and Maintenance		
Decommissioning		
Human Health		
Construction	<p><i>Operation only:</i></p> <p>Combination of reduced access to healthy foods and effects on open space locally - access to healthy foods from loss of agricultural lands and a decrease in physical activity opportunity due to changes in accessibility of PRow.</p> <p>Combined effect of changes to community identity and public understanding of EMF risk - potential to affect an individual's sense of wellbeing associated with community identity</p> <p>Combination of public understanding of EMF risk and the uptake of active travel - proximity of substations and other visible electrical infrastructure to some PRow have the potential to increase perceived risks</p> <p>Combined national population benefits relating to climate change and wider societal resources - Nationally the population would benefit both from a reduction in the severity of health effects associated with climate change and from the benefits to public health of energy security.</p> <p><i>Construction & Decommissioning only:</i></p>	Not Significant. No change resulting from inter-related assessment
Operation and Maintenance		
Decommissioning		

Assessment Phase	Summary	Significance
	Combination of air quality, noise and transport effects - Construction and decommissioning activities may create effects for air quality, noise and transport access.	

Agricultural Land Use and Public Rights of Way

Construction	The temporary and permanent loss of agricultural land including BMV	Not Significant. No change resulting from inter-related assessment
Decommissioning	Temporary and permanent disruption to farm holdings Temporary and permanent disruption to the recreational use of PRoW	

Waste and Resources

Construction	Reduction in landfill void capacity – inert and non-hazardous	Not Significant. No change resulting from inter-related assessment
Operation and Maintenance		
Decommissioning	Reduction in landfill void capacity –hazardous Depletion of key resources	

Air Quality

Construction	The impact of dust soiling (annoyance) on property arising from dust emissions generated by onsite construction and decommissioning activities.	Not Significant. No change resulting from inter-related assessment
Operation and Maintenance		
Decommissioning		
	The impact of an increase in suspended particulate matter on people arising from dust emissions generated by onsite construction and decommissioning activities.	
	The impact of an increase in suspended particulate matter on ecology arising from dust emissions generated by onsite construction and decommissioning activities.	
	The impact of emissions from traffic on human-health receptors.	
	Dust generated during the construction phase will also affect human receptors that are also likely to experience increased noise and traffic levels. Mitigation measures to reduce the dust impact to a level that it not significant will be implemented as documented in the outline Code of Construction Practice (oCoCP) [EN010147/APP/7.6.1]. Noise and traffic will also be managed through the oCoCP so the inter-related effects are considered to remain not significant.	

20.7 Cumulative Effects Assessment

20.7.1 An assessment of cumulative effects has been undertaken and the results are presented in each of the topic chapters of this ES (Chapters 7 to 19). A summary of these effects is presented in Table 20.8.

Table 20.8: Summary of Cumulative Effects Assessment

Assessment Phase	Summary of Cumulative Effects	Relevant Cumulative Scheme(s)	Potential for Cumulative Significant Effects
Historic Environment			
Construction Operation and Maintenance Decommissioning	<p><i>Effect on Blenheim Palace WHS + Designated Heritage Assets</i></p> <p>Temporal overlap (20/0187/FUL) - This small solar farm is within the setting of the Blenheim Palace WHS. It is currently under construction and should be operational ahead of the construction of the Project. It would appear to be part of the Project as it would be very similar in appearance and is directly adjacent to the Project.</p> <p>Temporal overlap (21/00189/FUL / 21/00127/OUT / 16/01364/OUT) - These three areas of predominantly residential development are all located around the edge of Woodstock. These three developments can all be seen as falling within the setting of the Blenheim Palace WHS, therefore there is the potential for cumulative impacts to occur.</p> <p><i>Historic Landscape</i></p> <p>Although there is potential for cumulative impacts on the character of the historic landscape to occur with regard to all of the schemes considered within the CEA, the overall magnitude of impact and level of effect would remain the same as for the Project when considered on its own.</p>	<p>20/0187/FUL Land between Woodstock Sewage Works and B4027 – Blenheim Net Zero solar farm</p> <p>21/00189/FUL Land north of Hill Rise, Woodstock, residential development of 180 dwellings</p> <p>21/00127/OUT Land north of Banbury Road, Woodstock, residential development of 235 dwellings</p> <p>16/01364/OUT Land east of Woodstock, residential development of 300 dwellings</p> <p>P22/V0144/SCR Red House Farm solar farm on c. 63.1 ha. of land</p> <p>NGET Botley West substation</p>	<p>No change of environmental effects beyond those assessed for individual schemes. No significant cumulative effects considered likely.</p>
NGET	<p>The potential alternative location for the NGET Botley West substation is directly adjacent to the Order Limits for the Project and is within the settings of some of the same designated heritage assets which also have visibility of the Project, specifically the Grade II listed Red House Farmhouse (NHLE 1048341). However, the distance between the designated heritage assets and the potential alternative location for the NGET Botley West substation is such that the cumulative impact on the significance of the Grade II listed Red House Farmhouse would be no greater than for the Project when considered on its own.</p>		

Assessment Phase	Summary of Cumulative Effects	Relevant Cumulative Scheme(s)	Potential for Cumulative Significant Effects
Landscape and Visual Resources			
Construction Operation Maintenance Decommissioning	Temporal overlap during construction, operation & and maintenance, and decommissioning phases.	20/01734/OUT Salt Cross Garden Village 21/00217/OUT Land North of Banbury Road, Woodstock 22/00747/OUT Land at Bicester Road, Kidlington 21/03522/OUT West of Rutten Lane, Yarnton 23/00517/F New Science Park 19/02516/FUL Twelve Acre Farm - Solar Farm 20/01734/OUT Land North Of A40 Section From Barnard Gate To Eynsham Roundabout Eynsham Oxfordshire (Oxfordshire Garden Village) 15/00761/FUL (EW2) West Eynsham Strategic Development Area 22/01715/OUT Land South of Perdiswell Farm, Shipton Road P23/V2624/FUL Red House Farm, Botley	No significant effects considered likely with exception of Year 1 operation effect for 21/00217/OUT where the cumulative effects is Moderate Adverse upon the relatively small LCA 4: Eastern Parks and Valleys.
NGET	The Southern Site area of the Project is located within landscape character area (LM19). Development of the NGET to the area immediately west of the Southern Site area would remain entirely located within this landscape character area. Its development and operation offsite would not be expected to introduce any greater effects beyond those that would otherwise occur if the NGET were to be delivered within the Project limits. Effects are considered to be displaced and no contributory cumulative effects are anticipated to occur.		

Assessment Phase	Summary of Cumulative Effects	Relevant Cumulative Scheme(s)	Potential for Cumulative Significant Effects
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Ecology and Nature Conservation

<p>Construction</p> <p>Operation</p> <p>Maintenance</p> <p>Decommissioning</p>	<p><i>The impact of temporary and permanent habitat loss during construction of the Project</i></p> <ul style="list-style-type: none"> • Breeding bird assemblage • Wintering bird assemblage • Great crested newt • Badger • Brown hare and hedgehog <p><i>The impact of habitat disturbance during construction of the Project</i></p> <ul style="list-style-type: none"> • Nationally Designated Sites • Locally Designated Sites • Broadleaved woodland HPI • Floodplain Meadow HPI • Waterbodies (including ponds and watercourses HPIs) - Minor Adverse • Hedgerows HPI • Important Hedgerows • Breeding bird assemblage • Wintering bird assemblage • Great crested newt • Badger • Bat species assemblage • Terrestrial invertebrate assemblage • Dormouse • Otter 	<p>20/01734/OUT Salt Cross Garden Village</p> <p>16/01364/OUT Land east of Woodstock</p> <p>20/01817/FUL Land Between Woodstock Sewage Works And B4027 - Solar Farm</p> <p>21/03522/OUT West of Rutten Lane, Yarnton</p> <p>21/00189/FUL Land north of Hill Rise, Woodstock</p> <p>P23/V2624/FUL Red House Farm, Botley</p>	<p>No change of environmental effects beyond those assessed for individual schemes. No significant cumulative effects considered likely.</p>
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Assessment Phase	Summary of Cumulative Effects	Relevant Cumulative Scheme(s)	Potential for Cumulative Significant Effects
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- Brown hare and hedgehog

NGET	The Southern Site Area of the Project comprises a series of arable fields separated by a well-developed hedgerow network. Development of the NGET to the area immediately west of the Southern Site Area would also be located on similar habitat types. Its development and operation offsite would not be expected to introduce any greater effects beyond those that would otherwise occur if the NGET were to be delivered within the Project limits. Effects are considered to be displaced and no contributory cumulative effects are anticipated to occur.		
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Hydrology and Flood Risk

Construction Operation and Maintenance Decommissioning	<ul style="list-style-type: none"> • Biologically designated SSSIs (Blenheim Park, Sheep's Banks, Shipton-on-Cherwell & Whitehill Quarries, Witham Ditches & Flushes, Wytham Woods, Rushy Meadow) and Long mead Local Wildlife. 	Tier 1, 2 and 3 Developments with greatest potential for cumulative effects include new highway infrastructure, large scale housing and commercial developments and renewable energy development.	No change of environmental effects beyond those assessed for individual schemes. No significant cumulative effects considered likely.
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Ground Conditions

Construction Operation and Maintenance Decommissioning	<ul style="list-style-type: none"> • Ground contamination on soil/groundwater. • Ground contamination on surface water. • Ground contamination on future users. • Ground contamination on off-site users. 	All schemes	No change of environmental effects beyond those assessed for individual schemes. No significant cumulative effects considered likely.
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NGET	The NGET Substation has the potential to be located adjacent to the Site. It is assumed, where relevant, in accordance with NPS, the NPPF and PPG, that this substation would be required to implement a series of construction, operation and decommissioning mitigation measures. This is in order to manage flood risk and water quality, including attenuation of impermeable areas to the relevant flood event including climate change allowance. As such no likely significant effects are predicted to result with respect to the NGET Substation.		
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Traffic and Transport

Assessment Phase	Summary of Cumulative Effects	Relevant Cumulative Scheme(s)	Potential for Cumulative Significant Effects
Construction	<ul style="list-style-type: none"> The impact of increases in traffic flows as a result of construction traffic upon driver (including public transport) and non-motorised user delay or fear and intimidation (non-motorised user amenity) for users of the LRN and SRN. The impact of increases in traffic flows as a result of construction traffic upon severance for users of the LRN and SRN. The impact of increases in traffic flows as a result of construction traffic upon road safety for users of the LRN, SRN and other transport receptors. 	10 Tier 1 schemes and 4 Tier 2 schemes. Sites that are considered to generate a material volume of traffic into the traffic and transport study area during 2026 have been included within the Cumulative Effects Assessment.	No change of environmental effects beyond those assessed for individual schemes. No significant cumulative effects considered likely.
Operation and Maintenance	N/A		
Decommissioning	N/A		
NGET	The NGET substation has been assessed as part of the Project but alternatively it may be located adjacent to the Site. In this situation the land identified within the Site for the NGET substation would be developed with solar PV panels. The placement of the NGET substation outside the Order Limits would not give rise to any additional cumulative effects because its peak traffic generation has already been assessed as part of the Project.		

Noise and Vibration

Construction	<ul style="list-style-type: none"> Noise and vibration impacts from construction and decommissioning activities; and Noise and vibration impacts from the operation of the Project. 	20/01734/OUT Salt Cross Garden Village	No change of environmental effects beyond those assessed for individual schemes. No significant cumulative effects considered likely.
Operation and Maintenance		20/0187/FUL Land between Woodstock Sewage Works and B4027 – Blenheim Net Zero solar farm	
Decommissioning		21/03522/OUT West of Rutten Lane, Yarnton	
		23/02098/OUT P22/V2581/SCO	

Assessment Phase	Summary of Cumulative Effects	Relevant Cumulative Scheme(s)	Potential for Cumulative Significant Effects
Climate Change			
Construction Operation and Maintenance Decommissioning	Potential to impact the atmospheric mass of GHGs as a receptor, and so may have a cumulative impact on climate change irrespective of geographic location.	No relevant cumulative effects assessment has been completed for this climate change chapter in relation to additional schemes not required for Project delivery, except for commentary on the NGET substation under option 2	Cumulative effects due to other specific local development projects cannot be individually identified and assessed, therefore no relevant cumulative effects assessment has been completed for the climate change chapter.
NGET	The potential emissions during construction, assessed cumulatively, would be 23,732 tCO ₂ e if NGET is carried out outside the Project boundary. Under this option the emissions for the Project during construction would be reduced by 23,732 tCO ₂ e, to amount to 693,274 tCO ₂ e.		
Socio-economics			
Construction	Construction employment generation for solar farm developments, residential developments and commercial developments. Temporary accommodation demand from construction workers.	30 Tier 1 developments which are within a 15km distance of the Order Limits.	No change of environmental effects beyond those assessed for individual schemes. No significant cumulative effects considered likely.
Operation and Maintenance	N/A		
Decommissioning	N/A		
NGET	Development and operation of the NGET to the area immediately west of the Southern Site area would not be expected to introduce any greater socio-economic effects beyond those that would otherwise occur if the NGET were to be delivered within the Project limits. Effects are considered to be displaced and no contributory cumulative effects are anticipated to occur.		

Assessment Phase	Summary of Cumulative Effects	Relevant Cumulative Scheme(s)	Potential for Cumulative Significant Effects
Human Health			
Construction	Diet and nutrition.	All schemes that are residential and energy infrastructure.	No change of environmental effects beyond those assessed for individual schemes. No significant cumulative effects considered likely.
Operation and Maintenance	Open space, leisure and play.		
	Transport modes, access and connections.		
Decommissioning	Community identity, culture, resilience and influence. Education & Training. Employment & income. Climate change & adaptation. Air Quality. Noise & Vibration. Public understanding of EMF risk. Wider societal infrastructure and resources.		
NGET	The NGET substation and its impacts on several health determinants has been assessed as part of the Project but alternatively it may be located adjacent to the Site. Its development and operation offsite would not be expected to introduce any greater effects beyond those that would otherwise occur if the NGET were to be delivered within the Project limits (assuming it will still adhere to relevant planning policy and EMF guidelines such as the DECC Voluntary Code of Practice and ICNIRP public exposure guidelines; and have appropriate mitigation measures in place). Effects are considered to be displaced and no contributory cumulative effects are anticipated to occur.		
Agricultural Land Use and Public Rights of Way			
Construction	Temporary loss of BMV agricultural land.	All schemes.	No significant effects considered likely.
	Permanent loss of BMV agricultural land.		Major Adverse on Tier 1 Projects.
	Temporary and Permanent disruption to farm holding reduced access to agricultural land.		Moderate Adverse on Tier 2 projects.
	Temporary and Permanent disruption or reduced access to PRow (footpaths and bridleways).		No significant effects considered likely.

Assessment Phase	Summary of Cumulative Effects	Relevant Cumulative Scheme(s)	Potential for Cumulative Significant Effects
Decommissioning	No significant cumulative effects have been identified.		No significant effects considered likely.
NGET	No cumulative effects are anticipated with the potential location of the NGET substation outside the DCO boundary for this Project. The permanent loss of the agricultural land, if removed from the DCO boundary, would be replaced by solar infrastructure within the DCO boundary, which would be temporary and would not permanently affect the quality of the soils or agricultural land.		
Waste and Resources			
Construction	Reduction in landfill void capacity – inert and non-hazardous waste.	All schemes.	No significant effects considered likely.
Operation and Maintenance	Reduction in landfill void capacity – inert -hazardous waste.		
Decommissioning	Depletion of resources (construction only).		
NGET	Waste from the NGET substation would be managed by National Grid. No significant cumulative effects on landfill void capacity are anticipated with the potential location of the NGET substation outside the DCO boundary.		
Air Quality			
Construction	Impact of dust soiling (annoyance) on property arising from dust emissions generated by onsite construction and decommissioning activities.	All schemes.	No significant effects considered likely.
Decommissioning	Impact of increases in suspended particulate matter on human receptors arising from dust emissions generated by onsite construction and decommissioning activities. The impact of increases in pollutants on human receptors arising from traffic emissions generated by construction traffic.		
NGET	The NGET substation has been assessed as part of the Project but alternatively it may be located adjacent to the Site. In this situation the land identified within the Site for the NGET substation would be developed with solar PV panels. The placement of the NGET substation outside the Order Limits could give rise to cumulative effects		

20.8 Summary

- 20.8.1 This chapter considers the cumulative effects arising from the Project during the construction and operation and maintenance and decommissioning phases. The cumulative assessment uses a short list of 'other developments' which could result in cumulative effects on the same receptors as the Project.
- 20.8.2 The CEA concludes that significant effects are not likely in relation to many of the topic areas. Significant effects could occur in relation to permanent loss of BMV agricultural land during construction of the Project and other Tier 1 and Tier 2 projects, this is considered major adverse. No further significant effects are considered likely.

20.9 References

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