



WHITESTONE
solar farm

WHITESTONE SOLAR FARM

Volume 6: Environmental Statement

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Glossary

Term	Meaning
<i>Cable Corridors</i>	Corridors within which the high voltage cables would be constructed.
<i>Draft Environmental Statement</i>	The Draft Environmental Statement which presented the preliminary environmental information relating to the Proposed Development. The Draft ES was prepared to present information for statutory consultation in accordance with current EIA regulation.

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Term	Meaning
<i>Environmental Statement (ES)</i>	The Environmental Statement which presents the environmental information relating to the Proposed Development. The ES has been prepared to present information for formal consultation in accordance with current EIA regulation.
<i>Order Limits</i>	Maximum extent of the Proposed Development comprising the Site and Cable Corridors.
<i>Scoping Opinion</i>	The opinion in response from the relevant consenting authority to an EIA Scoping Report adopted by the Secretary of State on 3 June 2025 which sets out the aspects to be assessed within an EIA. Informed by consultation with the relevant statutory bodies.
<i>The Applicant</i>	Whitestone Net Zero Ltd.
<i>The Application</i>	The Application submitted to the Secretary of State for Energy Security and Net Zero for a Development Consent Order.
<i>The Proposed Development</i>	The proposed Whitestone Solar Farm.
<i>The Site</i>	The land planned to be used for solar PV array and associated infrastructure, BESS, substation, landscaping and habitat enhancement. The Site is split into W1, W2, and W3.
<i>Whitestone 1 (W1)</i>	The northern parcels of the Whitestone Solar Farm.
<i>Whitestone 2 (W2)</i>	The middle parcels of the Whitestone Solar Farm.
<i>Whitestone 3 (W3)</i>	The southern parcels of the Whitestone Solar Farm.

Acronyms

Acronym	Meaning
<i>AIL</i>	Abnormal Indivisible Load
<i>ALC</i>	Agricultural Land Classification
<i>BESS</i>	Battery Energy Storage System
<i>BMV</i>	Best and Most Versatile
<i>CCRA</i>	Climate Change Risk Assessment
<i>CDC</i>	City of Doncaster Council
<i>CEA</i>	Cumulative Effects Assessment
<i>CEMP</i>	Construction Environmental Management Plan
<i>CTMP</i>	Construction Traffic Management Plan
<i>DEMP</i>	Decommissioning Environmental Management Plan
<i>DMRB</i>	Design Manual for Roads and Bridges
<i>EA</i>	Environment Agency
<i>EIA</i>	Environmental Impact Assessment
<i>EMF</i>	Electromagnetic Fields
<i>ES</i>	Environmental Statement
<i>EU</i>	European Union

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Acronym	Meaning
<i>GHG</i>	Greenhouse Gas
<i>GIS</i>	Geographic Information System
<i>GVA</i>	Gross Value Added
<i>HSE</i>	Health and Safety Executive
<i>ICCI</i>	In-Combination Climate Impacts
<i>ICNIRP</i>	International Commission on Non-Ionizing Radiation Protection
<i>IEMA</i>	Institute of Environmental Management and Environmental Assessment
<i>ISEP</i>	Institute of Sustainability and Environmental Professionals
<i>LCA</i>	Local Character Area
<i>LCT</i>	Local Character Type
<i>LPA</i>	Local Planning Authority
<i>LSE</i>	Likely Significant Effect
<i>LVIA</i>	Landscape and Visual Impact Assessment
<i>MADs</i>	Major Accidents and Disasters
<i>NEDDC</i>	North-East Derbyshire District Council
<i>NPPF</i>	National Planning Policy Framework
<i>NPS</i>	National Policy Statement
<i>NSIP</i>	Nationally Significant Infrastructure Project
<i>oBSMP</i>	Outline Battery Safety Management Plan
<i>oCEMP</i>	Outline Construction Environmental Management Plan
<i>oPRoWMP</i>	Outline Public Rights of Way Management Plan
<i>PRoW</i>	Public Rights of Way
<i>PV</i>	Photovoltaic
<i>RMBC</i>	Rotherham Metropolitan Borough Council
<i>SRN</i>	Strategic Road Network
<i>TCPA</i>	Town and Country Planning Applications
<i>WFD</i>	Water Framework Directive
<i>W1</i>	Whitestone 1
<i>W2</i>	Whitestone 2
<i>W3</i>	Whitestone 3
<i>ZoI</i>	Zone of Influence
<i>ZTV</i>	Zone of Theoretical Visibility

Units

Units	Meaning
<i>ha</i>	Hectares
<i>km</i>	Kilometres

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Units	Meaning
<i>m</i>	Metres
<i>MW</i>	Megawatt

17 CUMULATIVE EFFECTS

17.1 Introduction

- 17.1.1 This Chapter of the Environmental Statement (ES) evaluates the potential cumulative effects of the construction, operation and maintenance, and decommissioning of Whitestone Solar Farm (the Proposed Development). The Proposed Development is described in **ES Volume 1, Chapter 5: The Proposed Development [EN0110020/APP/6.5]**.
- 17.1.2 There are two generally recognised types of cumulative effects:
- Intra-project effects; and
 - Inter-project effects.
- 17.1.3 Under the Institute of Sustainability and Environmental Professionals (ISEP) (formerly Institute of Environmental Management and Assessment (IEMA)) guidance¹, intra-project effects can be defined as those that occur where a single receptor is affected by more than one source of effect arising from different aspects of the Proposed Development. An example of an intra-project effect would be where a local resident is affected by dust, noise and traffic disruption during the construction of a scheme, with the result being a greater nuisance than each individual effect alone.
- 17.1.4 Inter-project effects refer to the impacts that arise from other existing and / or approved development within reasonable proximity of the Proposed Development, which individually might not be Significant, but when considered together could create a Significant cumulative effect on a shared receptor. The cumulative effects refer to the impacts, whether beneficial or adverse, direct or indirect, and both long-term and short-term that result from a variety of activities occurring within a specific area or region.

Order Limits

- 17.1.5 The extent of the Order Limits are described in **ES Volume 1, Chapter 3: The Site and Surrounding Area [EN0110020/APP/6.3]** and shown in **ES Volume 3, Figure 3.1: Order Limits [EN0110020/APP/6.19]**. The Proposed Development is described in **ES Volume 1, Chapter 5: The Proposed Development [EN0110020/APP/6.5]** and shown spatially on the **Works Plans [EN0110020/APP/2.3]**.

The Proposed Development

- 17.1.6 The Proposed Development involves the construction, operation and maintenance, and decommissioning of more than 100 megawatt (MW) of solar photovoltaic (PV) array, Battery Energy Storage System (BESS), onsite substations and supporting infrastructure, and grid connection infrastructure. The grid connection infrastructure would connect the Proposed Development to the National Grid at the new 400 kilovolt (kV) National Grid substation proposed on land immediately east of Long Lane, Brinsworth, S60 4JJ (Long Lane 400kV Substation). National Grid has applied to Rotherham Metropolitan Borough Council for the development of this new substation which is intended by National

Grid to be operational in time for the Proposed Development to connect in 2029. This substation is therefore not included in the Proposed Development and is subject to a separate planning application taken forward by National Grid.

- 17.1.7 As the Proposed Development would have a generating capacity in excess of 100 MW, it is considered to be a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008.
- 17.1.8 The Proposed Development would be located within the Order Limits. The Order Limits encompass the total area of the Proposed Development comprising the Site and Cable Corridors. The Site is specifically the land that is planned to be used for solar PV array and associated infrastructure, BESS, substation, landscaping and habitat enhancement. The Site is split into Whitestone 1 (W1), Whitestone 2 (W2), and Whitestone 3 (W3).
- 17.1.9 Highway Works are sections of the highway network that will contain localised improvements, such as improvements to road edge where it is deteriorated, or temporary highway and traffic works required to safely accommodate the Abnormal Indivisible Load (AIL) deliveries. These areas will support the movement of construction vehicles on narrower sections of the local highway network within parts of the construction vehicle routes to the Site (as described in **ES Volume 2, Chapter 13: Traffic and Transport [EN0110020/APP/6.13]**)
- 17.1.10 The cumulative effects assessments (CEA) draw on the conclusions reached within the technical chapters of the ES, and these should be referred to in order to find further information on individual technical assessments and potential impacts of the Proposed Development. These are found in **ES Volume 2, Chapters 6 to 16 [EN0110020/APP/6.6-6.16]**.
- 17.1.11 This Chapter of the ES includes the following sections:
- Legislation, Policy, and Guidance;
 - Consultation;
 - Assessment Methodology;
 - Intra-Project Cumulative Effects; and
 - Inter-Project Cumulative Effects.
- 17.1.12 This Chapter is supported by the following figures in **ES Volume 3, Figures [EN0110020/APP/6.19]**:
- **Figure 17.1: Long-List of Cumulative Developments;**
 - **Figure 17.2: Cumulative Effects Assessment – Zones of Influence within 1km;** and
 - **Figure 17.3: Cumulative Effects Assessment – Zones of Influence within 10km.**
- 17.1.13 This Chapter is supported by the following appendices in **ES Volume 3, Appendices [EN0110020/APP/6.20]**:
- **Appendix 17.1: Legislation, Policy and Guidance;** and
 - **Appendix 17.2: Long List of Developments for Cumulative Effects Assessment.**

17.2 Legislation, Policy and Guidance

17.2.1 The legislation, policy, and guidance related to the assessment of cumulative effects, as detailed in **ES Volume 3, Appendix 17.1: Legislation, Policy and Guidance [EN0110020/APP/6.20]**, and relevant to the Proposed Development, are outlined below.

Legislation

17.2.2 Legislation that has been considered includes:

- The European Union (EU) EIA Directive 2014/52/EU², amending EIA Directive 2011/92/EU³; and
- The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017/572⁴ ('The EIA Regulations').

National Planning Policy

17.2.3 National policy that has been considered includes:

- Overarching National Policy Statement (NPS) for Energy (EN-1) 2025⁵;
- National Policy Statement for Renewable Energy Infrastructure (EN-3) 2025⁶; and
- National Policy Statement for Electricity Networks Infrastructure (EN-5) 2025⁷; and
- National Planning Policy Framework (NPPF) (2024)⁸.

Local Planning Policy

17.2.4 Local planning policy that has been considered includes:

- City of Doncaster Local Plan, 2015-2035⁹;
- Rotherham Local Plan: Core Strategy, 2014¹⁰ and Sites and Policies Plan, 2018¹¹;
- Local Plan for Bolsover District, 2020¹²;
- Adopted North East Derbyshire Local Plan 2014-2034¹³; and
- Bassetlaw Local Plan 2020-2038¹⁴.

17.2.5 No relevant policy was identified for Derbyshire County Council, who defer to North East Derbyshire District Council for planning policy.

Guidance

17.2.6 Supporting guidance that has been considered includes:

- Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment¹⁵;
- ISEP (formerly 'IEMA') Impact Assessment Outlook Journal-Volume 7¹⁶; and

- European Commission Guidance: Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report¹⁷.

17.2.7 More detailed information regarding the above legislation, policy and guidance can be found in **ES Volume 3, Appendix 17.1: Legislation, Policy and Guidance [EN0110020/APP/6.20]**.

17.3 Consultation

17.3.1 This section provides a summary of the consultation undertaken prior to the publication of the ES regarding the Proposed Development.

EIA Scoping

- 17.3.2 A Scoping Opinion was sought from the Planning Inspectorate to determine the content of the assessment, as well as the approach and methods to be used. The outcomes of this exercise were documented in the Scoping Report (**ES Volume 3, Appendix 2.1: EIA Scoping Report [EN0110020/APP/6.20]**), which was submitted to the Planning Inspectorate on 23 April 2025. The Scoping Report captures the findings of the scoping exercise and outlines the technical guidance, standards, best practices, and criteria to be applied in the assessment of cumulative effects from the Proposed Development.
- 17.3.3 A Scoping Opinion was received from the Planning Inspectorate on 3 June 2025 (**ES Volume 3, Appendix 2.2: EIA Scoping Opinion [EN0110020/APP/6.20]**).
- 17.3.4 **Table 17.1** summarises how this Chapter of the ES addresses key points from the EIA Scoping Opinion comments related to cumulative effects.

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Table 17.1: Scoping Opinion Comments and How They Are Addressed in the ES

Consultee	Issue Raised	How This Is Addressed	Where This Is Addressed In The ES
<p><i>The Planning Inspectorate</i></p>	<p>ID: 3.122 Location of Developments Considered in the CEA: <i>“Appendix F of the Scoping Report lists the current projects considered cumulatively with the Proposed Development. This provides a description and distance to the Proposed Development and the reason whether they would be progress to stage 3 of the CEA. This list should be kept under review and updated accordingly in consultation with the relevant bodies to inform the assessment of likely significant cumulative effects in the ES. For the avoidance of doubt, the Applicant should seek to agree its list of cumulative developments with the relevant LPAs.”</i></p>	<p>The list of projects considered cumulatively with the Proposed Development has been continually reviewed and updated, where required, using a combination of resources including the planning application registers of the Local Planning Authorities (LPAs) within the CEA Zones of Influence (Zols), the Landstack service, and GIS mapping. The long list has been finalised for the ES with input and agreement from stakeholders including the City of Doncaster Council (CDC), Rotherham Metropolitan Borough Council (RMBC) and North East Derbyshire District Council (NEDDC).</p>	<p>ES Volume 3, Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]</p>
<p><i>The Planning Inspectorate</i></p>	<p>ID: 3.122 Location of Developments Considered in the CEA: <i>“The ES should include a figure depicting the locations and extent of cumulative developments in relation to the Proposed Development.”</i></p>	<p>A figure depicting the long-list developments considered in the CEA, is provided in ES Volume 3, Figure 17.1 [EN0110020/APP/6.19].</p>	<p>ES Volume 3, Figure 17.1 [EN0110020/APP/6.19]</p>

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Consultee	Issue Raised	How This Is Addressed	Where This Is Addressed In The ES
<p><i>The Planning Inspectorate</i></p>	<p>ID: 3.2.8 Cumulative Effects of Similar Developments Without Intervisibility or Outside of the Study Area</p> <p>Re: Landscape and visual preliminary assessment:</p> <p><i>“Cumulative effects of similar developments without intervisibility or outside of the Study Area.</i></p> <p><i>The Applicant proposes to scope out an assessment of cumulative landscape and visual effects for development that is located beyond the Study Area or without intervisibility.</i></p> <p><i>The Inspectorate considers that there is potential for effects on receptors where the [Zone of Theoretical Visibility] ZTVs of the Proposed Development and a cumulative scheme overlap rather than where two cumulative schemes have intervisibility or is located within the Study Area presented in Figure 8.1 (which also excludes the Cable Corridors). On this basis, the Inspectorate does not agree to scope this matter out.</i></p> <p><i>The ES should present an appropriate methodology for identifying and assessing cumulative</i></p>	<p>The LVIA has included an assessment of similar development types and identified where Significant effects are likely to arise. A Zol for Landscape and Visual effects of 3km has been used (including the Cable Corridors), and inter-visibility has been considered based on professional judgement and available information.</p>	<p>Referenced within ES Volume 2, Chapter 17: Cumulative Effects [EN0110020/APP/6.17], and detailed cumulative effects assessment for landscape and visual detailed in ES Volume 2, Chapter 7: Landscape and Visual [EN0110020/APP/6.7]</p>

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Consultee	Issue Raised	How This Is Addressed	Where This Is Addressed In The ES
	<p><i>Landscape and Visual Impact Assessment (LVIA) effects and provide an assessment of effects where they are likely to be significant or provide evidence to demonstrate the absence of likely significant effects (LSEs) including agreement with relevant consultation bodies.”</i></p>		
<p><i>The Planning Inspectorate</i></p>	<p>ID: 3.3.4 Study Area of Cumulative Impacts Cultural Heritage and Archaeology Assessment:</p> <p><i>“The Scoping Report states that a 3km Study Area will serve as the initial extent of the cumulative impact assessment and consideration would also be given to other relevant assets located beyond this search area.</i></p> <p><i>The Inspectorate considers the Application of an arbitrary 3km is not appropriate to determine the Study Area for cumulative effects.</i></p> <p><i>The ES should present an appropriate methodology for identifying and assessing cumulative effects and provide an assessment where effects are likely to be significant. The ES should</i></p>	<p>The assessment of Indirect Effects has not been limited to a 3km Study Area. The assessment of indirect effects has been guided by potential overlapping Site boundaries, the bare earth ZTV of the Proposed Development and the sensitivity of surrounding assets to a change in their setting and the 3km Study Area has not been used as an arbitrary cut off point. High value assets beyond 3km have been included within a Sieving Exercise and included for detailed assessment of Indirect Effects relating to Setting, where they fall within the bare earth ZTV and long-distance views towards the Proposed Development.</p>	<p>Detailed within ES Volume 2, Chapter 8: Cultural Heritage and Archaeology [EN0110020/APP/6.8] and ES Volume 3, Appendix 8.3: Sieving Exercise [EN0110020/APP/6.20].</p>

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Consultee	Issue Raised	How This Is Addressed	Where This Is Addressed In The ES
	<i>demonstrate any relevant agreement with consultees.”</i>		
<i>The Planning Inspectorate</i>	<p>ID: 3.5.5 Cumulative Effects During Operation Water Resources and Flood Risk Assessment: <i>“The Scoping Report does not explain why cumulative effects are not proposed to be assessed during operation. As impacts during operation are identified in Scoping Report paragraph 11.4.2, the Inspectorate considers that these could act cumulatively with other plans and projects during operation. The ES describe an appropriate methodology for identifying and assessing cumulative effects and should provide an assessment of LSE with cumulative schemes for all phases of the development where they are likely to occur.”</i></p>	<p>The potential cumulative effects of the Proposed Development, with respect to the water resources and flood risk during the operational phase, are considered within the cumulative assessment in the ES.</p>	<p>The water resources and flood risk aspect of the CEA is detailed within ES Volume 2, Chapter 10: Water Resources and Flood Risk [EN0110020/APP/6.10] and referred to in ES Volume 2, Chapter 17: Cumulative Effects [EN0110020/APP/6.17]. The methodology for identifying and assessing cumulative effects is detailed in Section 17.4 below.</p>
<i>Historic England</i>	<p>Extract from letter sent by Historic England to The Planning Inspectorate (Letter reference: PL00797498):</p> <p>Re: Cultural Heritage and Archaeology: <i>“Cumulative effects on the significance of designated and</i></p>	<p>The CEA has analysed the cumulative effects on the significance of designated and non-designated heritage assets and landscape character types. The cumulative effects of the Proposed Development, and other nearby developments on a single receptor will be considered in the ES.</p>	<p>ES Volume 2, Chapter 17: Cumulative Effects [EN0110020/APP/6.17] and cumulative effects on heritage assets and landscape character are assessed within ES Volume 2, Chapter 8: Cultural Heritage and Archaeology [EN0110020/APP/6.8] and ES</p>

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Consultee	Issue Raised	How This Is Addressed	Where This Is Addressed In The ES
	<p><i>non-designated heritage assets and the landscape character should be thoroughly analysed and presented in the ES. Cumulative effects of the development alongside those of other Proposed Developments in a defined geographic proximity to the project; and cumulative effects for a single receptor where multiple impacts are predicted to arise from the scheme, should be considered".</i></p>		<p>Volume 2, Chapter 7: Landscape and Visual [EN0110020/APP/6.7] respectively.</p>

Issues Scoped Out of Assessment

17.3.5 Following the scoping exercise, some elements were scoped out of assessment in this ES. **Table 17.2** presents the issues scoped out of assessment.

Table 17.2: Issues Scoped Out of the Assessment

Potential Effect / Topic	Proposal for Assessment within EIA	Development Phase	Rationale
Greenhouse gas emissions	Scoped Out	Construction, Operation and maintenance, Decommissioning	The contribution of greenhouse gases emitted by the Proposed Development to global climate change is an intrinsic part of the climate change assessment in ES Volume 2, Chapter 11: Climate Change and Greenhouse Gas Emissions [EN0110020/APP/6.11] and requires no additional consideration in this Chapter in terms of cumulative effects.
Major accidents and disasters	Scoped Out	Construction, Operation and maintenance, Decommissioning	The possible cumulative effects of major accidents and disasters have been integrally considered in ES Volume 2, Chapter 16: Other Environmental Topics [EN0110020/APP/6.16] . Such potential effects are effectively controlled under other legislation through the Health and Safety Executive (HSE) and the Environment Agency (EA). Therefore, no further assessment of these effects is considered in this report.
Waste	Scoped Out	Construction, Operation and maintenance, Decommissioning	Cumulative effects are considered as an inherent part of the waste assessment (ES Volume 2, Chapter 16: Other Environmental Topics [EN0110020/APP/6.16]).

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			The potential effects on the capacity of local waste management infrastructure during construction and operation takes into account the likely ongoing demands on such infrastructure from other developments and activities. No further assessment for Waste is therefore required in the CEA.
Glint and glare – Aviation receptors	Scoped Out	Operation and maintenance	Cumulative effects are not possible for aviation receptors, as magnitude of impact is derived from the intensity of glare predicted, not duration. Intensity is not cumulative, and as such cumulative effects are not possible and not discussed further in this Chapter.

Statutory Consultation

- 17.3.6 A Statutory Consultation period was held between 16 September and 28 October 2025 in line with Section 47 of the Planning Act 2008. Feedback was sought from the local community and a range of consultee bodies based on the preliminary information and assessments presented in the Draft Environmental Statement (Draft ES).
- 17.3.7 **Table 17.3** presents feedback from statutory consultees given at Statutory Consultation, and how this is addressed in this ES.

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Table 17.3: Statutory Consultation Feedback from the Statutory Consultation Period

Consultee	Consultee Feedback	How This is Addressed	Where This is Addressed in this ES
Sheffield & Rotherham Wildlife Trust	<p><i>Cumulative Development Impacts – The Environmental Impact Assessment identifies other nearby infrastructure schemes, yet no detailed cumulative assessment has been presented publicly. The combined footprint of WS1-3, plus grid connection works, could overwhelm local ecosystems and flood resilience.</i></p> <p><i>Vibrations – the cumulative impact of all the substations in such proximity could seriously impact wildlife within a wide area due to the scale of the development.</i></p>	<p>Cumulative effects have now been considered in detail within the ES. Inter-project effects are considered within individual technical chapters, and intra-project effects on ecological receptors are considered within the biodiversity assessment.</p>	<p>Inter-project effects are considered within the Technical Chapters (ES Volume 2, Chapters 6 – 16 [EN0110020/APP/6.6 – 6.16])</p> <p>Cumulative impacts on ecological receptors are assessed within ES Volume 2, Chapter 6: Biodiversity and Nature Conservation [EN0110020/APP/6.6]</p>
City of Doncaster Council (CDC)	<p><i>CDC is satisfied with the approach taken to cumulative developments set out in Chapter 17. The Applicant may wish to note the following applications are currently under consideration. Whilst at this stage, these do not constitute committed developments, the Applicant should keep this under review as the EIA work progresses.</i></p> <p><i>23/02634/FULM – Land to the south of Barnsley Road, to the East and West of Marr Grange Lane, Marr. Installation of ground mounted photovoltaic farm with associated infrastructure, engineering works, access and landscaping.</i></p>	<p>The applications noted by CDC have been considered for inclusion in the cumulative effects assessment, and 23/02634/FULM was added to the cumulative long list due to the potential of inter-project effects too occur with the Proposed Development.</p> <p>The suggested developments 25/01535/FULM and 25/01250/SCRE were considered by the Applicant and were deemed to not have the potential to cause cumulative effects with the Proposed Development based on temporal or spatial overlaps,</p>	<p>Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20].</p>

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	<p><i>25/01535/FULM – Land off Elmsall Lane and North of Moorhouse Lane, Moorhouse. Installation of ground mounted photovoltaic farm and battery energy storage development with associated infrastructure, engineering works, landscaping and access.</i></p> <p><i>Furthermore, CDC has recently issued a Screening Opinion under our reference 25/01250/SCRE for 9.9MW ground mounted solar farm and co-located 30MW battery energy storage system (BESS), on land off Bilham Lane, Hooton Pagnell, Doncaster. Again, at this time this is not committed development for the purposes of EIA, but it may be worth continuing to monitor as we expect the Application to be submitted imminently (notwithstanding determination dates are unknown at this time).</i></p>	<p>and therefore were not included in the long list of developments.</p> <p>Consultation has been ongoing with CDC to finalise the cumulative long list for the ES.</p>	
<p>Environment Agency</p>	<p><i>A WFD Assessment is required to measure the scale of the impacts towards the watercourses, ensuring these do not cause deterioration of any classification elements or prevent the achievement of Good status... The assessment should look at the cumulative impacts of the project on the waterbodies impacted.</i></p>	<p>Cumulative effects on hydrological receptors, including Water Framework Directive (WFD) watercourses, have been considered within the ES and no inter-project effects have been identified.</p>	<p>ES Volume 2, Chapter 10: Water Resources and Flood Risk [EN0110020/APP/6.10]</p>
<p>National Highways</p>	<p><i>Subsequent iterations of the ES and Outline CTMP [Construction Traffic Management Plan] (when produced) should clearly identify the cumulative construction impact at the SRN [Strategic Road Network] junction during the SRN network peak periods.</i></p>	<p>Consideration of inter-project cumulative effects has been provided within the traffic and transport assessment which has considered other developments where the construction phase overlaps with the Proposed Development and the same</p>	<p>ES Volume 2, Chapter 13: Traffic and Transport [EN0110020/APP/6.13]</p>

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		sections of the road network would be utilised for construction traffic.	
Natural England	<p><i>Natural England note there has been no consideration of Cumulative effects. Whilst we are unable to recommend a particular methodology for cumulative impact assessment, there is external guidance available that might be helpful when you are considering the cumulative impact of the loss of best and most versatile agricultural land in the ES:</i></p> <ol style="list-style-type: none"> <i>1. The Institute of Environmental Management and Assessment (IEMA) have guidance on Land and Soils. The guidance is aimed at Environmental Impact Assessment (EIA) of projects</i> <i>2. The IEMA guidance also refers to The Design Manual for Roads and Bridges (DMRB) (2019) LA109 Geology and Soils EIA Guidance which might also be a useful resource. The guidance sets out the assessment criteria and methodology for highway projects only, though parts of the DMRB guidance are sometimes applied to other project types.</i> 	<p>A cumulative assessment assessing the cumulative loss of best and most versatile agricultural land has been completed within the ES, and has utilised the guidance raised by Natural England from ISEP (formerly IEMA) and DMRB.</p>	<p>ES Volume 2, Chapter 15: Socio-Economics, Tourism and Recreation, and Land-Use [EN0110020/APP/6.15]</p>
Rotherham Metropolitan Borough Council (RMBC)	<p><i>The Council is satisfied with the approach taken to cumulative developments set out in Chapter 17. The Long and Short List at appendix 17.2 provides a comprehensive list of determined and proposed developments within the relevant catchments. It would however be useful if the</i></p>	<p>Ongoing consultation has been undertaken with RMBC to update and finalise the long list of cumulative developments for the ES. The address for each application has also been added</p>	<p>Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]</p>

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	<p><i>list could be expanded to include the address of each development to make it more user friendly.</i></p> <p><i>Additionally, as, and when the Council receive new applications and/or requests for Screening Opinions within the area of influence, these should be fed into the assessment. The Council will commit to keeping the Applicant up to date on these matters.</i></p>	<p>to the list to make it more user friendly.</p>	
<p>RMBC</p>	<p><i>Mental Health, Wellbeing and Community Engagement – The Draft ES should revisit and outline with the communities involved the significance of effects, including the cumulative effects experienced by the local communities by recent, current and planned future developments.</i></p>	<p>Consideration of human health impacts from the Proposed Development are detailed in the relevant technical chapters (although potential landscape and visual impacts on mental health are considered within this Chapter), and socio-economic and recreation impacts are assessed within Chapter 15 of the ES. Intra-project effects on human health are considered within this Chapter.</p> <p>Extensive consultation has been held with local residents to discuss key concerns regarding the Proposed Development, and their feedback has been taken into account to ensure impacts to communities are mitigated as much as possible.</p>	<p>ES Volume 2, Chapter 15: Socio-Economics, Tourism and Recreation, and Land-Use [EN0110020/APP/6.15]</p> <p>ES Volume 2, Chapter 17: Cumulative Effects [EN0110020/APP/6.17]</p>

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<p>RMBC</p>	<p><i>Noise and Disruption - Working with the communities, relevant partners of interest and local authority colleagues throughout the process can mitigate perceived and actual negative impacts for our residents. These should be communicated clearly in lay terms, not technical language addressing potential noise and disruption impacts from construction and operational equipment, such as noise-reducing technologies, careful equipment selection and appropriate construction scheduling, to ensure noise levels are within acceptable limits and don't cause cumulative effects.</i></p>	<p>The noise assessment within the ES has considered cumulative effects, and potential noise impacts are detailed in lay terms within the Non-Technical Summary which accompanies the Application.</p>	<p>ES Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]</p> <p>ES Volume 3, Non-Technical Summary [EN0110020/APP/6.21]</p>
<p>RMBC</p>	<p><i>NPPF principles should be explicitly outlined in further development work. Meaningful engagement, recognising the local character of the areas in contention (each are distinct areas, with their own unique needs), promoting health and wellbeing and addressing cumulative impacts of recent developments, contemporary and planned work should be explicitly addressed.</i></p>	<p>Inter-project effects are assessed within every technical chapter of the ES.</p>	<p>ES Volume 2, Chapters 6 – 16 [EN0110020/APP/6.6 – 6.16]</p>

Other Consultation

17.3.8 Details of consultation to date undertaken outside of the scoping exercise and Statutory Consultation are presented in **Table 17.4**.

Table 17.4: Summary of Other Consultation

Consultee	Date	Summary of Discussion	Where This Is Addressed in This ES
CDC and RMBC	Various dates throughout the consultation periods and preparation of the Application	Ongoing email discussions with the LPAs to discuss cumulative developments to be considered within the assessment.	Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]
CDC and RMBC	14 November 2025	Discussion around the long list of cumulative developments to be considered within the cumulative assessment – search area of 10km stated and then discussed how developments would be included in short lists through consideration of Zones of Influence and temporal overlaps. CDC and RMBC raised some further applications to be added to the long list they had reviewed, which were taken under consideration by the Applicant.	Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]
CDC and RMBC	12 February and 16 February 2026	The Long List of developments to be considered within the cumulative assessment was provided to CDC and RMBC via email for review and sign-off. RMBC determined that the list was acceptable at this stage of the process with no additional applications needing to be added. CDC provided some comments / updates which were used to update the Long List.	Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]

Targeted Consultation

17.3.9 A Targeted Consultation period was held between 23 February and 25 March 2026 on proposed changes to the Order Limits. This included notifying relevant prescribed consultees. Feedback from this Targeted Consultation and the Applicant's response is included the **Consultation Report [EN0110020/APP/5.1]**.

- 17.3.10 A second Targeted Consultation was held for any individuals that had been identified as land interests after the Statutory Consultation.
- 17.3.11 No comments were provided by statutory consultees through the Targeted Consultation period in relation to the Cumulative Effects Assessment.

17.4 Assessment Methodology

Intra-Project Effects

- 17.4.1 Professional judgement has been used to develop an appropriate methodology in line with Planning Inspectorate guidance.
- 17.4.2 The EIA considers intra-project effects in several ways as follows:
- In general terms the EIA follows a ‘receptor-led approach’. As such, addressing intra-project effects is integral to the assessments, especially the ecological assessments, as they consider all the impacts (e.g. light and habitat disturbance) on a receptor (e.g. bats); and
 - Some EIA topics are focused on the effects of specific impacts on people and communities or distinct groups (air quality, noise and vibration, traffic and transport and landscape and visual).
- 17.4.3 The approach to the assessment of intra-project effects has considered the changes in baseline conditions at common sensitive receptors (i.e. those receptors that have been identified as having potential to experience likely significant effects by more than one environmental factor) due to the Proposed Development.
- 17.4.4 The assessment has been based upon all residual (post-additional mitigation) effects, including those assessed as negligible.
- 17.4.5 The assessment considers where multiple ‘Not Significant’ effects could combine to become ‘Significant’ and where identified ‘Significant’ effects could be made worse through combined effects.
- 17.4.6 The Study Area for the intra-project effects assessment has been informed by the Study Areas used for the individual technical chapters (**ES Volume 2, Chapters 6 to 16 [EN0110020/APP6.6 – 6.16]**), and these should be referred to for information regarding the assessment Study Areas.
- 17.4.7 The assessment for intra-project effects is split into two stages, which are detailed in the next sections. These allow the screening of sensitive receptors which may be impacted by combined residual effects, and then the qualitative assessment of potential intra-project effects for these receptors.

Stage 1: Screening

- 17.4.8 Screening is completed to determine where receptors from one technical assessment may be exposed to more than one type of residual effect, at the same time, during the construction, operation and maintenance, and / or decommissioning phases of the Proposed Development. Those common sensitive receptors exposed to two or more types of residual effects with a significance of negligible or greater, have been taken forward to Stage 2 of the assessment.
- 17.4.9 If there is only one type of effect on a sensitive receptor (i.e. only one technical assessment has identified effects on that receptor), then there are no potential

intra-project effects and the sensitive receptor has not been taken forward to stage 2 of the assessment.

Stage 2: Assessment for Intra-Project Effects

- 17.4.10 A qualitative assessment of the overall significance of the intra-project effects on common sensitive receptors identified at Stage 1 has been completed based on technical information provided in the technical assessment chapters (**ES Volume 2, Chapters 6 – 16 [EN0110020/APP/6.6 – 6.16]**) and supporting appendices. Professional judgement has been used in determining the significance of each combined effect.
- 17.4.11 Only adverse effects are considered within the assessment, and the scale of each combined effect has not been assigned within this assessment, it is only whether the intra-project effect is considered to be Significant or not that has been assessed.
- 17.4.12 Receptors have been grouped into general categories to simplify the intra-project assessment, and potential intra-project effects for the decommissioning phase of the Proposed Development have been considered to be the same as the potential intra-project effects for the construction phase.
- 17.4.13 To assess a worst-case scenario, where there is a range of impact magnitudes possible for a group of receptors (for example, some residential receptors may experience a low magnitude impact, and some may experience a moderate magnitude impact), the worse-case impact has been taken forward for the whole receptor group.

Inter-Project Effects

- 17.4.14 There is no widely accepted methodology for assessing cumulative effects, but relevant guidance has been considered including from ISEP (formerly IEMA) and the assessment guidance set out in Planning Inspectorate's Advice Note "*Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment*^{xviii}", The Planning Inspectorate Advice Note Seventeen advocates for a four-stage approach as follows:
- Stage 1: Establishing the long list of other existing and / or approved development. Note that in the context of NSIP CEA, 'other existing and / or approved development' is taken to include existing developments and existing plans and projects that are 'reasonably foreseeable', a definition which is no longer current in most other types of CEA;
 - Stage 2: Establishing a shortlist of other existing and, or approved development based on technical and temporal criteria;
 - Stage 3: Information gathering; and
 - Stage 4: Assessment at the topic-specific level of cumulative effects with other developments screened in at Stage 2.
- 17.4.15 Stage 1 has included consultation with CDC and RMBC to ensure the Local Planning Authorities find the long list acceptable and comprehensive for the assessments within the ES. This is detailed further in **Table 17.4** and has resulted in the long list provided in **Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]**.

17.4.16 The methodology for each stage of the CEA process is described in the following sections.

CEA Stage 1

17.4.17 Stage 1 of the CEA involved determining whether developments fall within the Zol for the technical disciplines, as specified in the Scoping Report. The Zols vary for each technical discipline and are based on their respective defined Study Areas. The Study Areas and Zols considered for each technical discipline have been defined as follows and illustrated in **ES Volume 3, Figure 17.2: Cumulative Effects Assessment – Zones of Influence within 1km** and **Figure 17.3: Cumulative Effects Assessment – Zones of Influence within 10km [EN0110020/APP/6.19]** as per the assessments in **ES Volume 2, Chapters 6 to 16 [EN0110020/APP/6.6 – 6.16]**:

- Air Quality – 250m from the Order Limits;
- Biodiversity and Nature Conservation – 10km from the Order Limits;
- Climate Change Resilience – Scoped out;
- Greenhouse Gas Assessment – Scoped out;
- Cultural Heritage and Archaeology – 3km from the Order Limits; as noted above, the assessment of Indirect Effects has not been limited to a 3km Study Area.;
- Ground Conditions and Land Quality – 250m from the Order Limits;
- Landscape and Visual – 3km from the Order Limits;
- Noise and Vibration – 4km from the Order Limits;
- Socio-Economics and Land Use – the local administrative areas of CDC and RMBC;
- Traffic and Transport – the road network as identified in **ES Volume 2, Chapter 13: Traffic and Transport [EN0110020/APP/6.13]**;
- Water Resources and Flood Risk – 1km of the Order Limits;
- Waste – Scoped out;
- Glint and Glare – 1km of the Order Limits for ground-based receptors;
- Major Accidents and Disasters – Scoped out; and
- Electromagnetic Fields – the Order Limits.

Zone of Influence

17.4.18 The maximum Zol of 10km was utilised to identify, through a Geographic Information System (GIS) database and maps compiled from data available in the relevant Local Planning Authorities' planning registers, a comprehensive list of developments situated within the Zol for consideration in the assessment. This initial screening step considers the other development's scale and potential to cause Significant environmental impacts, its location, and how its timeline aligns with the Proposed Development's programme. The long list of developments (**ES Volume 3, Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]**) was prepared with consideration to:

- Developments currently under construction;

- Consented developments which have not yet been implemented/construction commenced;
- Submitted applications not yet determined;
- Refused applications, subject to appeals processes not yet determined;
- Developments listed on the National Infrastructure Planning Programme of Projects;
- Strategic developments identified in the relevant Development Plan (and emerging Development Plans); and
- Development identified in other plans and programmes which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

17.4.19 As set out in the Planning Inspectorate Advice Note 17^{xix} these developments were assigned a level of certainty (ranked as 1, 2 or 3) based on the following criteria:

- Tier 1, other development for which there is most information available, e.g. development under construction, approved development or for which an application has been submitted under the relevant consenting regimes, and all refusals subject to appeal procedures not yet determined;
- Tier 2, other development for which some useful information may be available, e.g. projects on the Planning Inspectorate's Programme of Projects where a Scoping Report has been submitted and, for the purposes of this CEA, where a Scoping Report has been submitted under a relevant consenting regime; and
- Tier 3's other existing and/ or approved development where relatively little information may be available, e.g. projects on the Planning Inspectorate's Programme of Projects but where a Scoping Report has not yet been submitted, development identified in the relevant Development Plan, and development identified in other plans and programmes, where such development is reasonably likely to come forward. For the purposes of this CEA other developments that have sought an EIA screening opinion have been included.

17.4.20 Minor developments e.g. residential extensions and small-scale planning applications less than 5ha for industrial / commercial premises have been excluded from the CEA, unless their boundary overlaps with that of the Order Limits. The explanation for this is that their scale is not considered likely to result in cumulative effects with the Proposed Development.

17.4.21 The long list of other developments was first provided for the Draft ES, and had a chosen cut-off date of 26 June 2025. Since then, the list has been updated, in consultation with CDC and RMBC, for the ES and has a chosen cut-off date of 27 April 2026. This ensures all developments with potential Significant cumulative effects, when considered with the Proposed Development, are included in the environmental assessments.

17.4.22 The preliminary long list of other developments as identified in Stage 1 of the CEA are detailed in **ES Volume 3, Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]**.

CEA Stage 2

17.4.23 Stage 2 of the CEA involves screening the long list to produce a shortlist of developments to ensure a proportionate CEA. Further consideration is made of the potential for temporal overlap between development implementation timescales and whether these are likely to lead to cumulative effects in conjunction with the Proposed Development, and therefore whether these developments should be progressed to CEA Stages 3 and 4. Consideration is also given to the location of the cumulative developments, and whether they fall within the Zols defined for the Proposed Development; the scale and nature of the cumulative developments; and other factors such as the nature and capacity of the receiving environment, and potential source – pathways from the Proposed Development to receptors that may make cumulative effects more likely. These considerations form threshold criteria for each technical discipline, which allow the short list of cumulative developments for the cumulative effects assessment to be determined. The short list considered for each technical assessment is provided in each technical chapter (**ES Volume 2, Chapters 6 – 16 [EN0110020/APP/6.6 – 6.16]**).

17.4.24

Temporal Considerations

17.4.25 There is potential for cumulative effects to occur where the construction of the Proposed Development is likely to overlap with the construction phase of other nearby developments. Where the construction period of an identified application or development is anticipated to overlap with the construction of the Proposed Development (expected to span 24-36 months from 2027 to 2029), the developments have been screened in and progressed through to Stage 3, due to the potential for cumulative effects to arise as a result of impacts from construction occurring simultaneously with the Proposed Development. If it can be shown e.g. through the use of up-to-date aerial photography that the construction phase of any given development is complete, then that development has not been taken forward to Stage 3 and is considered to form part of the technical chapter assessment baselines. However, where any developments cannot be confirmed within reasonable doubt as being completed, they have remained scoped into Stage 3 on the worst-case assumption that construction would not be finished prior to 2027 and may therefore overlap with that of the Proposed Development.

17.4.26 Other developments considered in Stage 2 include any developments consented prior to 31 March 2026. Planning permissions for consented developments typically expire after three to five years following consent, therefore, it is assumed that developments consented prior to March 2021 have either commenced construction or their consent has expired.

Technical Considerations

17.4.27 Although potential impacts of the Proposed Development may result in cumulative effects with impacts from other developments; it should be noted that this does not necessarily give rise for all impacts to be perceived uniformly. For the Proposed Development to have cumulative effects on the same receptor(s) as other developments, the receptor(s) must be located within the relevant Zol. However, it does not necessarily follow that this automatically ensures a cumulative effect. For example, a receptor may experience noise impacts, but the

magnitude of the impact cumulatively may be negligible because of other external noise sources that are also present, such as a motorway or industrial activities.

- 17.4.28 The Zol for each environmental technical discipline has been defined by the respective topic specialist. In each topic, the Zol takes into consideration the receptors likely to be affected by the Proposed Development activities and the potential for cumulative effects of the Proposed Development and other developments within the Zol and the type of impacts and receptors likely to be affected. At this stage (i.e. Stage 2), this is a matter of professional judgement based on the circumstances of the developments in question, such as their scale and nature. Consideration is also given to the nature and capacity of the receiving environment / receptor, and whether there are appropriate pathways between the Proposed Development and receptors through which cumulative effects may occur. For example, a development may be well within the Zol, but if it clearly has no impact pathway linking it to the Proposed Development due to e.g. the presence of an urban area providing a visual barrier between the two, then it may not be shortlisted for Stage 3.

Short List of Other Developments

- 17.4.29 The Short List of other developments to be taken forwards for the cumulative effects assessment is specific for each technical discipline and has been determined using the Zol and technical and temporal criteria outlined above. The short list considered for each technical assessment is therefore provided in each technical chapter (**ES Volume 2, Chapters 6 – 16 [EN0110020/APP/6.6 – 6.16]**).
- 17.4.30 The shortlist was derived from a review of multiple applications identified in Stage 1. Other developments were progressively screened out or in from the long list based firstly on temporal considerations and secondly on technical considerations as explained above. This includes those that are thought to overlap in timescales and those considered Significant enough for further evaluation. Significance has been judged based on the Zols for various impacts, and accounting for the scale and potential magnitude of their effects (e.g. a large housing estate may not be noisy). The output of this short list exercise is shown in **ES Volume 3, Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]** as other developments are identified on the short list for each technical topic.
- 17.4.31 Cumulative traffic and transport impacts were assessed slightly differently. Other developments were screened in based on their location in relation to the Proposed Development as well as their use of the local road network. Other developments may use the same parts of the local road network as the Proposed Development.

CEA Stage 3 and 4

Stage 3

- 17.4.32 Stage 3 is primarily focused around gathering further information relating to the other developments specified in the short list to inform Stage 4. The details gathered at Stage 3 includes:
- Proposed design and location information;
 - Proposed programme/temporal parameters (construction, operation and maintenance, decommissioning); and

- Environmental assessments that set out baseline data and effects arising from the other existing and, or approved development.

17.4.33 The short lists of other developments to progress to Stage 3 and 4 of the assessment, as decided in Stage 2, is presented in each technical chapter (**ES Volume 2, Chapter 6 – 16 [EN0110020/APP/6.6 – 6.16]**)

Stage 4

17.4.34 At Stage 4, the assessment of cumulative effects is undertaken for the Proposed Development against each of the other developments identified in the short list, in turn for each environmental topic included in the ES and scoped in for the assessment.

17.4.35 While the assessment has been carried out using a precautionary approach for example, assuming that the construction of a project will overlap with that of the Proposed Development unless there is reasonable evidence to the contrary it is also intended to be proportionate and appropriate to the level of detail available.

17.4.36 Some assessments, such as traffic and transport, are inherently cumulative as they may incorporate modelled traffic data growth for future traffic flows (as described in **ES Volume 2, Chapter 13: Traffic and Transport [EN0110020/APP/6.13]**), and as such some of the shortlisted developments may not require any further assessment at Stage 4 as they will be adequately explored in the technical chapters.

17.4.37 The following factors will be considered for the assessment of effects:

- Duration (temporary or permanent);
- Extent (the geographical area);
- Type (additive or synergistic);
- Frequency;
- Value and resilience of the affected receptor; and
- The likely success of mitigation.

17.4.38 ISEP (formerly IEMA) defines an additive effect as an effect “*caused by other past, present or reasonably foreseeable actions together with the plan, programme or project itself*”, whilst a synergistic effect is defined as those “*which arise from the reaction between effects of a development plan, programme or project on different aspects of the environment*”.

17.4.39 The decommissioning phase would broadly reflect the activities set out in the construction phase but likely to be reduced as removal would require less disturbance than during the construction phase. Cumulative effects identified during construction phase are considered to be similar or less for the decommissioning phase and will be managed with the implementation of a Decommissioning Environmental Management Plan.

Assumptions, Exclusions and Limitations

17.4.40 The main challenges in undertaking the cumulative effects assessment are related to information availability. There is generally reduced availability of detailed information on other developments at an early stage in the consenting process (e.g. EIA scoping, Outline Town and Country Planning Applications (TCPA)).

- 17.4.41 In the absence of specific information, reasonable assumptions have been made. For example, that their construction will be in accordance with accepted good practice.
- 17.4.42 With reduced information availability, there is reduced certainty to cumulative effects and, as such, cumulative effects assessments can only be made where this information is available.
- 17.4.43 The cumulative assessment is based upon publicly available information only, which reduces the scope of usable information further.

17.5 Assessment of Intra-Project Effects

Assessment of Likely Effects

Stage 1: Screening

- 17.5.1 As per government guidance¹⁵, the Screening for the intra-project effects assessment is shown in **Table 17.5**. This indicates where receptors assessed within one technical assessment have the potential to also be impacted by effects from other technical assessments and are therefore taken forwards to Stage 2 of the intra-project effects assessment.

Table 17.5: Screening for Intra-Project Effects

	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 11: Climate Change and Greenhouse Gas Emissions	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	Inclusion in Intra-Project Cumulative Assessment
Chapter 6: Biodiversity and Nature Conservation	X				X		X	X	X			No – intra-project effects considered within ES Volume 2, Chapter 6: Biodiversity and Nature Conservation [EN0110020/APP/6.6]
Chapter 7: Landscape and Visual		X					X	X	X	X	X (Glint & Glare and Electromagnetic Fields (EMF))	Yes
Chapter 8: Cultural Heritage and Archaeology		X	X				X	X	X		X (Glint & Glare)	No – intra-project effects related to landscape character and environmental changes are considered within the setting

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												assessment detailed and direct / indirect physical effects are considered within the assessment of potential impacts, both of which are detailed within ES Volume 2, Chapter 8: Cultural Heritage and Archaeology [EN0110020/APP/6.8]
Chapter 9: Ground Conditions and Land Quality				X	X					X (Agricultural Land Classification (ALC))		Yes
Chapter 10: Water Resources and Flood Risk	X			X	X							Yes
Chapter 11: Climate Change and Greenhouse Gas Emissions						X						No – no potential intra-project effects for assessed receptors.
Chapter 12: Air Quality		X					X	X	X		X (Glint & Glare and EMF)	Yes

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Chapter 13: Traffic and Transport								X			X (Glint & Glare)	Yes
Chapter 14: Noise and Vibration	X	X					X	X	X		X (Glint & Glare and EMF)	Yes
Chapter 15: Socio- Economics, Tourism and Recreation, and Land Use		X		X (ALC)			X	X	X		X (Glint & Glare and EMF)	No – Intra-project effects considered within assessment detailed in ES Volume 2, Chapter 15: Socio- Economics, Tourism and Recreation, and Land Use [EN0110020/APP/6 .15]
Chapter 16: Other Environment al Topics		X					X	X	X		X	Yes

Stage 2: Assessment of Intra-Project Effects

- 17.5.2 The assessment of potential intra-project effects for the Proposed Development is provided in **Table 17.6** for the construction (and decommissioning phase) and **Table 17.7** for the operation and maintenance phase. As stated in the assessment methodology (Section 17.4), receptors have been grouped to simplify the assessment and a worst-case approach is taken if receptors within a group have been assessed to have the potential to experience a range of possible impact magnitudes.

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Table 17.6: Assessment of Intra-Project Effects for the Construction and Decommissioning Phases

Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
Construction (and Decommissioning) Phase											
Designated Sites	Low, Sig.	N/A	N/A	N/A	N/A	Low, Not Sig.	N/A	N/A	N/A	N/A	Intra-Project Effects are considered within ES Volume 2, Chapter 6: Biodiversity and Nature Conservation [EN0110020/APP/6.6] and are not considered further within this cumulative effects chapter.
Priority Habitats	Low, Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Ancient Woodland and Veteran Trees	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Protected Species	Low, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Breeding Birds	Low, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Birds	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Landscape Character	N/A	Moderate to Major, Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
Residential Receptors and Human Health	N/A	Major, Sig.	N/A	Negligible, Not Sig.	N/A	Low, Not Sig.	Not Sig.	Negligible to Major, Not Sig.	N/A	N/A	<p>A Significant visual impact has been identified at viewpoints representative of residential properties and human health during construction, but given that embedded mitigation measures prevent additional Significant impacts from noise, traffic and transport, and air quality, no Significant intra-project effects are anticipated.</p> <p>Further detail on human health is provided below.</p>

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
Public Rights of Way (PRoWs)	N/A	Major Sig.	N/A	N/A	N/A	N/A	Not Sig.	N/A	Minor, Not Sig.	N/A	A Significant visual impact has been identified for viewpoints representative of Public Rights of Way during the construction phase, but given that embedded mitigation measures prevent additional Significant impacts from traffic and transport, recreation, and air quality (on human health), intra-project effects are not anticipated to be Significant in overall terms.

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
Designated Heritage Assets	N/A	N/A	Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Potential intra-project effects, such as the impact on the landscape character, are taken into account in the direct and indirect impact assessments and setting assessment detailed in ES Volume 2, Chapter 8: Cultural Heritage and Archaeology [EN0110020/APP/6.8] , and therefore intra-project effects are not considered further in this cumulative effects chapter.
Non-Designated Heritage Assets	N/A	N/A	Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Soils	N/A	N/A	N/A	Minor, Not Sig.	N/A	N/A	N/A	N/A	Moderate, Sig.	N/A	A Significant impact on Best and Most

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
											Versatile (BMV) land is identified, but given that changes to the soil quality and compaction are Not Significant, no Significant intra-project effects are anticipated.
Groundwater	N/A	N/A	N/A	Minor, Not Sig.	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	Given that no Significant impacts have been identified for groundwater receptors, no Significant intra-project effects are anticipated.
Ground Structural Stability	N/A	N/A	N/A	Minor, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Designated Mineral Resources	N/A	N/A	N/A	Minor, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
Surface Water	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Water Run-Off	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Water Abstraction and Consumption	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Flood Risk	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Non-Motorised Users	N/A	N/A	N/A	N/A	N/A	N/A	Not Sig.	N/A	N/A	N/A	No Intra-Project Effects anticipated
Road Network	N/A	N/A	N/A	N/A	N/A	N/A	Not Sig.	N/A	N/A	N/A	No Intra-Project Effects anticipated
Jobs and Economy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	Potential Intra-Project Effects are considered within the assessment detailed in ES Volume 2, Chapter 15: Socio-Economics, Tourism and Recreation, and
Tourism	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Minor, Not Sig.	N/A	
Population	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
											<p>Land Use [EN0110020/APP/6.15] and are not considered further within this cumulative effects chapter.</p>
Waste	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Slight, Not Sig.	No Intra-Project Effects anticipated

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Table 17.7: Assessment of Intra-Project Effects for the Operation and Maintenance Phase

Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
Operation and Maintenance Phase											
Designated Sites	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Negligible to Minor, Not Sig.	N/A	N/A	Intra-project effects are considered within ES Volume 2, Chapter 6: Biodiversity and Nature Conservation [EN0110020/APP/6.6] and are not considered further within this cumulative effects chapter
Protected Species	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Negligible to Minor, Not Sig.	N/A	Not Sig.	
Breeding Birds	Low, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Birds	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Landscape Character	N/A	Moderate, Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Residential Receptors and Human Health	N/A	Moderate to Major, Sig.	N/A	Minor, Not Sig.	N/A	N/A	N/A	Negligible to Minor, Not Sig.	N/A	Not Sig.	A Significant visual impact has been identified at viewpoints representative of

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
											<p>residential properties and human health during the operation and maintenance phase but given that embedded mitigation measures prevent additional Significant impacts from noise, contamination, and glint and glare, no Significant intra-project effects are anticipated.</p> <p>Further detail on human health is provided below.</p>

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
Public Rights of Way	N/A	Moderate to Major, Sig.	N/A	N/A	N/A	N/A	N/A	N/A	Minor, Not Sig.	Not Sig.	A Significant visual impact has been identified for viewpoints representative of Public Rights of Way during operation, but given that embedded mitigation measures prevent additional Significant impacts on recreation, no Significant intra-project effects are anticipated.
Designated Heritage Assets	N/A	N/A	Moderate, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Potential intra-project effects, such as the impact on the landscape character, are taken into account in the direct and indirect

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
											impact assessments and setting assessment detailed in ES Volume 2, Chapter 8: Cultural Heritage and Archaeology [EN0110020/APP/6.8] , and therefore intra-project effects are not considered further in this cumulative effects chapter.
Soils	N/A	N/A	N/A	Negligible, Not Sig.		N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Groundwater	N/A	N/A	N/A	Negligible, Not Sig.	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	Given that no Significant impacts have been identified for groundwater receptors, no

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
											Significant intra-project effects are anticipated.
Designated Mineral Resources	N/A	N/A	N/A	Minor, Not Sig.	N/A	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Surface Water	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Water Run-Off	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Water Abstraction and Consumption (including for fire suppression)	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Flood Risk	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	N/A	N/A	N/A	N/A	No Intra-Project Effects anticipated
Jobs and Economy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Negligible, Not Sig.	N/A	Potential Intra-Project Effects are considered within the assessment detailed in ES Volume 2, Chapter
Tourism	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Minor, Not Sig.	N/A	

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Environmental Factor / Receptor / Receptor Group	Residual Effects										Consideration of Intra-Project Effects
	Chapter 6: Biodiversity and Nature Conservation	Chapter 7: Landscape and Visual	Chapter 8: Cultural Heritage and Archaeology	Chapter 9: Ground Conditions and Land Quality	Chapter 10: Water Resources and Flood Risk	Chapter 12: Air Quality	Chapter 13: Traffic and Transport	Chapter 14: Noise and Vibration	Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use	Chapter 16: Other Environmental Topics	
											<p>15: Socio-Economics, Tourism and Recreation, and Land Use [EN0110020/APP/6.15] and are not considered further within this cumulative effects chapter.</p>
Road Network	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Sig.	No Intra-Project Effects anticipated
Rail Receptors	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Sig.	No Intra-Project Effects anticipated
Waste	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Slight, Not Sig,	No Intra-Project Effects anticipated

Human Health

- 17.5.3 A detailed human health impact assessment was scoped out of the ES at the EIA Scoping stage, with the Scoping Opinion provided in **ES Volume 3, Appendix 2.2 [EN0110020/APP/6.20]**. However, it is acknowledged that the Proposed Development has the potential to impact human health via ground / water contamination, air quality, noise, and through changes to the surrounding landscape and views. Potential impacts to human health have been assessed where required within the relevant technical chapters, but there is the potential for intra-project effects to occur for human health as detailed in the following sections.

Direct Impacts to Human Health

- 17.5.4 The following technical chapters have considered or acknowledged the potential for human health impacts from the Proposed Development:
- **ES Volume 2, Chapter 7: Landscape and Visual [EN0110020/APP/6.7]** in terms of changes to the surrounding landscape and views;
 - **ES Volume 2, Chapter 9: Ground Conditions and Land Quality [EN0110020/APP/6.9]** in terms of impacts from contamination / ground-based pollution;
 - **ES Volume 2, Chapter 12: Air Quality [EN0110020/APP/6.12]** in terms of impacts from dust and / or air-borne pollution;
 - **ES Volume 2, Chapter 13: Traffic and Transport [EN0110020/APP/6.13]** in terms of construction traffic;
 - **ES Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]** in terms of noise and vibration;
 - **ES Volume 2, Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use [EN0110020/APP/6.15]** in terms of access to health services; and
 - **ES Volume 2, Chapter 16: Other Environmental Topics [EN0110020/APP/6.16]** in terms of major accidents and disasters, and electromagnetic fields.
- 17.5.5 The technical assessments have concluded that due to the appropriate mitigation measures being in place, and best practice construction methods being used, individually there would be no impact on human health from each environmental effect.
- 17.5.6 Taken cumulatively, the main driver of intra-project effects on human health would be from changes to the landscape character and impacts to visual receptors. This would predominantly impact mental health, through a change in perception of the surrounding environment, and may interact with other impacts to result in human health effects considered in the following sections.

Physical Activity

- 17.5.7 The ability to access and use the Public Rights of Way (PRoW) network to exercise and make journeys using active travel modes can impact the ease and frequency of undertaking physical activity within the surrounding area, which can impact both mental and physical health. Potential disruption to walking, horse riding, dog walking, and cycling routes could therefore impact human health.

- 17.5.8 The key driver of change for the Public Rights of Way (PRoW) network would be the visual impacts of the Proposed Development during construction and operation, although embedded mitigation measures would ensure no additional impacts would be caused by noise, air quality and traffic.
- 17.5.9 However, the design of the Proposed Development aims to keep PRoWs open to the wider countryside on one side or for part of the route, or a corridor of an appropriate width (as secured in the **Works Plans [EN0110020/APP/2.3]**) is proposed for PRoW to maintain access and enjoyment of the routes. Given PRoWs will remain open during the construction phase of the Proposed Development (with potential temporary closures and minor diversions as detailed in the **Outline PRoW Management Plan (oPRoWMP) [EN0110020/APP/5.14]**), and will be maintained through the operation and maintenance phase, no potential impacts on human health from access to physical activity are anticipated.

Community Identity, Culture, Resilience, and Influence

- 17.5.10 The Proposed Development has the potential to affect the way people feel about their community, through changes to the physical, economic, cultural or social landscape of the surrounding communities.
- 17.5.11 From a mental health perspective, there may be worry and anxiety associated with a loss of sense of control over their living environment, and the introduction of the Proposed Development in the area would change how the physical landscape of communities is experienced.
- 17.5.12 The Applicant has endeavoured to maximise community engagement at all stages of the Proposed Development, and feedback from local communities has positively impacted the design of the Proposed Development (as detailed in **ES Volume 1, Chapter 4: Alternatives and Design Evolution [EN0110020/APP/6.4]**). The design has evolved to minimise impacts to local residents and communities, and adverse mental health impacts will be mitigated by secured offsets from residential properties and recreational routes (as secured in the **Works Plans [EN0110020/APP/2.3]**). In addition, the Construction Environmental Management Plan to be approved by the relevant local planning authority prior to commencement of the works will secure measures to be taken to minimise construction impacts on local communities and residents, and therefore reduce potential human health impacts. An **Outline Construction Environmental Management Plan (oCEMP) [EN0110020/APP/5.9]** is provided with the Application to outline the measures to be complied with during the construction phase of the Proposed Development.

Employment and Income

- 17.5.13 Access to appropriate employment opportunities is generally associated with better health outcomes, through good working conditions, raising living standards, income security, social interaction, and enhanced socio-economic status.
- 17.5.14 A full assessment of the impacts of the Proposed Development on employment opportunities and the local economy are provided in **ES Volume 2, Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use [EN/0110020/APP/6.15]**, and concludes that no Significant impacts are likely and that there will be beneficial impacts through the creation of jobs. Therefore, no impacts on human health from employment and income are anticipated.

Climate Change Mitigation and Adaptation

- 17.5.15 Climate change threatens the health, safety and security of people worldwide. Inaction in responding to the challenges of climate change can impact physical health through changes to quality of life, living conditions and global health inequalities. This can also impact mental health through anxiety about the future in the face of global environmental challenges.
- 17.5.16 The assessment of the impact of the Proposed Development on climate change is provided in **ES Volume 2, Chapter 11: Climate Change and Greenhouse Gas Emissions [EN0110020/APP/6.11]**. Carbon emissions are associated with the construction phase of the Proposed Development, but overall carbon savings from renewable energy generation are assessed as having a beneficial impact on climate change. No human health impacts related to climate change caused by the Proposed Development are therefore anticipated.

Electromagnetic Fields

- 17.5.17 EMFs are considered within **ES Volume 2, Chapter 16: Other Environmental Topics [EN0110020/APP/6.16]** and the assessment concluded that no Significant effects from EMF are likely. There are therefore no anticipated human health impacts from EMF.

Wider Societal Infrastructure and Resource

- 17.5.18 During the operation and maintenance phase, the Proposed Development will contribute towards a more reliable and resilient grid network to provide the energy infrastructure on which society depends for good population physical and mental health. A reliable supply of clean energy is required in relation to numerous societal factors such as food production and safety, thermal comfort, healthcare, education, income generation, and socialising.
- 17.5.19 As a development to generate renewable energy and increase energy security, the Proposed Development is therefore not anticipated to adversely impact human health in terms of societal infrastructure and resource.

Healthcare Services

- 17.5.20 Extra demand may be placed on local healthcare services due to the influx of workers to the area during the construction of the Proposed Development.
- 17.5.21 A full assessment of the potential impact of the Proposed Development on healthcare services is provided in **ES Volume 2, Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use [EN0110020/APP/6.15]**. This concluded that there would be a Not Significant impact on access to local services, and therefore no impact to human health from access to healthcare services is anticipated.

17.6 Assessment of Inter-Project Effects

- 17.6.1 Inter-project effects are considered within each technical chapter, including detailing the short list of developments considered within the cumulative effects assessment, and the results of the cumulative effects assessment. Within each technical chapter, Section [ES Chapter Number].9 should be referred to (**ES**

Volume 2, Chapters 6 – 16 [EN0110020/APP/6.6 – 6.16] for the assessment of potential inter-project effects.

17.6.2 A summary of the identified inter-project effects from each technical chapter is provided in the following sections.

Table 17.8: Summary of Inter-Project Effects

Technical Chapter	Summary of Inter-Project Effects
Chapter 6: Biodiversity and Nature Conservation	<p>There is no potential for cumulative effects from the majority of the developments included in the assessment.</p> <p>RB2025/0029, RB2025/0714, RB2025/1420, RB2025/1468, 25/01554/FULM, 22/00840/SCRE, RB2022/1203, and RB2025/1612, have been assessed as having the potential to cause cumulative effects, but these are assessed as Not Significant.</p>
Chapter 7: Landscape and Visual	<p>In respect of the landscape character, the cumulative effects would not be of sufficient magnitude to redefine the Local Character Areas (LCAs) or Local Character Types (LCTs). Therefore, no Significant cumulative effects are identified during the construction or operation and maintenance phases.</p> <p>In respect of views and visual amenity, instances of sequential visibility were predicted to arise, notably in relation to RB2022/1203 and RB2025/0714. The assessment identified that there would be no Significant adverse cumulative effects during the construction or operation and maintenance phases.</p> <p>Therefore, cumulative effects on landscape character and views and visual amenity during construction, operation and maintenance are assessed as Not Significant.</p>
Chapter 8: Cultural Heritage and Archaeology	<p>No inter-project effects have been identified as a result of direct and indirect physical impacts.</p> <p>The potential for inter-project effects on indirect (setting) impacts has been identified for eight cumulative developments, although the assessment concluded that there would be no inter-project effects for the majority of the assessed heritage assets. A minor inter-project effect was determined for Ulley Conservation Area, due to RB2025/0029 potentially causing setting impacts, and this was assessed as Not Significant.</p>
Chapter 9: Ground Conditions and Land Quality	<p>Inter-project effects are Minor (Not Significant) to Negligible (Not Significant), with the minor adverse effects related to permanent loss of soil function of non-best and most versatile (BMV) soil (due to the substations,</p>

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	<p>BESS, and hardstanding locations), potential contamination of soil by accidental leaks and spillages to BMV soils, and potential contamination of groundwater by accidental leaks and spillages.</p> <p>It is therefore considered that the Proposed Development would not contribute to any Significant Adverse inter-project effects in relation to land quality and ground conditions.</p>
<p>Chapter 10: Water Resources and Flood Risk</p>	<p>On the assumption that all the cumulative developments would adhere to standard good practice and mitigation and develop the appropriate flood risk management measures, no Significant inter-project effects were assessed as a result of the Proposed Development and cumulative developments.</p>
<p>Chapter 11: Climate Change and Greenhouse Gas Assessment</p>	<p>An inter-project effects assessment was not considered relevant or applicable to the Climate Change Risk Assessment (CCRA), In-Combination Climate Impacts (ICCI) Assessment, or the Greenhouse Gas (GHG) Assessment. Justification for this is provided in ES Volume 2, Chapter 11: Climate Change and Greenhouse Gas Assessment [EN0110020/APP/6.11].</p> <p>The Proposed Development supports regional and national net zero ambitions by providing renewable electricity to the UK grid. The Proposed Development cumulatively with other renewable developments would have a positive effect on GHG emissions as it would contribute to the UK's net zero ambitions.</p>
<p>Chapter 12: Air Quality</p>	<p>It is assumed that nearby construction sites will operate to a similar level of best practice and in accordance with their own Construction Environmental Management Plans (CEMPs). The inter-project effects of dust generation during construction would therefore be Negligible to Low (Not Significant). Traffic impacts have been screened out for the Proposed Development so there are no cumulative impacts from the Proposed Development anticipated with other developments in the area during construction.</p> <p>Operational and maintenance phase dust impacts of the Proposed Development were scoped out of the assessment. Therefore, there are no predicted inter-project effects.</p> <p>Decommissioning phase impacts are expected to be of the same type, magnitude and significance level as the construction phase. It is assumed that nearby construction sites will operate to a similar level of best practice and in</p>

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	<p>accordance with their own Decommissioning Environmental Management Plan (DEMP). The inter-project effects of dust generation during decommissioning would therefore be Negligible to Low (Not Significant).</p>
<p>Chapter 13: Traffic and Transport</p>	<p>The inter-project effects assessment concluded that the peak construction period associated with the other developments is unlikely to overlap with the peak construction period of the Proposed Development. Where some overlap in construction activity could occur, the magnitude of cumulative traffic increases across the assessed highway network would remain low in absolute terms. Therefore, the addition of cumulative construction traffic would not materially alter the conclusions of the assessment.</p> <p>In the unlikely event that the identified cumulative developments are scheduled to be constructed simultaneously, it is anticipated that in line with good practice and the application of standard planning conditions, the implementation of a Construction Traffic Management Plan (CTMP) for each development would ensure that appropriate mitigation is adopted by each development.</p> <p>It is therefore considered that the cumulative effect of the Proposed Development and other developments in the area would not lead to any changes in the significance of effects predicted for the Proposed Development following the implementation of embedded mitigation measures.</p>
<p>Chapter 14: Noise and Vibration</p>	<p>Most of the cumulative developments do not include an assessment of construction noise, and therefore cumulative construction noise impacts cannot be assessed quantitatively. Cumulative construction impacts are expected to be short term and are unlikely to be Significant. Where data on construction noise is available for RB2025/0029, inter-project construction noise impacts are expected to be Not Significant.</p> <p>Inter-project operational noise levels were calculated for all the common receptors between the Proposed Development and each cumulative development. For all the assessed receptors and developments, operational inter-cumulative noise impacts are expected to be Not Significant.</p>
<p>Chapter 15: Socio-Economics, Tourism and Recreation, and Land Use</p>	<p>During the construction phase, it is anticipated that the cumulative number of construction-related employment opportunities and the Gross Value Added (GVA), both local and national, may increase due to the overlap of the</p>

	<p>construction phases of the cumulative developments with the Proposed Development. Based on the information available at the time of writing, it is not expected that the cumulative impact arising from concurrent developments would change the overall significance of the effect at a local or national level.</p> <p>There is also the potential for negative cumulative effects associated with increased demand for labour. However, the Proposed Development's access to a larger regional labour market would reduce the likelihood of cumulative displacement effects. This also reduces the likelihood of cumulative effects on demographics, demand for housing and services, and demand for tourist accommodation, as it is assumed that many of the construction jobs created by the Proposed Development and other consented developments would be taken up by workers residing in neighbouring areas who would travel to site each day rather than utilising temporary accommodation.</p> <p>During the construction and operation and maintenance phases, there is the potential for cumulative effects for users of PRowS, recreational routes, and other tourism and recreational receptors as a result of disruption, traffic, noise, and visual impacts arising from the Proposed Development and other consented developments. Given the conclusions from the inter-project effects assessments within the other technical chapters, no Significant inter-project effects on tourism and recreation receptors are anticipated.</p> <p>Based on the information available at the time of writing, it is estimated that identified other developments, with sufficient information available, could require in the region of an additional 120ha of BMV land, a very small proportion (0.3%) of the BMV land available in the Study Area of Doncaster and Rotherham.</p> <p>If other developments go ahead during the same temporal scope, it is likely that the scale of the of impact would be increased. For the reasons outlined above, however, cumulative effects are unlikely to be greater than currently identified for the Proposed Development, as it is assumed that the Proposed Development in combination with the other consented developments would account for a relatively small proportion of the agricultural land, and BMV agricultural land, available within the local Study Area.</p>
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	<p>During the operation and maintenance phase, in addition to the Proposed Development, the operational phases of other existing and consented developments are likely to contribute to an increase in employment opportunities and GVA to the local and national economy. The relatively small operational employment typically associated with solar, BESS, and residential developments means that it is not expected that the cumulative impact arising from concurrent developments would change the overall significance of the effect at a national level. Locally, there is modest potential for the availability of work at multiple solar farm sites to further encourage the development of a labour force with skills relevant to the solar sector.</p> <p>For most aspects of the assessment, it is expected that any cumulative effects arising from the decommissioning of the Proposed Development are expected to be comparable to, or less than, those arising during the construction phase.</p>
<p>Chapter 16: Other Environmental Topics</p>	<p>Generation of waste requiring landfill disposal by the Proposed Development combined with that from other developments has the potential to result in an increased burden on regional landfill capacity. Based on the very low waste volumes requiring landfill disposal that will be generated during all phases of the Proposed Development, and the outcome of the impact assessment of Not Significant, it is not anticipated to contribute to potentially Significant inter-project effects with respect to waste.</p> <p>Inter-project effects for glint and glare were considered for RB2025/0714 and RB2025/0029. Due to the low magnitude of predicted glare from the Proposed Development, substantial pre-existing screening and the distance between the solar panels and the receptors, none of the assessed receptors are predicted to experience cumulative glint and glare effects.</p> <p>Inter-project effects in relation to road accidents have been assessed as unlikely due to limited overlap of the construction phases and the limited levels of traffic generated by cumulative developments that could interact with traffic associated with the Proposed Development. With the mitigation and management measures identified within the outline Battery Safety Management Plan (oBSMP) [EN0110020/APP/5.15], it is not expected that other developments would increase the risk or severity of potential fire events associated with the BESS, and their associated effects. This conclusion used the assumption</p>

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	<p>that other developments are designed, constructed and operated in accordance with applicable fire safety legislation, standards and mitigation requirements, secured through their respective consents.</p> <p>Significant inter-cumulative effects in relation to Major Accidents and Disasters (MADs) are therefore not anticipated.</p> <p>It is expected that all electrical infrastructure for the Proposed Development and other cumulative projects will be located and installed in accordance with guidance listed in ES Volume 2, Chapter 16: Other Environmental Topics [EN0110020/APP/6.16]. This will result in magnetic field strengths well below the International Commission on Non-Ionizing Radiation Protection (ICNIRP) reference level of 100µT and therefore No Significant effects are predicted from the Proposed Development cumulatively with other projects.</p>
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17.7 Summary

- 17.7.1 The Proposed Development has the potential to cause inter-project effects (cumulative effects from the impact of multiple developments in addition to the Proposed Development) and intra-project effects (cumulative effects from multiple impacts affecting one receptor).
- 17.7.2 Inter-project effects are considered within each individual technical chapter (**ES Volume 2, Chapters 6 – 16 [EN0110020/APP/6.6 – 6.16]**), and the long list of developments to be considered is provided in **ES Volume 3, Appendix 17.2: Long List of Developments for Cumulative Effects Assessment [EN0110020/APP/6.20]**.
- 17.7.3 A qualitative intra-project effects assessment has been completed to determine where multiple identified environmental impacts may affect the same receptor and therefore result in a larger overall impact to that receptor. Due to the embedded mitigation measures within the Proposed Development, no Significant intra-project effects have been identified.
- 17.7.4 A full human health impact has not been scoped into the EIA, but human health impacts have been considered within the intra-project effects assessment, and no human health impacts from the Proposed Development are anticipated.

References

- ¹ ISEP (2020). Impact Assessment Outlook Journal-Volume 7: Demystifying Cumulative Effects. Available at: [ISEP - Institute of Sustainability and Environmental Professionals/](#)
- ² The European Parliament and the Council of the EU (2014). The EIA Directive (2014/52/EU). Available at: <https://www.legislation.gov.uk/eudr/2014/52/contents>
- ³ The European Parliament and the Council of the EU (2011). The EIA Directive (2011/92/EU). Available at: <https://www.legislation.gov.uk/eudr/2011/92>
- ⁴ United Kingdom (UK) Government (2017). The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. (Online). Available at: The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 [Accessed August 2025].
- ⁵ Department for Energy Security and Net Zero (DESNZ), 2025. Overarching National Policy Statement for Energy (EN-1). Available at: <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1-2025>
- ⁶ Department for Energy Security and Net Zero (DESNZ), 2025. National Policy Statement for renewable energy infrastructure (EN-3). Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3-2025>
- ⁷ Department for Energy Security and Net Zero (DESNZ), 2025. National Policy Statement for renewable energy infrastructure (EN-5). Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5-2025>
- ⁸ UK Government (2024). National Planning Policy Framework. Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>
- ⁹ City of Doncaster Council (2021). Doncaster Local Plan, 2015-2035. Available at: <https://dmbcwebstolive01.blob.core.windows.net/media/Default/Planning/Documents/Local%20Plan/Submission/Doncaster%20Local%20Plan%20Adopted%2023%20Sept%202021.pdf>
- ¹⁰ Rotherham Metropolitan Council (2014). Rotherham Local Plan: Core Strategy, 2013-2028. Available at: <https://www.rotherham.gov.uk/downloads/file/307/adopted-rotherham-core-strategy>
- ¹¹ Rotherham Metropolitan Council (2018). Rotherham Local Plan: Sites and Policies Plan, 2018. Available at: <https://dmbcwebstolive01.blob.core.windows.net/media/Default/Planning/Documents/Local%20Plan/Submission/Doncaster%20Local%20Plan%20Adopted%2023%20Sept%202021.pdf>
- ¹² Bolsover District Council (2020). Local Plan for Bolsover District. Available at: <https://www.bolsover.gov.uk/services/p/planning-policy/planning-policy-documents/development-plan>
- ¹³ North East Derbyshire District Council (2021). Adopted North East Derbyshire Local Plan 2014-2034. Available at: <https://www.northern-derbyshire.gov.uk/planning-and-local-plan/planning-policy-and-local-plan/development-plan>
- ¹⁴ Bassetlaw District Council (2024). Adopted Bassetlaw Local Plan 2020-2038. Available at: <https://www.bassetlaw.gov.uk/planning-and-building-control/planning-policy/bassetlaw-local-plan-2020-2038/bassetlaw-local-plan-2020-2038/>
- ¹⁵ UK Government (2024). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment>
- ¹⁶ ISEP (2020). Impact Assessment Outlook Journal-Volume 7: Demystifying Cumulative Effects. Available at: <https://www.isepglobal.org/content/impact-assessment-outlook-journal-volume-7-demystifying-cumulative-effects-july-2020/>
- ¹⁷ European Commission, Directorate-General for Environment, COWI, Milieu, McGuinn, J., Lukacova, Z., McNeill, A. *et al.* (2017). Environmental impact assessment of projects: guidance on the preparation of the environmental impact assessment report (Directive 2011/92/EU as amended by 2014/52/EU). Available at: <https://op.europa.eu/en/publication-detail/-/publication/2b399830-cb4b-11e7-a5d5-01aa75ed71a1>
- ^{xviii} UK Government (2024). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment>
- ^{xix} The Planning Inspectorate. (2025). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Online. Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment> [Accessed August 2025].



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