



One Earth Solar Farm

Preliminary Environmental Information Report [EN010159]

Volume 2 - Scoping Consultation

May 2024

One Earth Solar Farm Ltd

Contents

Contents

One Earth Solar Farm Scoping Report _____

PINs Scoping Opinion _____



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Scoping Report

November 2023

One Earth Solar Farm Ltd

Contents

Contents	1
1. Introduction	2
2. Description of the Site and Surrounding Area	11
3. The Development Proposals	18
4. Planning Policy Context	30
5. Approach to EIA	40
6. Biodiversity	50
7. Hydrology and Hydrogeology	66
8. Land and Soils	82
9. Buried Heritage	90
10. Cultural Heritage	96
11. Landscape and Visual	108
12. Transport and Access	124
13. Air Quality	133
14. Carbon and Climate Change	145
15. Noise and Vibration	152
16. Human Health	164
17. Socio-Economics	183
18. Environmental Topics Scoped Out	190
Appendices	194
Appendix A	195

1. Introduction

- 1.1. Logika Group Ltd has been commissioned to prepare the Environmental Impact Assessment (EIA) Scoping Report to accompany a request for a Scoping Opinion from the Planning Inspectorate (prepared on behalf of the Secretary of State) for the One Earth Solar Farm by One Earth Solar Farm Ltd (the 'Applicant').
- 1.2. The One Earth Solar Farm comprises the construction and installation of solar photovoltaic panels, Battery Energy Storage Systems (BESS) and associated grid connection infrastructure which would allow for the generation of an anticipated 740 megawatts (MW) of electricity (the 'Proposed Development') across approximately 1,500 hectares (ha) in Lincolnshire and Nottinghamshire (the 'Site').

The Applicant

- 1.3. One Earth Solar Farm is being promoted by One Earth Solar Farm Ltd. This is a joint venture between Padero Solaer Ltd (trading as PS Renewables) and Ørsted Onshore UK Ltd.
- 1.4. Established in 2012, PS Renewables is one of the UK's largest privately held companies that specialises in the development and asset management of renewable energy projects including solar and BESS. PS Renewables existing solar farm portfolio totals over 300MW of electricity producing potential.
- 1.5. In the UK, Ørsted is a leading offshore wind developer; currently operating 12 offshore wind farms, alongside onshore wind farms in Scotland, and owns and operates sites for energy storage. Ørsted is committed to ensuring that its presence contributes to sustainable growth and development, helping to support the UK in meeting its legally binding net zero targets and benefitting the communities in which it operates.

Consenting Regime and Requirement for Environmental Impact Assessment

Purpose of EIA

- 1.6. The term EIA describes a procedure that must be followed by certain types of project before it can be given 'consent'. Underpinned by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017¹, as amended (hereafter referred to as the 'EIA Regulations'), EIA is a formal process required for certain types of development that brings together information to identify the likely significant environmental effects of a project and measures for avoiding, preventing, reducing or, if possible, offsetting likely significant effects. It provides decision-makers with the environmental information needed to make sustainable decisions when determining applications for certain developments and provides information on the likely significant effects of certain developments to the public to understand as part of participating in the planning process.

¹ His Majesty's Office (HMSO) (2017) Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

The Need for EIA

- 1.7. The aim of EIA is to protect the environment by ensuring that a determining body such as the Secretary of State, when deciding whether to grant consent for a project which is likely to have significant effects on the environment, does so in the full knowledge of these likely significant effects, and thus takes them into account in the decision-making process. The EIA Regulations set out a procedure for identifying those projects which should be subject to an EIA, and for assessing, consulting, and coming to a decision on those projects which are likely to have significant environmental effects.
- 1.8. The EIA Regulations set out the types of development which must be subject to an EIA (referred to as Schedule 1 development) and other developments, which may be subject to an EIA depending on certain development parameters and / or their potential to give rise to significant environmental effects (referred to as Schedule 2 development).
- 1.9. The Proposed Development does not fall under any of the types of development set out in Schedule 1 of the EIA Regulations. However, the Proposed Development is of a type and scale described in Schedule 2 (a) of the EIA Regulations, and potentially (b) of that Schedule, as follows:

“Energy industry

a) industrial installations for the production of electricity, steam and hot water (projects not included in Schedule 1 to these Regulations);

b) industrial installations for carrying gas, steam and hot water; transmission of electrical energy by overhead cables (projects not included in Schedule 1 to these Regulations);”

Requirement for a DCO

- 1.10. As the Proposed Development is an onshore generating station exceeding 50MW of electricity it is automatically classified as a Nationally Significant Infrastructure Project (NSIP), and therefore requires a Development Consent Order (DCO) under Sections 14(1)(a) and 15(2) of the Planning Act 2008². In this instance the Applicant has concluded that the Proposed Development does require an EIA as its development could lead to likely significant environmental effects. The Applicant has therefore chosen to proceed with production of the documentation to inform an EIA and so this Scoping Report represents under Regulation 8 (1)(b) a notification that the Applicant will prepare and submit an Environmental Statement (ES) in support of the DCO without prior request for a Screening Opinion.

Purpose and Structure of the Scoping Report

- 1.11. The process of identifying the issues to consider within the ES and establishing the scope of the assessment, is known as ‘scoping’. Although scoping is not a mandatory requirement under the EIA Regulations, it is recognised as a useful preliminary procedure which helps to identify the main effects that a proposed development is likely to have on the environment.

² His Majesty’s Office (HMSO) (2008) Planning Act 2008 (as amended)-
<https://www.legislation.gov.uk/ukpga/2008/29/contents>

- 1.12. The purpose of this Scoping Report is to request an opinion from the Secretary of State to the scope, and level of detail, of the information to be provided in the ES under Regulation 10(1) of the EIA Regulations. This will help ensure that the EIA is focused on the key impacts likely to give rise to significant environmental effects and is also used to obtain agreement on the approach and methodologies for assessments which will be reported in the ES, which will accompany the application for the DCO. This Scoping Report also provides the justification and rationale for scoping out environmental aspects or receptors where it is considered that significant environmental effects are unlikely to arise as a result of the Proposed Development.
- 1.13. In line with the requirements of Regulation 10(3) of the EIA Regulations, this request contains the following information to assist PINS, on behalf of the Secretary of State, in adopting a Scoping Opinion:
- > A plan sufficient to identify the land where development could occur (see Figure 2-1 and Appendix A);
 - > A description of the Proposed Development, including its location and technical capacity (see Chapter 3);
 - > An explanation of the likely significant effects of the Proposed Development on the environment (see Chapters 6 to 18); and
 - > Such other information or representation as the person making the request may wish to provide or make (see Chapters 6 to 18).
- 1.14. In addition, this Scoping Request has been prepared in accordance with the PINS Advice Note Seven, which recommends that a request for a Scoping Opinion should also include:
- > The Proposed Development
 - An explanation of the approach to addressing uncertainty where such remains in relation to elements of the Proposed Development e.g. design parameters (see Chapter 3).
 - Referenced plans presented at an appropriate scale to convey clearly the information and all known features associated with the Proposed Development (see Appendix A).
 - > EIA Approach and Topic Areas
 - An outline of the reasonable alternatives considered and the reasons for selecting the preferred option (see Chapter 2 and Chapter 3).
 - A summary table depicting each of the aspects and matters that are requested to be scoped out allowing for quick identification of issues (see Chapters 6 to 18).
 - A detailed description of the aspects and matters proposed to be scoped out of further assessment with justification provided (see Chapters 6 to 18).
 - Results of desktop and baseline studies where available and where relevant to the decision to scope in or out aspects or matters (see Chapters 6 to 17).

- Aspects and matters to be scoped in, the report should include details of the methods to be used to assess impacts and to determine significance of effects e.g. criteria for determining sensitivity and magnitude (see Chapters 5 to 17).
- Any avoidance or mitigation measures proposed, how they may be secured and the anticipated residual effects (see Chapters 6 to 17).

> Information Sources and Guidance

- references to any guidance and best practice to be relied upon (see Chapters 6 to 18);
- evidence of agreements reached with consultation bodies (for example the statutory nature conservation bodies or local authorities) (see Chapters 6 to 17); and
- an outline of the structure of the proposed ES (see Chapter 5).

Project Team

- 1.15. Regulation 14(4) of the EIA Regulations require that in order to ensure the completeness and quality of the ES, ‘(a) the applicant must ensure that the environmental statement is prepared by competent experts; and (b) the environmental statement must be accompanied by a statement from the applicant outlining the relevant expertise or qualifications of such experts.’
- 1.16. In accordance with this requirement Table 1-1 sets out the technical specialists and their relevant expertise who have contributed to the preparation of this Scoping Report and will undertake the EIA that will be reported in the ES. Table 1-1 shows the EIA team is competent to undertake the EIA.

Table 1-1: EIA Consultant Team

Name	Company	Aspect Covered	Qualifications	Description of Competence
Toby Gibbs	Logika Consultants Ltd	EIA	CEnv, CMIEEM	A Chartered Environmentalist and a specialist in EIA having worked on many infrastructure projects, and with experience in the UK, Europe, Africa and the Middle East. Projects include being engaged to provide environmental support to the development of Heathrow Airport's expansion proposals, a major NSIP development. He was also the Director responsible for the EIA that formed part of the DCO documentation for reopening Manston Airport in Kent and had a leadership role in the EIA for Hinkley Point C new Nuclear Power Station DCO application.

Guido Pellizzaro	Logika Consultants Ltd	EIA	BSc (Hons) MIAQM AMIEEnvSc PIEMA	Environmental consultant with more than 15 years' experience overseeing the production of EIA reports and ES' for a range of developments, including solar, throughout the UK. Expert in the management of ES' including liaising with clients, external organisations and project team members. Working as part of the team in providing technical advice on a wide range of environmental issues.
Alan Kirby	Logika Consultants Ltd	Ecology and Biodiversity	BSC(HONS), MSC, PHD	Alan is an ecologist with 19 years of consulting experience. Alan has led the biodiversity inputs on a number of large infrastructure projects including input into the ES's as part of the DCO applications for Rampion 2 Offshore Wind Farm (ongoing), the Heathrow Expansion Project, Navitus Bay Offshore Windfarm (NBOWF) and the North London (Electricity Line) Reinforcement Project. He has also provided input to DCO Examination hearing sessions (e.g. Hinkley Point C NNB, NBOWF and Triton Knoll Electrical System), Public Inquiries and Examinations in Public including the provision of written representations, the negotiation of Statements of Common Ground and the giving of oral evidence as an expert witness.
Craig Thwaites	Logika Consultants Ltd	Hydrology and Hydrogeology	MEng	Craig has worked on a variety of complex solar projects across the UK including Tregonning Solar Farm and Inkersall Road Solar Farm. Within all these projects Craig uses his experience to impact design and inform the design team on the requirements and benefits that are provided by implementing sustainable flood and drainage solutions.

Simon McMillan	ADAS	Land and Soils	BASIS, BSSS	Simon is a senior soils consultant for ADAS (an RSK company). He has expertise in the management and delivery of soils consultancy and agricultural and environmental research. In recent years he has delivered soil surveys and provided reports for hundreds of projects, including large scale solar, rail, housing and cross-country pipeline projects. These typically comprise agricultural land classification (ALC), soil resources plans and soils aftercare management plans. Simon was a lead surveyor Welsh Government project that undertook the largest scale soil survey for over 30 years, covering around 3,000 ha of Wales to help develop the Welsh Government's predictive ALC tool.
Claire Cogar	Iceni	Buried Heritage	MCIfA	Claire is the director of archaeology at Iceni. She has extensive experience of development-led archaeology. She has managed works on the Thames Tideway and HS2 Infrastructure schemes and has carved out a niche in undertaking the archaeological and heritage components of large-scale public sector health projects.
Georgia Foy	Iceni	Cultural Heritage	BA (hons)	Georgia specialises in large scale development schemes affecting the historic environment and townscape character, where a careful but pragmatic approach is needed to balance the need for development with the heritage and townscape sensitivities of a place. Her particular expertise is in detailed policy appraisals, design and feasibility advice and inputting into Environmental Impact Assessments

Sam Griffiths	Iceni	Landscape and Visual	CMLI	Sam is an Associate Landscape Architect at Iceni working on complex projects as part of multidisciplinary teams, including preparation of landscape planning and design deliverables for Nationally Significant Infrastructure. Sam was part of the landscape team for the DCO consented Longfield Solar Farm.
Gordon Buchan	Pell Frischmann	Transport and Access	BEng (Hons), MSc, CMILT, FCIHT	Gordon Buchan is a highly experienced Transport Planner, having worked on wide range of projects across the UK, Ireland and Scandinavia. Gordon specialises in private sector development and renewable energy projects. He has supported several EDF projects in the UK and have acted as Expert Witness on a number of Public Inquiries and NSIP hearings. He has given presentations at the ICE Infrastructure Show at the NEC and at the All Energy conference in Aberdeen on two occasions. Gordon was a finalist in the 2018 NCE 100 Alternative Energy Award category.
Chris Whall	Air Quality Consultants Ltd	Air Quality	CEnv, MiEnvSci, MIAQM	Chris is a Chartered Environmentalist with over 20 years' experience in environmental consulting. He has a background in air quality, climate change and emissions quantification, impact assessment and management. Chris has particular expertise in the management and delivery of complex air quality and carbon assessments for major infrastructure projects, most notably in the power and transport sectors including Development Consent Order applications and highly contentious public consultation exercises.

Laurence Caird	Air Quality Consultants Ltd	Climate Change	Csci, MIEA, IAQM	<p>Laurence is a Chartered Scientist with 15 years' experience in the field of environmental consultancy with extensive experience in air quality and climate change assessments.</p> <p>He helped shape the methodology for the assessment of greenhouse gas emissions within EIA to satisfy the requirements of the EIA Regulations 2017. He has produced carbon footprints and greenhouse gas assessments for a number of projects including major infrastructure projects including transportation, as well as EIA residential, commercial and mixed-use developments and industrial facilities</p>
Jon Sims	Noise Consultants Ltd	Noise and Vibration	BEng (hons), BSc (hons), MIO	<p>Jon has over 15 years experience in acoustic consultants, this includes many large infrastructure projects including onshore and offshore wind farms, energy transmission systems, rail, road and large industrial projects. Jon provided consultancy advice on noise to HS2 Ltd for several years, particularly in relation to the construction and operation of Phase 1 of HS2, the DCO application for Triton Knoll Offshore Wind Farm Onshore Electrical system, including giving evidence on noise at the planning hearing and environmental permitting for several power stations.</p>
Jon Wright	Iceni	Health	Full Member RTPI, AIEMA	<p>Jon has significant solar experience in the completion on heath assessments; he held a role within the in-house planning team of Lightsource BP, a global leader in the development and management of solar projects and smart energy solutions. He was responsible for large-scale solar farm planning applications throughout the UK and Republic of Ireland.</p>

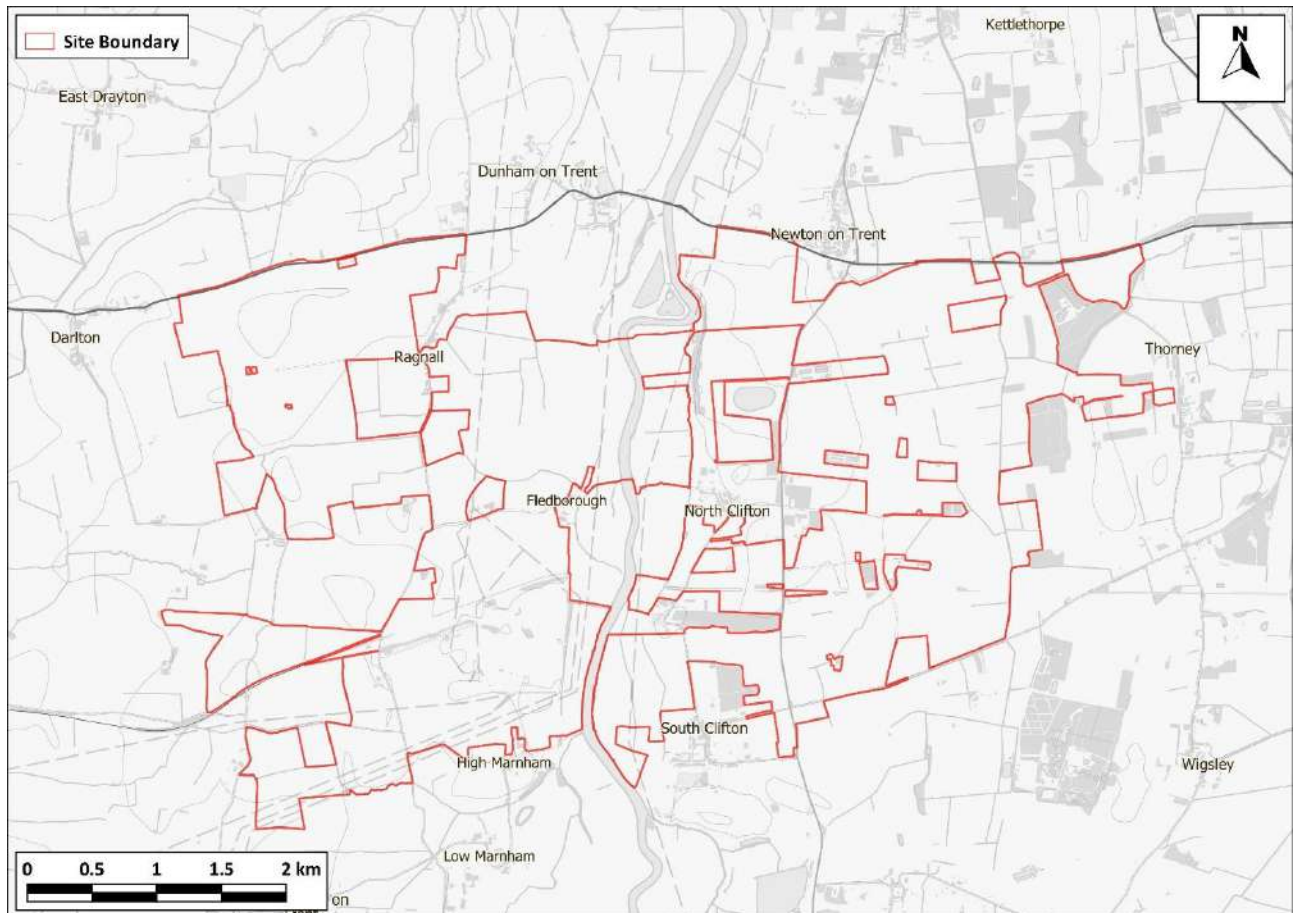
David Tyrer	Logika Consultants Ltd	Socio-Economics	Msc BA (Hons)	David is an environmental policy and economics expert with nearly 20 years professional experience. He specialises in socio-economic impact assessment, cost benefit analysis, impact assessment and valuation, in the context of government policy as well as development plans and projects. He has led studies for the then Department for Communities and Local Government on the UK costs and benefits of the EU proposals for a revised EIA Directive and a further analysis of the adopted proposals (now the 2017 EIA Regs). He has long experience of preparing and reviewing socio-economic assessment as part of the EIA and DCO processes (including airports, nuclear power stations, wind farms, urban extensions, and various mixed-use developments in the UK and overseas).
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2. Description of the Site and Surrounding Area

Site Location and Boundary

- 2.1. The Site is located at OS grid reference SK816718 (approximate centre of the Site). The Site boundary is shown in Figure 2-1 and consists of approximately 1,500 hectares (ha) of land, comprising of approximately 170 agricultural fields located to the east and west of the River Trent. Hedgerows, trees and woodland form the boundaries to many of the fields within the Site. At its maximum, the Site extends approximately 4.5km in a north-south direction and approximately 8km in an east-west direction.

Figure 2-1 Site Boundary



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- 2.2. The Site falls across two county boundaries and three local authorities. Approximately 1,250ha of the Site falls within Nottinghamshire County Council and the remaining 250ha of the Site falls within Lincolnshire County Council. The Site also extends across three administrative boundaries these being Newark and Sherwood District Council, West Lindsey District Council and Bassetlaw District Council.
- 2.3. The River Trent dissects the Site in a north-south alignment. The nearest villages include:
- > North Clifton and South Clifton located on the eastern boundaries of the Site;

- > Newton on Trent located within 50m of the nearest boundary of the Site to the north;
- > Dunham located within 500m to the north of the nearest boundary of the Site;
- > Fledborough located on the western boundaries of the Site; and
- > Ragnall located on the western boundaries of the Site.

2.4. In addition, there are a number of isolated properties and hamlets, which are dispersed throughout the landscape. To the southwest of the Site is the existing national grid substation at High Marnham, which will provide the connection for the project to the National Grid Electricity Transmission network. The Applicant has secured a connection agreement with National Grid which would allow export and import up to 740MW of electricity to the High Marnham substation (more details are provided in Chapter 3 of this Report).

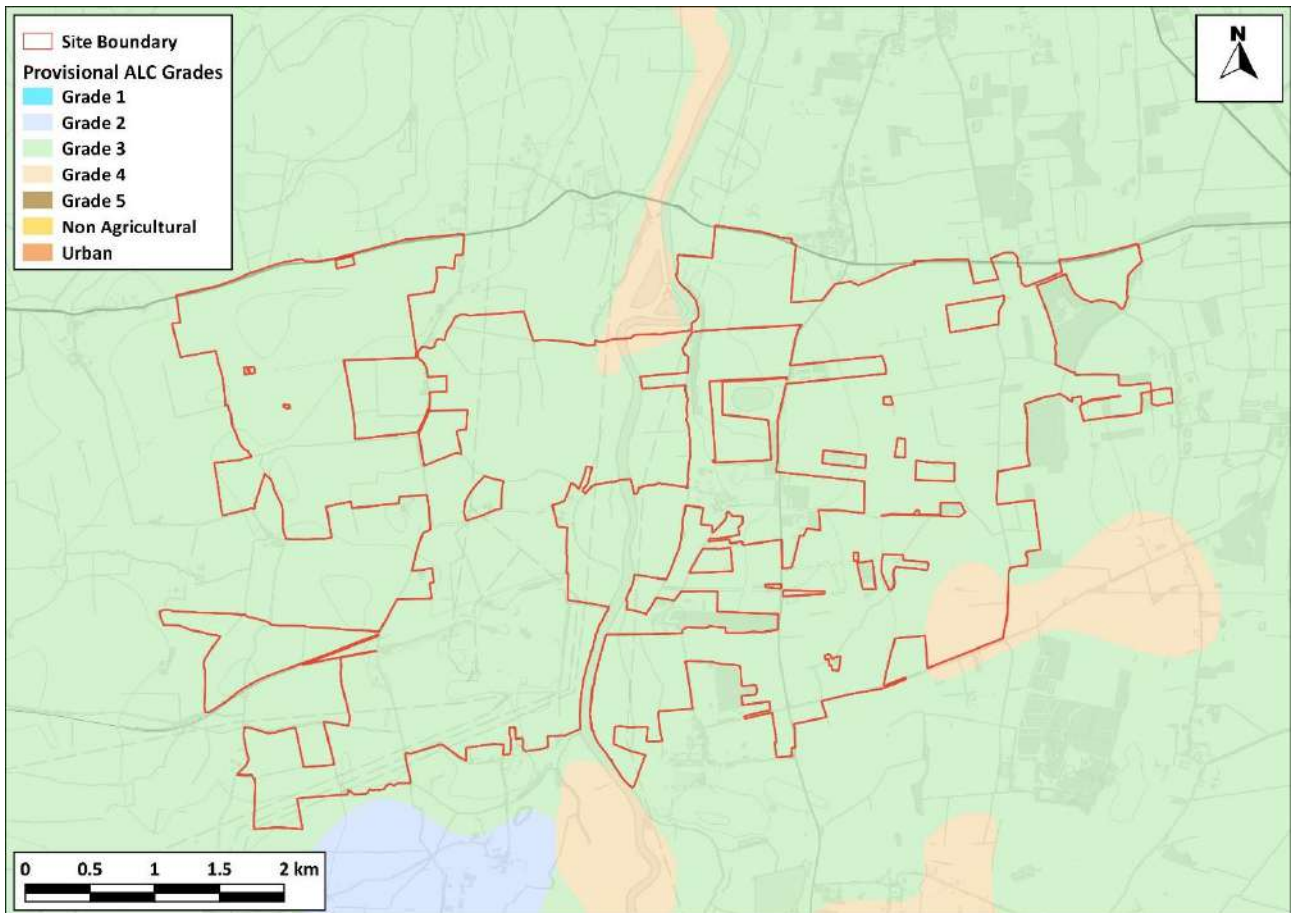
Environmental Characteristics

2.5. The below paragraphs present details relating to the main environmental characteristics of the Site and surrounding area. A detailed summary of the environmental baseline is contained within each of the individual environmental aspect chapters (see Chapters 6 to 17).

Land use

2.6. The Site is predominantly arable agricultural land and includes a network of hedgerows, drains and ditches, and blocks of woodland. The Agricultural Land Classification (ALC) mapping published by Natural England indicates that much of the Site consists of Grade 3 (good to moderate agricultural land) with an area of Grade 4 (poor) land to the southeast. A plan showing the ALC grades across the Site is provided in Figure 2-2.

Figure 2-2: Agricultural Land Classifications across the Site



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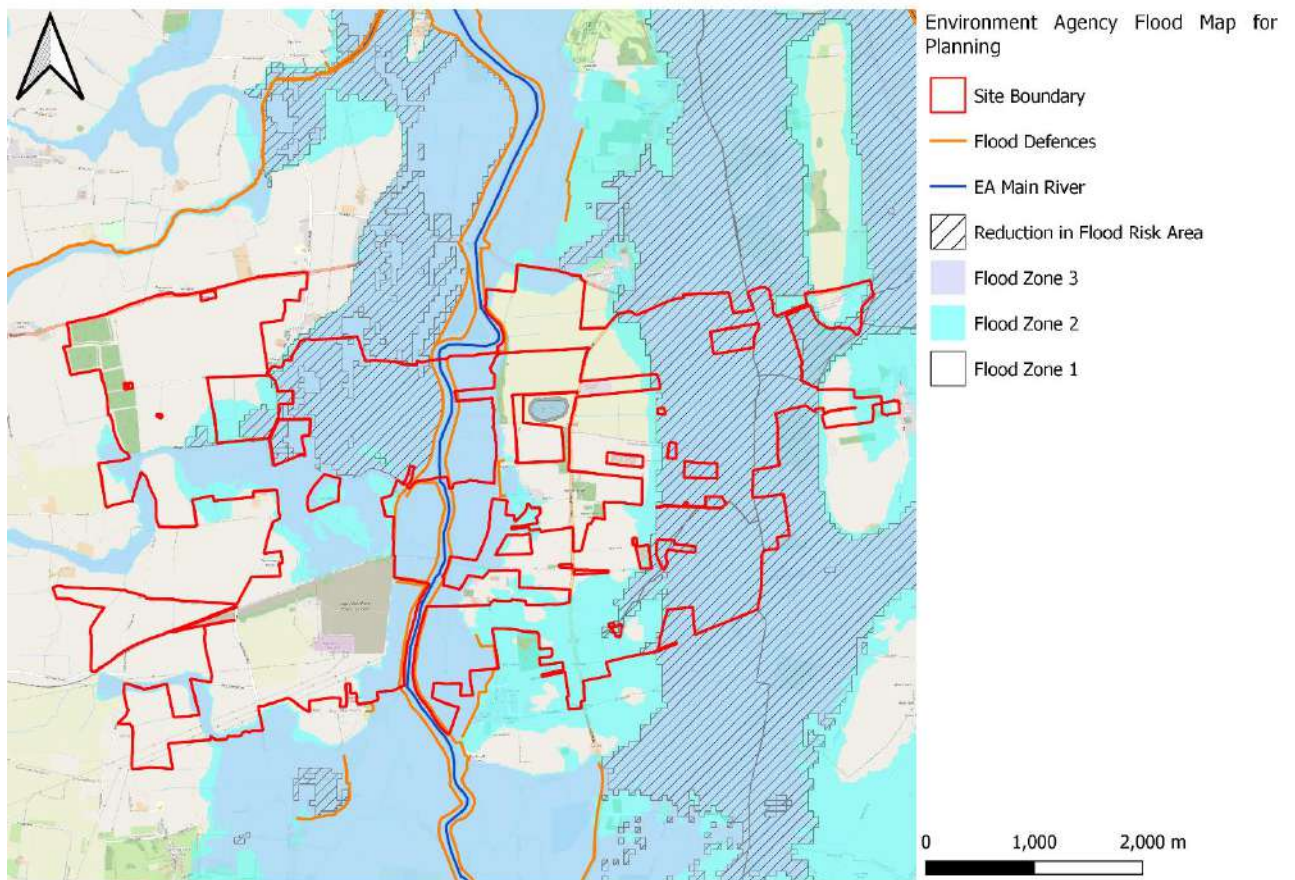
- 2.7. As discussed in Chapter 8, detailed fieldwork to study the soil across the Site commenced in October 2023 and is anticipated to be completed in Q1 2024. Preliminary information from the survey will be reported in the Preliminary Environmental Information Report (PEIR) to give consultees an opportunity to understand what likely significant effects may occur. The final results will be reported in the ES.

Water Resources

- 2.8. The River Trent runs through the Site on a general south-north alignment flowing from Staffordshire northwards toward the Humber Estuary. The river effectively separates the Site into those parcels to the west and those to the east of the Trent. A network of drains and field ditches that follow field boundaries are also present across the Site.

2.9. The River Trent is tidal at this location and, as shown in Figure 2-3, approximately 55% of the Site is within Flood Zones 2 and 3, indicating a medium and high probability of flooding from tidal and fluvial sources. This flooding is considered to originate and be predominantly associated with the River Trent. There are a number of flood defences within the Site, this includes embankments between Fledborough and Dunham-on-Trent and at South Clifton and North Clifton. As such the areas within Flood Zones 2 and 3 would experience a reduction in flood risk due to the presence of the existing flood defences.

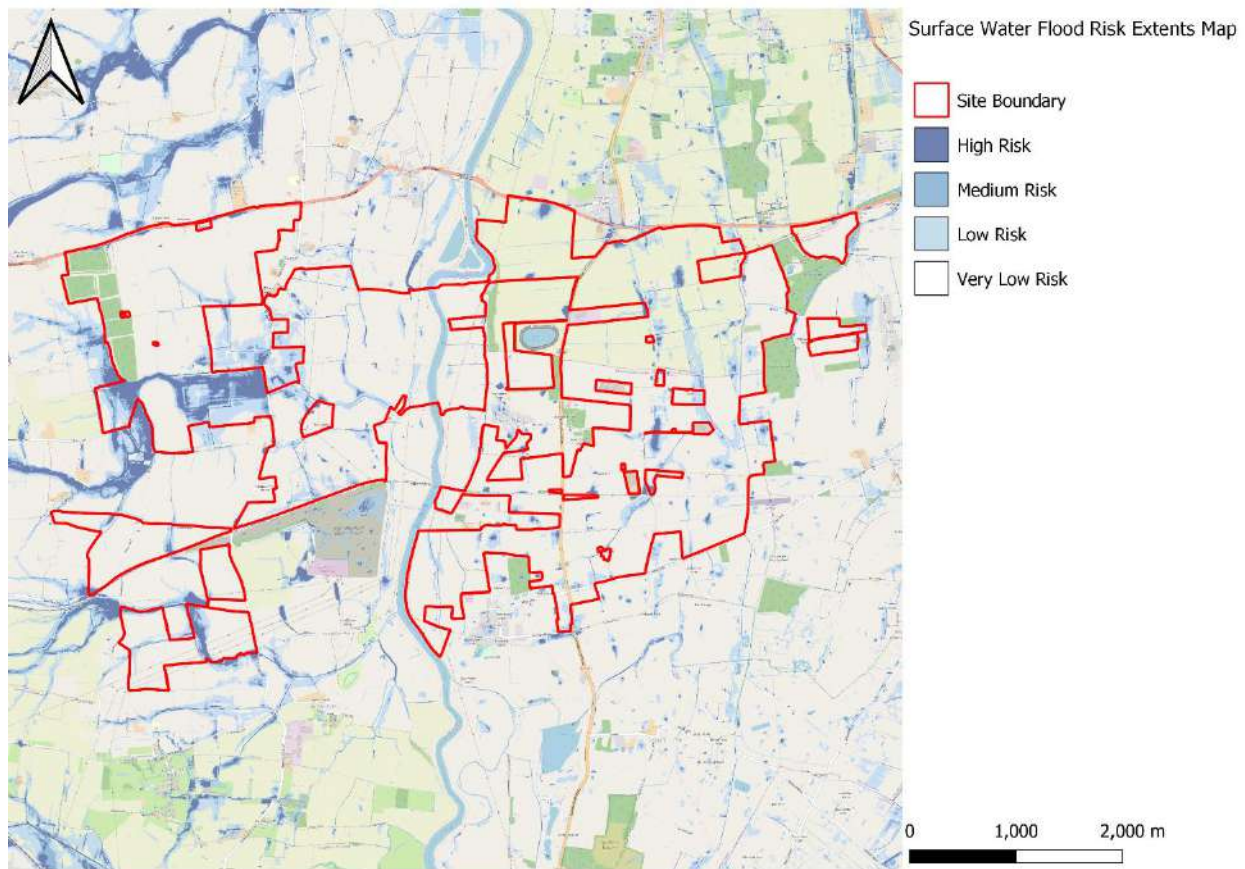
Figure 2-3: Environment Agency Flood Map for Planning



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2.10. The Site is predominantly considered to be at low risk of surface water flooding. As shown in Figure 2-4, there are however localised areas within the Site which are shown to be at low, medium and high risk, which are largely associated with the Fledborough Beck in the west and unnamed Ordinary Watercourses in the southwest and east of the Site.

Figure 2-4: Environment Agency Flood Risk from Surface Water Map



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Biodiversity

- 2.11. The Site is not covered by any statutory ecological designations. The closest statutory designations to the Site include:
- > Birklands and Bilhaugh Special Area of Conservation (SAC) which is located approximately 12km from the nearest part of the boundary to the west of the Site and is designated for its presence of old acidophilous oak woods and is notable for its rich invertebrate fauna, particularly spiders, and for a diverse fungal assemblage;
 - > Besthorpe Warren Sites of Special Scientific Interest (SSSI) which is located approximately 5km to the southeast from the nearest part of the Site boundary, and is designated for the mosaic of dry acid grassland and dune grassland;
 - > Besthorpe Meadows SSSI is located approximately 5km south from the nearest part of the Site boundary, and is designated for the wet grassland and associated wetland habitats; and,
 - > Spalford Warren SSSI is approximately 4km south from the nearest part of the Site boundary and is designated for the presence of grass heath.
- 2.12. In addition to the above, whilst not subject to formal designation, the Sherwood Forest prospective potential Special Protected Area (ppSPA) is recognised by planning policy and statutory consultees to support notable populations of nightjar and woodlark. This ppSPA is located approximately 16km also to the west from the centre of the Site.

- 2.13. The Fledborough Holme Local Wildlife Site is not located in the Site but is located on the boundary of the Site, east of Fledborough and west of the River Trent.

Cultural Heritage

- 2.14. There are no listed buildings or Registered Parks and Gardens within the Site. The South Clifton Conservation Area is located within 1km to the east from the closest edge of the Site boundary.
- 2.15. There are a number of designated heritage assets within 1km of the Site boundary comprising:
- > 3 Grade I listed buildings;
 - > 6 Grade II* listed buildings; and
 - > 61 Grade II listed buildings.

Buried Heritage

- 2.16. There are no Registered Battlefields or World Heritage Sites within 1km of the Site boundary.
- 2.17. The Site includes a number of Scheduled Monuments, which are shown in Appendix A, including:
- > A Roman Vexillation Fortress, two Roman Marching Camps, and a Royal Observer Corps monitoring post located within land south of the A57 and east of the River Trent. This monument comprises a 1st century Roman vexillation fortress sits on a ridge above the River Trent. The fortress is visible as a series of cropmarks; and
 - > Whimpton Moor medieval village and moated site which straddles the A57 to the west of the River Trent. This monument includes the earthwork and buried remains of Whimpton Moor medieval village, including a moated site.
- 2.18. Although these Scheduled Monuments fall within the Site, the Proposed Development does not include any solar panels or associated infrastructure on them (see Appendix A), and these sites would only be used for potential mitigation and enhancement (more detail is shown in Chapter 3).

Transport And Access

- 2.19. The Site is currently accessible from a number of existing field accesses that are currently capable of facilitating the movement onto the Site of large agricultural machinery.
- 2.20. In terms of the Strategic Road Network (SRN), the A1 which connects Blyth to the north and to Stamford in the south, is located approximately 8km to the east from the centre of the Site. The A1 forms a junction with the A57, which connects Markham Moor to Lincoln. The A57 is located on the northern boundary, approximately 2.5km from the centre of the Site. The A57 runs eastwards before forming a junction with the A46 to the east of the Site. The A1133 is located within the eastern part of the Site, approximately 1.5km to the east from the centre of the Site, and connects Torksey Lock with Winthorpe, where it then joins the A46.

- 2.21. The Trent Valley Way extends for 174km from Nottingham in the south, to the Humber Estuary. This long-distance footpath route follows the eastern edge of the River Trent as it runs through the Site. In addition, there are several footpaths and bridleways that cross the Site.
- 2.22. Located within the Site and approximately 500m south of the centre of the Site, is the Sustrans Cycle Route 647. This path is part of the National Cycle Network (NCN) and is a disused railway line associated with the former Lancashire, Derbyshire and East Coast Railway, which runs east-west and that connected Lincoln to the east with Tuxford to the west. Crossing over the River Trent, the Sustrans Route includes Fledborough Viaduct consisting of masonry arches. This is one of a few river crossing opportunities in the locality.
- 2.23. The access and recreation resources are shown in Appendix A.

Existing Infrastructure

- 2.24. The site of the former High Marnham coal fuelled Power Station is located on the southwest boundary of the Site, which was decommissioned in 2003. The final site clearance of the facility was undertaken in 2012 with the demolition of the cooling towers. The remaining infrastructure comprises extensive metalled roadways, including the access road from Fledborough Road to the west, as well as the former pump house on the River Trent.
- 2.25. On the site of the former High Marnham Power Station remains a National Grid 400 kilovolt (kV) and 275kV substation. The Proposed Development will connect into the referred substation or the substation that may be modified from time to time by National Grid in this location. As above, the Applicant has secured a connection agreement with National Grid which would allow export and import up to 740MW of electricity to the High Marnham substation (more details are provided in Chapter 3 of this Report).
- 2.26. National Grid overhead power lines carried by pylon structures are located to the east of the River Trent travelling north to south, and are also located throughout the land to the west of the River Trent. The numerous pylons and high voltage overhead power lines dominate the localised setting (further detail is provided in Chapter 11).
- 2.27. Approximately 6.5km to the north of the Site is the site of the decommissioned coal-fired Cottam Power Station. In August 2023 demolition occurred of the main building, bunker bay, turbine hall and the coal conveyer.
- 2.28. Utilities searches within the Site are ongoing and will help inform the design of the Proposed Development.

3. The Development Proposals

The Proposed Development

- 3.1. The design of the Proposed Development is currently ongoing, informed by operational needs and a range of technical and environmental aspects, as well as responses from the consultation and engagement undertaken. At the point of the DCO application the design will have reached a state of maturity appropriate to allow the EIA to be undertaken. Information provided on layout and design within the DCO application will be based on the principles of the ‘Rochdale Envelope’ (See Chapter 5) in accordance with PINS Advice Note 9: Rochdale Envelope. The Rochdale Envelope is an acknowledged way of dealing with an application comprising EIA development where details of a project have not been fully resolved by the time the application is submitted. This means that maximum design parameters will be adopted to provide sufficient flexibility for the later detailed design of the Proposed Development (detailed design would take place post granting of the DCO and would be subject to a requirement in the DCO, for details to be approved by the relevant local planning authority), whilst also allowing for a robust assessment of environmental effects (this assessment being based on maximum ‘worst case’ parameters) to be made.
- 3.2. Appendix A provides a plan sufficient to identify the land where development could occur. Appendix A was published as part of the non-statutory Stage 1 community consultation which took place between 27th September 2023 and 8th November 2023.
- 3.3. It is noted the Proposed Development will be aligned to the ‘*Design Principles for National Infrastructure*’ as set out by the National Infrastructure Commission³. The guidance seeks to embed the following four key considerations into the conception, planning and delivery of nationally significant infrastructure projects:
- > Climate - Infrastructure must help set the trajectory for the UK to achieve net zero greenhouse gas emissions by 2050 or sooner and be capable of adapting to climate change.
 - > People – Projects should be human scale, instinctive to use and seek opportunities to improve the quality of life for people who live and work nearby.
 - > Places – Schemes should provide a sense of identity for communities, supporting the natural and built environment and enriching ecosystems.
 - > Value – Value should be added beyond the main purpose of the infrastructure, solving problems well and achieving multiple benefits.
- 3.4. As the Proposed Development progresses, the guiding principles for the detailed design of the scheme will be developed and will be set out in the Outline Design Principles documents which will be included as part of the DCO application.
- 3.5. The Proposed Development will comprise the following:

³ National Infrastructure Commission, Design Group (2020) Climate, People, Places, Value: Design Principles for National Infrastructure

Solar PV Arrays

- 3.6. Solar PV modules convert sunlight into electricity by utilising individual photovoltaic cells to generate a direct current (DC) electrical output. Typically, a module will be up to 2.6m long and 1.3m wide, the photovoltaic cells are beneath a layer of toughened glass. The module is typically built from anodised aluminium. Figure 3-1 shows a typical group of solar PV modules.

Figure 3-1: Example of a Solar Array



Photography undertaken by Ps Renewables 2023

- 3.7. The Proposed Development will consist of a ground mounted solar PV system, which will connect to the High Marnham substation. The DC generating capacity of each Solar PV module cannot be confirmed at this early stage as it will depend on advances in technological capabilities that are available at the time of construction.
- 3.8. As shown in Figure 3-2, the Solar PV modules will be fixed to a mounting structure (discussed below) in groups known as ‘strings’. The number of modules which will make up each string is not yet known. Various factors will help to inform the number and arrangement of modules in each string, and it is likely some flexibility will be required to accommodate future technology developments. The rows of Solar PV modules will be spaced apart to allow for maintenance and for flora to grow underneath. in Appendix A shows the potential areas for solar PV and potential infrastructure, as well as potential areas for mitigation and enhancement.
- 3.9. At this stage there are two options for the mounting structures, which are:
- > Fixed South Facing Arrays: The fixed south facing PV modules would be fixed in a position at an angle between approximately 10 to 25 degrees from the horizontal.

- > **Single Axis Tracker Arrays:** The single-axis tracker Solar PV modules move solar panels aligned with the north and south allowing the panels to track the sun from east to west. The tracker arrays would be oriented at a 50 to 60-degree angle from the horizontal facing east in the morning and would track as they pivot up to 60 degrees from the horizontal to face west in the evening.

3.10. Further detail will inform the DCO application.

Figure 3-2: Example of a Fixed South Facing Array



Photography undertaken by Ps Renewables 2023

Module Height and Specification

- 3.11. The solar PV modules will vary in height, at this stage it is considered in areas without flood risk and where flood depths are less than 1m, the maximum height of the top of the Solar PV modules would be 3.8m. The maximum heights in areas of flood risk greater than 1m will be determined following further discussions with the Environment Agency (see Chapter 7 for further details on flood risk). The maximum heights will be detailed in the DCO application.

Solar PV Module Mounting Structures

- 3.12. The solar PV modules will be mounted on metal racks, known as mounting structures. These will likely be supported by steel poles driven, typically driven 1m to 3.5m, depending on ground conditions. In areas where ground penetration is unsuitable, alternative foundations will be required. These may include concrete ballast foundation to which the mounting structures will be affixed. The maximum depth of the mounting structure piles will be detailed in the DCO application

Inverters

- 3.13. Inverters convert DC electricity from the solar PV modules to alternating current (AC), allowing export onto the grid system. The number of modules that can be connected to each inverter will be determined by the size of the inverters available in the market. Inverter technology is in continuous evolution. Two types of inverters are being considered for use within the Proposed Development:
- > Central container inverters – these are bigger than string inverters so a fewer number of them are required..
 - > String inverters – these inverters are smaller than central inverters but carry less power so a higher number of them would need to be installed on the Site.
- 3.14. The decision on which is the most appropriate type of inverter will depend on technical and environmental aspects which will inform the detailed design. An example of a central inverter container is provided in Figure 3-3

Figure 3-3: Example of a Central Inverter Container



Photography undertaken by Ps Renewables 2023

Transformers

- 3.15. Transformers are designed to step up the voltage of the electricity produced by the inverter to enable delivery to the National Grid. Subject to factors that will inform the detailed design, multiple transformer will be required across the Site to meet the power requirements. For central inverters the transformers are likely to be housed in a standard manufactured delivered solution on one base as shown in Figure 3-3. For string inverters, transformers are likely to be installed separately along with a container to house multiple string inverter inputs and protection devices. They are likely to be located across the Site at regular intervals.

3.16. The transformers will connect to an onsite substation (see further details below) to step up the voltage and connect to the substation at High Marnham (see Chapter 2 for further details). The Applicant has secured a connection agreement with National Grid which would allow export and import up to 740MW of electricity to and from the national electricity transmission system to the 275kV grid substation.

Switchgear

3.17. Switchgear includes electrical disconnect switches, fuses or circuit breakers. The purpose of the switchgears is to control and protect the staff and electrical infrastructure during service and maintenance. In general, the switchgears will be located within the central inverter container or adjacent to the transformer containers.

Battery Energy Storage System (BESS)

3.18. BESS will be used within the Proposed Development to maximise electricity generation by allowing the storage of energy generated during times of low demand to be exported and imported to the National Grid at times of high demand.

3.19. The BESS will be designed in accordance with latest guidance and policy, to ensure they operate safely. A management plan for battery safety will be prepared and submitted with the DCO Application.

3.20. In accordance with fire risk management a cooling system, will form part of the BESS, which is designed to regulate temperatures to safe conditions to minimise the risk of fire. Lincolnshire and Nottinghamshire Fire and Rescue services will be consulted as part of the DCO process. In addition, an Unplanned Atmospheric Emissions from BESS Report will be undertaken and submitted as part of the DCO Application which will consider the potential emissions and impact to air quality in the event of a fire.

3.21. The locations of the BESS have not yet been identified; however, they will be situated in areas that minimise potential visual and noise effects, whilst also being located outside of higher flood risk areas. Furthermore, the locations of the BESS will be located at a suitable distance from public right of ways (PRoW) and sensitive areas (such as Local Wildlife Sites and Schedule Monuments). The siting of the BESS will also take account of existing and proposed infrastructure (including proposed access roads within the Site) and will follow relevant health and safety regulation for safe use.

3.22. The typical dimensions of a containerised battery unit are 9.5m x 2.6m x 3.0m in height, however this will depend on the capacity. The units will be located on areas of hard-standing (with typically, up to 1m deep foundations). An example of a BESS facility for illustrative purposes is shown in Figure 3-4.

Figure 3-4: Example of a BESS Facility



Photography taken from www.solarpowerportal.co.uk

Substations

- 3.23. To facilitate the export of electricity to the National Grid the Proposed Development will include substations with transformers to step up voltage levels from site voltage to National Grid voltage level. The substations will comprise electrical infrastructure such as the transformers, switchgear, protection devices, building and metering equipment required to facilitate the export of electricity from the Proposed Development to the National Grid. At this stage the number of substations is unknown and will be informed by technical and environmental aspects. The indicative size of a substation compound is 120m x 80m, with an approximate maximum height of 13m.

Foundations for Electrical Infrastructure

- 3.24. Foundations will be dependent on the local ground conditions and will be subject to engineering analysis. It is considered likely that electrical units will be placed on a concrete base. Details on the foundation design will be detailed in the DCO application.

Onsite Cabling

- 3.25. Onsite cabling will facilitate the transfer of electricity from the solar PV modules to the substations within the Site, as well as to connect to the existing High Marnham substation, which will export the electricity to the National Grid.
- 3.26. Low voltage cabling is required between the solar PV modules and transformers. Higher rated voltage cables are required between the transformers, switch gear and the substation. In addition, data cables will be required to allow for the monitoring and collection of data relating to the export of electricity during the facilities operation.

3.27. At this stage the precise method of cabling is unknown. The majority of cabling (low voltage cables) between the solar PV modules and the inverters are likely to be above ground level and fixed to the mounting structures. The higher voltage cabling is likely to be laid underground in trenches (which will subsequently be backfilled/ covered) according to British standards and regulations, with it being laid using an open-cut method or via horizontal directional drilling. The precise details of the cabling method, as well as its routing, will take account of technical and environmental aspects.

Electricity Export and Point of Connection to the National Electricity Transmission System

3.28. The Proposed Development will connect into the substation at High Marnham located to the southwest of the Site. This will allow the export of up to 740MW of electricity to and from the national electricity transmission system.

3.29. Areas of potential cable routes are identified in Appendix A. This will include cabling that will be required to cross the River Trent, thereby allowing a connection from the eastern parcels of the Proposed Development to the High Marnham substation. The cable route will consider technical and environmental aspects, as well as responses received from consultation.

3.30. The final cable route will be provided as part of the DCO application information.

Fencing, Security & Ancillary Infrastructure

3.31. Security fencing, likely to a maximum of 2.4m above ground level, will surround the Proposed Development. Areas such as the substations inside of the Proposed Development will be fenced according to British standard and regulations.

3.32. As shown in Figure 3-5 CCTV will be installed. Cameras will be mounted on poles, around the perimeter of the Site typically between 2 and 3m high.

Figure 3-5: Example of Pole Mounted CCTV



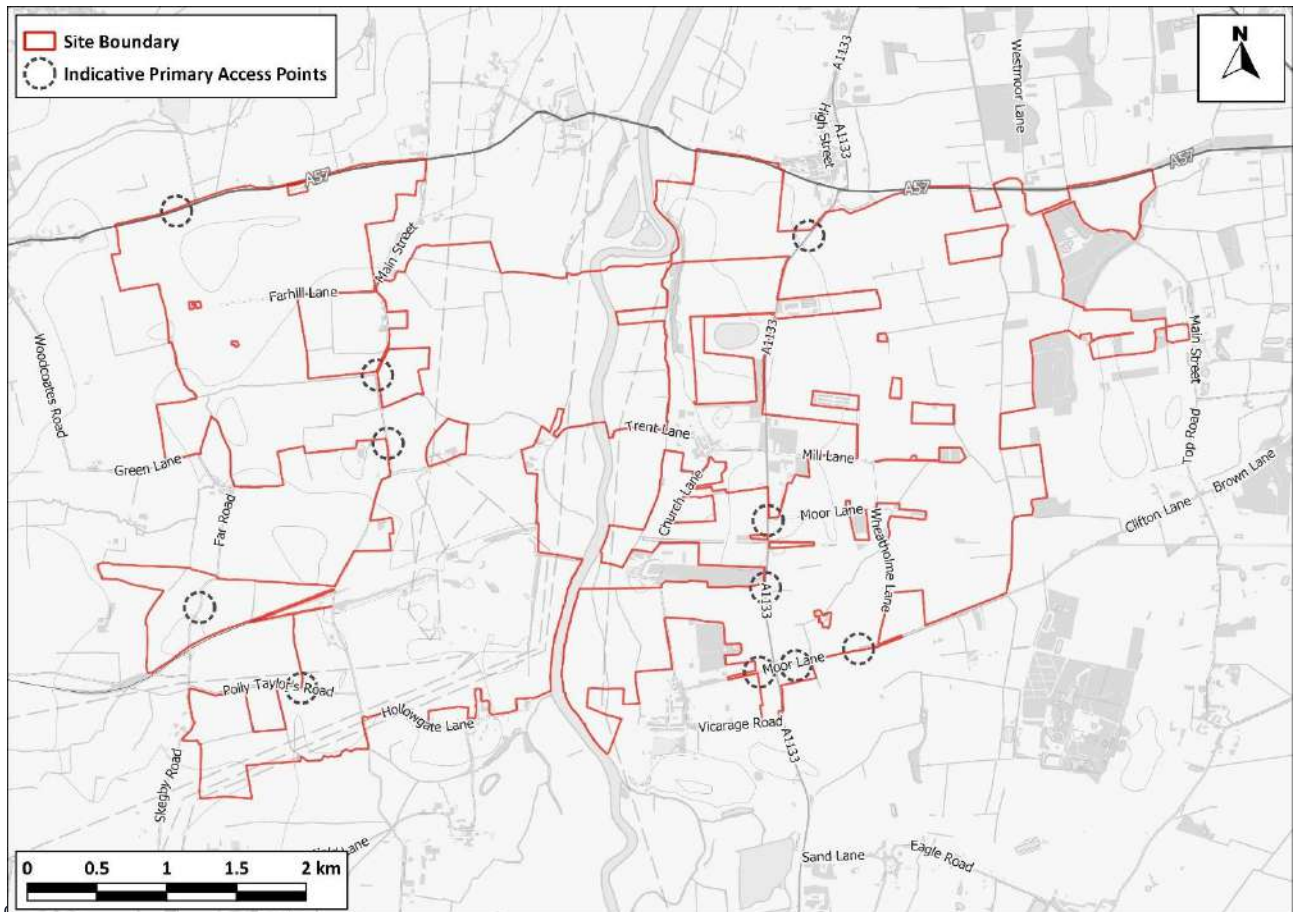
Photography undertaken by Ps Renewables 2023

- 3.33. There will be lighting, to the appropriate standards, of the substation and BESS compounds, albeit neither will be permanently lit and will only be lit when manned or in a health and safety emergency.
- 3.34. Details of the fencing, security and ancillary infrastructure, which will consider technical and environmental aspects, will be provided as part of the DCO application information.
- 3.35. The surface water drainage strategy will likely include underground pipes and potential for surface level treatment infrastructure.

Site Access

- 3.36. As shown in Figure 3-6, the primary points of access to the Site during the operation of the Proposed Development are expected to be:
 - > from the A57 into the western parcels; and
 - > from the A1133 into the eastern parcels.
- 3.37. Consultation and engagement will be undertaken with National Highways and the County Highways Authorities to inform the precise access design and locations.
- 3.38. Tracks within the Site boundaries for internal access and transportation are likely, and where it is feasible, to follow the alignment of existing agricultural tracks and field boundaries. These tracks will typically be constructed of permeable materials such as gravel and will have a maximum running width of up to approximately 6m thereby facilitating two-way HGV traffic.

Figure 3-6: Indicative Locations of Primary Access Points to the Site



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Landscaping, habitat management and biodiversity enhancement

- 3.39. The existing hedgerows, woodland, ditches, ponds and field margins, as well as any other areas deemed to have environmental and in particular landscape or biodiversity value, will be, for the most part, retained within the layout of the solar arrays. Ensuring such will be a key priority of the detailed design stage with for example, existing breaks in hedgerows or ditch crossing points used rather than new ones created. Exceptions to this will be kept to a minimum but may occur where there is a need to create new access tracks, security fencing and cable routes and options do not exist.
- 3.40. The existing Public Rights of Way (PRoW) within the Site will be retained and incorporated into the design of the Proposed Development, although there may be the need for temporary closures and/or diversions during the course of construction and decommissioning, but these would be kept to a minimum. Where possible permitted paths will be included to improve recreational connectivity.
- 3.41. As shown in Appendix A, areas for biodiversity and landscape enhancement have been identified. The Proposed Development will achieve a Biodiversity Net Gain of in excess of 10% with details on how this is to be achieved being provided as part of the DCO application.
- 3.42. An Outline Landscape and Ecological Management Plan (LEMP) will also be submitted as part of the DCO Application; this document will set out the principles for the successful establishment and management of biodiversity and landscaping works.

Construction Phase of the Proposed Development

Construction Programme

- 3.43. At this stage it is anticipated that the construction phase will occur over approximately 18 months. Currently, although this will be influenced by a range of aspects including in particular the timing of submission and determination of the DCO, construction is currently planned to start in 2027 and end in 2029. The construction details will be provided as part of the DCO application information.

Construction Activities

- 3.44. Construction activities will include:

- > Site preparation and access:
 - Transportation of construction materials, plant and equipment;
 - Set up of temporary on-site construction compounds and security fencing for the Site;
 - Road access upgrade and new road construction including haul roads;
 - Construction of cable crossing points over the River Trent;
 - Upgrading existing tracks and construction of new access roads within the Site;
 - Marking the location of infrastructure components; and
 - Targeted site clearance.
- > Solar farm construction infrastructure:
 - Assembling module mounting structures and then mounting the modules themselves;
 - Installation of electric cabling, substations, inverters, transformer cabins, and battery storage units; and
 - Construction of the Substation compounds, BESS compounds, Collector Compounds and installation of equipment.
- > Landscaping and habitat enhancement.
- > Testing and commissioning.

Construction Site Access

- 3.45. Although the exact Site access points for construction are still to be determined, it is known that there will be a different access for both the western and eastern portions of the Site. An access from the A57 to the north will serve the western portion of the Site which will provide connections to Main Street albeit whilst bypassing Ragnall. The eastern portion of the Site will be accessed from A1133, this being also from the north. Thereafter, it is proposed that the western and eastern portions of the Site will be accessed from within the Site, avoiding the routing of HGV traffic through the settlements of Ragnall and North and South Clifton, although it may be necessary to cross some minor roads within the Site, where fields are not adjoining.

- 3.46. An outline Construction Traffic Management Plan (CTMP) will be submitted as part of the DCO application within which there will be further detail on the routing and vehicle movements during the construction stage.

Temporary Construction Site Compounds

- 3.47. Temporary compounds for the storage of materials, plant and equipment, will be established before commencement of the main construction works. The compounds will also include staff welfare facilities, waste storage and wheel washing areas. The construction compounds will require lighting to ensure that they are safe and secure, especially during the winter months.
- 3.48. The location of the temporary construction site compounds, which will consider technical and environmental aspects, as well as feedback from consultation and engagement, will be provided as part of the DCO application information.

Abnormal Indivisible Loads

- 3.49. Where large scale High Voltage (HV) component loads are required for the electrical grid connection, these will be delivered as Abnormal Indivisible Loads (AIL). Detailed swept path analyses will be undertaken for the main constraint points on the route from the nearest suitable trunk road junction through to the proposed substation access junction to demonstrate that components can be delivered to Site and to identify any temporary road works which may be necessary, as well as identifying any additional temporary oversailing rights that might be needed. A Route Survey Report describing the route and the proposed operational management of the deliveries will be submitted as part of the DCO application.

Construction Traffic Management

- 3.50. The DCO application will be supported by an outline CTMP. This will include details on construction logistics and worker travel plans. Measures to control the delivery of materials, plant and equipment will also be included within the Plan.

Construction Environmental Management

- 3.51. An outline Construction Environmental Management Plan (CEMP) will be submitted as part of the DCO application. This will detail the legislation, guidance, best practice and mitigation measures to control and minimise environmental effects during construction. This includes reducing nuisance from:

- > Noise and vibration;
- > Dust and particulate generation;
- > Runoff or contamination from contaminated soils (should there be any) on surface water or groundwater;
- > Soil removal;
- > Construction traffic; and
- > Waste.

Soils Resource Management Plan

- 3.52. An outline Soils Resource Management Plan (SRMP) will be prepared and submitted with the DCO application. The SMP will follow the principles of best practice to maintain the physical properties of any soil that will be disturbed, with the aim of restoring the land to its pre-construction condition at the end of the lifetime of the Proposed Development.

Operational Phase of the Proposed Development

- 3.53. During the operational phase of the Proposed Development, onsite activities will include routine servicing, maintenance and replacement of plant and equipment as well as management of vegetation.

Maintenance

- 3.54. During the operational phase of the Proposed Development, minor maintenance works are expected to occur. This includes inspect, repair, adjust, alter, remove, refurbish, reconstruct, replace and improve any part of, but not remove, reconstruct or replace the whole of the solar infrastructure (including the BESS). Other maintenance includes clean, inspect and maintain internal roads, as well as manage vegetation.

Decommissioning Phase

- 3.55. The operational life of the Proposed Development is not proposed to be specified in the application and at this stage the Applicant is not seeking a time limited consent, although a decision will be made following the preparation of the EIA, depending on whether there are any effects which would justify limiting the time period of the consent.
- 3.56. At the end of the operational phase, above ground infrastructure will be dismantled and recycled or disposed of in accordance with best practice guidance and policy requirements at that time. In advance of decommissioning, the Applicant will produce and seek approval for a Decommissioning Environmental Management Plan (DEMP), which will be secured via a DCO requirement.

4. Planning Policy Context

Introduction

- 4.1. An overview of national, regional and local planning policy relevant to informing the scope of the EIA, is provided within this Chapter. Further information on planning policy where it is specific to a particular technical aspect, is provided within the aspect chapters themselves.
- 4.2. A review of relevant policy will be included within the Environmental Statement. Although adherence to planning policy will have often informed the assessment of effects as detailed within the ES, in particular helping to inform whether an effect is significant or not, absolute compliance of the Proposed Development with relevant planning policies will not be undertaken within the ES but will be set out in the Planning Statement which will also accompany the DCO application.

Planning Act 2008

- 4.3. The Proposed Development constitutes an NSIP, in accordance with the Planning Act 2008, as it comprises:
 - > The construction or extension of a generating station (Part 3, Section 14(1)(a)); and
 - > Its capacity is more than 50MW (Part 3, Section 15(2)l).
- 4.4. Therefore, a DCO application under the Planning Act 2008 is required to be made to PINS as the Examining Authority, for determination by the Secretary of State for Energy Security and Net Zero (DESNZ).
- 4.5. Section 104 of the Planning Act 2008 applies where a relevant National Policy Statement (NPS) has effect. At present, the Proposed Development's energy generating technology (i.e., solar) is not specifically considered by an NPS. This means that, at present, the DCO application for the Proposed Development would be determined under Section 105 of the Planning Act 2008, which applies where no NPS has effect. Under Section 105, the Secretary of State must have regard to any local impact report, any matters prescribed in relation to the Proposed Development and any other matters which the Secretary of State thinks are both important and relevant. However, the Government is currently consulting on revised versions of the energy NPSs. The consultation draft of NPS EN-3 (Renewable Energy) contains a chapter dedicated to solar energy technology. It is envisaged that the revised Energy NPSs will be adopted prior to the submission of the DCO application. Assuming that occurs, then the technology specific policy will be in place and Section 104 of the Planning Act 2008 would apply.
- 4.6. In accordance with Section 104(2) of the Planning Act 2008, the Secretary of State is required to have regard to any relevant NPS amongst other matters, when deciding whether or not to grant a DCO. The relevant NPS would be the newly adopted NPS EN-3.
- 4.7. An overview of the current and draft NPSs that will be considered from a planning policy perspective as part of undertaking the EIA are set out below.

National Policy Statement for Energy (EN-1)⁴

- 4.8. The Overarching NPS for Energy (EN-1), adopted by the Department of Energy and Climate Change (DECC) in July 2011, sets out the national policy for delivering major energy infrastructure in England and Wales. The NPS has effect in combination with the relevant technology specific NPS, National Policy for Renewable Energy Infrastructure (EN-3), and together they provide the primary basis for decisions made by the Examining Authority.
- 4.9. Part 3 of EN-1 identifies the need that exists for nationally significant energy infrastructure. With regards to decision making, paragraph 3.1.1. of EN-1 states how *“the UK needs all the types of energy infrastructure covered in this NPS in order to achieve energy security at the same time as dramatically reducing greenhouse gas emissions”*.
- 4.10. Paragraph 3.1.2 states: *“It is for industry to propose new energy infrastructure projects within the strategic framework set by Government. The Government does not consider it appropriate for planning policy to set targets for or limits on different technologies”*.
- 4.11. Paragraph 3.3.11 notes that renewable energy sources, such as solar, are intermittent and, as a result, back-up sources are required at times when the availability of intermittent renewable sources is low. Paragraph 3.3.12 goes on to identify how electrical storage technologies can be used to compensate for intermittence.
- 4.12. Paragraph 4.1.3 of the NPS EN-1 states that in considering any proposed development, and in particular when weighing its adverse impacts against its benefits, the Examining Authority should take into account:
- > Its potential benefits including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and
 - > Its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.
- 4.13. Section 4.2 of the NPS EN-1 is related to the requirement for assessment of likely significant environmental effects and reporting within an Environmental Statement for projects that are subject to the European Environmental Impact Assessment Directive (85/337/EEC).
- 4.14. Paragraph 4.2.2 of the NPS states that: *“To consider the potential effects, including benefits, of a proposal for a project, the IPC [now PINS] will find it helpful if the applicant sets out information on the likely significant social and economic effects of the development, and shows how any likely significant negative effects would be avoided or mitigated. This information could include matters such as employment, equality, community cohesion and well-being.”*
- 4.15. Paragraph 4.3.2 continues: *“For the purposes of this NPS and the technology-specific NPSs the ES should cover the environmental, social and economic effects arising from pre-construction, construction, operation and decommissioning of the project.”*

⁴ Department of Energy and Climate Change (2011) Overarching National Policy Statement for Energy (EN-1)

- 4.16. Paragraph 4.2.4 states that when considering a proposal, the Examining Authority should: *“Satisfy itself that likely significant effects including any significant residual effects taking account of any proposed mitigation measures or any adverse effects of those measures, have been adequately assessed. In doing so the IPC should also examine whether the assessment distinguishes between the project stages and identifies any mitigation measures at those stages. The IPC [now PINS] should request further information where necessary to ensure compliance with the EIA Directive.”*
- 4.17. Where relevant, the EIA process will take into account the requirements of the relevant NPSs.

Draft Overarching National Policy Statement for Energy (EN-1)⁵

- 4.18. A review of the energy NPSs was announced in the 2020 Energy white paper: Powering our net zero future; as part of this review an updated Draft EN1 was consulted on, with the most recent draft published in March 2023. Applicable to the Proposed Development Paragraph 3.3.20 of the Draft EN1 states *“a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar”*.
- 4.19. Paragraph 3.2.24 states that *“Applications for...solar above 50MW in England, or 350MW for either in Wales, will continue to be defined as NSIPs, requiring consent from the Secretary of State (see EN-3)”*
- 4.20. When weighing a project’s impacts against its benefits, the Secretary of State should take into account of *“environmental, social and economic benefits and adverse impacts, at national, regional and local levels. These may be identified in this NPS, the relevant technology specific NPS, in the application or elsewhere (including in local impact reports, marine plans, and other material considerations.”*
- 4.21. Paragraph 4.2.10 states that *“The applicant must provide information proportionate to the scale of the project, ensuring the information is sufficient to meet the requirements of the EIA Regulations.” At paragraph 4.2.12 the Draft EN1 states “Where some details are still to be finalised, the ES should, to the best of the applicant’s knowledge, assess the likely worst-case environmental, social and economic effects of the proposed development to ensure that the impacts of the project as it may be constructed have been properly assessed.”*

National Policy Statement for Renewable Energy Infrastructure (EN-3)⁶

- 4.22. The NPS for Renewable Energy Infrastructure (EN-3), published by the DECC in July 2011, taken together with the Overarching NPS for Energy (EN-1), provides the primary basis for decisions by the Examining Authority on applications it receives for nationally significant renewable energy infrastructure.

⁵ Department for Energy Security & Net Zero (2023) Draft Overarching National Policy Statement for Energy (EN-1)

⁶ Department of Energy and Climate Change (2011) National Policy Statement for Renewable Energy Infrastructure (EN-3)

- 4.23. The importance of generation of electricity from renewable sources is stated at Paragraph 1.1.1 of NPS EN-3: *“Electricity generation from renewable sources of energy is an important element in the Government’s transition to a low-carbon economy. There are ambitious renewable energy targets in place and a significant increase in generation from large-scale renewable energy infrastructure is necessary”*.
- 4.24. At the time of publication of NPS EN-3, utility scale solar development was not feasible. Therefore, whilst providing an assessment and technology specific information on certain renewable energy technologies, NPS EN-3 does not include solar PV development, and only covers projects for biomass/waste and offshore and onshore wind.

Draft National Policy Statement on Renewable Energy Infrastructure (EN-3)⁷

- 4.25. As part of the NPS review a Draft EN3 was consulted on, with the most recent draft published in March 2023. Section 3.10 of Draft EN3 sets out assessment and technology specific information relating to solar photovoltaic generation. Paragraph 3.10.1 confirms *“the government has committed to sustained growth in solar capacity to ensure that we are on a pathway that allows us to meet net zero emissions. As such solar is a key part of the government’s strategy for low-cost decarbonisation of the energy sector”*.
- 4.26. In terms of site layout, design and appearance Draft EN3 states: *“..applicants will consider several factors when considering the design and layout of sites, including, proximity to available grid capacity to accommodate the scale of generation, orientation, topography, previous land – use and ability to mitigate environmental impacts and flood risk.”*
- 4.27. Draft EN3 sets out information that should be provided on relevant impacts, including but not limited to biodiversity and ecological conservation; landscape, visual and residential amenity; glint and glare; cultural heritage; construction including traffic and transport noise and vibration.

National Policy Statement for Electricity Networks Infrastructure (EN- 5)⁸

- 4.28. The NPS for Electricity Networks Infrastructure (EN-5) was published by the DECC in July 2011 and forms part of the suite of energy NPSs and is to be read in conjunction with the Overarching NPS for Energy (EN-1).

⁷ Department for Energy Security & Net Zero (2023) Draft Policy Statement for Renewable Energy Infrastructure (EN-3)

⁸ Department of Energy and Climate Change (2011) National Policy Statement for Electricity Networks Infrastructure (EN-5)

- 4.29. NPS EN-5 is relevant to the Proposed Development as the policy recognises electricity networks as “*transmission systems (the long distance transfer of electricity through 400kV and 275kV lines), and distribution systems (lower voltage lines from 132kV to 230V from transmission substations to the end-user) which can either be carried on towers/poles or undergrounded*” and “*associated infrastructure, e.g. substations (the essential link between generation, transmission, and the distribution systems that also allows circuits to be switched or voltage transformed to a useable level for the consumer) and converter stations to convert DC power to AC power and vice versa.*”
- 4.30. NPS EN-5 sets out further technology-specific considerations, in addition to those impacts covered in NPS EN-1, for: Biodiversity and Geological Conservation; Landscape and Visual; and Noise and Vibration.
- 4.31. Furthermore, NPS EN-5 sets out technology-specific considerations for the impact of electromagnetic frequencies (EMFs).

Draft National Policy Statement for Electricity Networks Infrastructure (EN- 5)⁹

- 4.32. As part of the NPS review, the latest draft of NPS EN-5 was published in March 2023. The policy statement recognises that new electricity networks required for electricity generation, storage and interconnection infrastructure are vital to achieving the nation’s transition to net zero.
- 4.33. With regards to cable routing Draft EN5 states “*The applicant should consider and address routing and avoidance/minimisation of environmental impacts both onshore and offshore at an early stage in the development process.*”

National Planning Policy

- 4.34. The National Planning Policy Framework (2023) (NPPF) sets out the government’s planning policies for England and how these are expected to be applied. The NPPF does not contain specific policies for NSIPs as these are determined in accordance with the decision making framework in the Planning Act 2008 and any relevant NPSs, but it still can be an important and relevant matter for the purposes of the Secretary of State’s decision making when determining the DCO application.
- 4.35. The NPPF also provides relevant context for individual assessment topics.
- 4.36. The paragraphs of particular relevance to the application and are as follows:
- > Paragraph 8: “*Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives): ... c): an environmental objective... protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy*”

⁹ Department for Energy Security & Net Zero (2023) Draft Policy Statement for Electricity Networks Infrastructure (EN-5)

- > Paragraph 155: *“To help increase the use and supply of renewable and low carbon energy and heat, plans should: ... b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development”*
- > Paragraph 158: *“When determining planning applications for renewable and low carbon development, local planning authorities should:*
 - a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions;*
 - b) approve the application if its impacts are (or can be made) acceptable.”*

Local Planning Policy

- 4.37. The relevant Local Development Plans for the area do not carry the same weight under the Planning Act 2008 in respect of decision making on NSIPs, as they do with determining planning applications under the Town Country Planning Act 1990. The NPSs are the primary consideration for NSIP applications. Nevertheless, the Development Plan is still a matter which can be considered important and relevant in deciding an application for a DCO, although in the event of any conflict, the NPS prevails.
- 4.38. The relevant Local Planning Policies of the adopted development plans for each of the ‘host’ planning authorities will be considered as part of the assessment.

Newark and Sherwood District Council, Local Development Framework, Allocations and Development Management, Development Plan Document (2013)¹⁰

- 4.39. The Allocations and Development Management Development Plan Document (2013), forms part of the district’s Local Development Framework. This sets out housing, employment and retail needs in Newark and Sherwood to 2026 and beyond.
- 4.40. Relevant to the Proposed Development, Policy DM4, Renewable and Low Carbon Energy Generation states:

In order to achieve the commitment to carbon reduction set out in Core Policy 10, planning permission will be granted for renewable and low carbon energy generation development, as both stand alone projects and part of other development, its associated infrastructure and the retro-fitting of existing development, where its benefits are not outweighed by detrimental impact from the operation and maintenance of the development and through the installation process upon:

- 1. The landscape character or urban form of the district or the purposes of including land within the Green Belt arising from the individual or cumulative impact of proposals;*
- 2. Southwell Views as defined in Policy So/PV or the setting of the Thurgarton Hundred Workhouse, as defined in Policy So/Wh;*

¹⁰ Newark and Sherwood District Council (2013) Local Development Framework, Allocations and Development Management, Development Plan Document

3. *Heritage Assets and or their settings;*
4. *Amenity, including noise pollution, shadow flicker and electro-magnetic interference;*
5. *Highway safety;*
6. *The ecology of the local or wider area; or*
7. *Aviation interests of local or national importance.*

Newark and Sherwood District Council, Amended Core Strategy Development Plan (2019)¹¹

- 4.41. Part of the Local Development Framework, the Amended Core Strategy Development Plan (2019) sets out the issues that the Council and its partners will address over the next twenty years including the objectives and a number of policies to deliver them.
- 4.42. Core Policy 10 aims to “Promote energy generation from renewable and low-carbon sources, including community-led schemes, through supporting new development where it is able to demonstrate that its adverse impacts have been satisfactorily addressed. Policy DM4 ‘Renewable and Low Carbon Energy Generation’ provides the framework against which the appropriateness of proposals will be assessed”

Central Lincolnshire Local Plan (2023)¹²

- 4.43. The Local Plan for Central Lincolnshire (2023) contains planning policies and allocations for the growth and regeneration of Central Lincolnshire over the next 20 years, this includes West Lindsey District Council (as well as the Local Authority areas of North Kesteven and the City of Lincoln).
- 4.44. Policy S14: Renewable Energy states:
“Proposals for solar thermal or photovoltaics panels and associated infrastructure to be installed on existing property will be under a presumption in favour of permission unless there is clear and demonstrable significant harm arising.
Proposals for ground based photovoltaics and associated infrastructure, including commercial large scale proposals, will be under a presumption in favour unless:
 - > *there is clear and demonstrable significant harm arising; or*
 - > *the proposal is (following a site specific soil assessment) to take place on Best and Most Versatile (BMV) agricultural land and does not meet the requirements of Policy S67; or*
 - > *the land is allocated for another purpose in this Local Plan or other statutory based document (such as a nature recovery strategy or a Local Transport Plan), and the proposal is not compatible with such other allocation.*

¹¹ Newark and Sherwood District Council (2019) Amended Core Strategy Development Plan

¹² Central Lincolnshire Local Plan (2023)

Proposals for ground based photovoltaics should be accompanied by evidence demonstrating how opportunities for delivering biodiversity net gain will be maximised in the scheme taking account of soil, natural features, existing habitats, and planting proposals accompanying the scheme to create new habitats linking into the nature recovery strategy.”

4.45. Policy S67 then states:

“Proposals should protect the best and most versatile agricultural land so as to protect opportunities for food production and the continuance of the agricultural economy. With the exception of allocated sites, significant development resulting in the loss of the best and most versatile agricultural land will only be supported if:

a) The need for the proposed development has been clearly established and there is insufficient lower grade land available at that settlement (unless development of such lower grade land would be inconsistent with other sustainability considerations); and

b) The benefits and/or sustainability considerations outweigh the need to protect such land, when taking into account the economic and other benefits of the best and most versatile agricultural land; and

c) The impacts of the proposal upon ongoing agricultural operations have been minimised through the use of appropriate design solutions; and

d) Where feasible, once any development which is supported has ceased its useful life the land will be restored to its former use (this condition will be secured by planning condition where appropriate).

Where proposals are for sites of 1 hectare or larger, which would result in the loss of best and most versatile agricultural land, an agricultural land classification report should be submitted, setting out the justification for such a loss and how criterion b has been met.”

Bassetlaw District Council (BDC) Local Development Framework, Publication Core Strategy and Development Management Policies (2010)¹³

4.46. The Bassetlaw District Council Local Development Framework, Publication Core Strategy and Development Management Policies (2010) sets out a vision for change in Bassetlaw to 2026, along with the place-specific policy approaches to be taken in order to achieve this vision. Policy DM10 Renewable and Low Carbon Energy states:

“The Council will be supportive of proposals that seek to utilise renewable and low carbon energy to minimise CO₂ emissions. Such proposals will be expected to demonstrate regard to the Council’s Energy Opportunities Diagram and Renewable and Low Carbon Energy Study (or subsequent replacement) when identifying options for achieving CO₂ emission reductions. Proposals for renewable and low carbon energy infrastructure will need to demonstrate that they:

- > are compatible with policies to safeguard the built and natural environment, including heritage assets and their setting;*

¹³ Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies

- > will not lead to the loss of or damage to high-grade agricultural land;
- > are compatible with tourism and recreational facilities;
- > will not result in unacceptable impacts in terms of visual appearance; landscape character; noise; shadow-flicker; watercourse engineering and hydrological impacts; pollution; traffic generation; or loss of features of recognised importance for biodiversity;
- > will not result in an unacceptable cumulative impact in relation to the factors above.

Large-scale renewable and low carbon energy proposals must provide full details of arrangements for decommissioning and reinstatement of the site if/when it ceases to operate.”

Draft Bassetlaw Local Plan 2020-2038: Main Modifications Version, August 2023¹⁴

4.47. The Bassetlaw Local Plan sets out the spatial planning and policy framework for Bassetlaw District up to 2038. The Local Plan is at an advanced stage following several rounds of consultation and was submitted to the Secretary of State for Independent Examination in July 2022. The current version of the draft Local Plan is the Main Modifications as published in August 2023. Paragraph 10.2.5 of the draft Local Plan states:

“The green energy sector may be an appropriate part of the long term regeneration plans for the three power station sites at Marnham, Cottam (see Policy ST6) and West Burton because of each site’s ability to provide direct connectivity to the national electricity grid via existing energy switching and/or transmission infrastructure. In these locations, proposals that are consistent with the new strategic policy where relevant and Policy ST51 and the wider development plan will be supported, however, this should not preclude the consideration of other uses, where consistent with other relevant policies in this Plan.”

4.48. Paragraph 10.2.7 then states:

“Large scale ground mounted proposals for solar farms are capable of contributing substantially to total solar power generation nationally, and the District is currently experiencing an increase in interest for such schemes. This has the potential for adverse impacts, so in accordance with the UK Solar Photovoltaics Strategy, the preference is for future expansion of solar photovoltaics to be on commercial and industrial roof-space. Nevertheless, large scale ground mounted proposals may be acceptable subject to meeting the criteria in Policy ST51.”

4.49. Policy SR51 states:

Policy ST51: Renewable Energy Generation supports development that generates, shares, transmits and/or stores zero carbon and/or low carbon renewable energy including community energy schemes, subject to the satisfactory resolution of all relevant site specific and cumulative impacts upon:

¹⁴ Bassetlaw District Council (2023) Draft Bassetlaw Local Plan 2020-2038: Main Modifications Version, August 2023

- a) location, setting and position in the wider landscape, resulting from its siting and scale;*
- b) natural and heritage assets and their settings;*
- c) air and water quality;*
- d) hydrology and hydrogeology;*
- e) the best and most versatile agricultural land;*
- f) existing highway capacity and highway safety;*
- g) noise, light, glare, smell, dust, emissions or flicker;*
- h) aviation and radar;*
- i) recreation and amenity.”*

5. Approach to EIA

The EIA Process

- 5.1. The ES will be prepared in accordance with the EIA Regulations; relevant planning and planning policy and guidance; PINS Advice Note Seven; and current best-practice EIA guidelines. Each technical topic chapter of the ES will be assessed in line with specific technical aspect methodologies and best-practice guidelines.

Rochdale Envelope

- 5.2. PINS Advice Note Nine on the 'Rochdale Envelope' (July 2018) provides guidance for handling applications for development consent under the Planning Act 2008. It recognises that during the early stages of scheme design, certain aspects may remain subject to change. A DCO application should therefore ensure that it contains a level of detail that enables a proper assessment of the environmental effects to be made. The extent of flexibility needed depends on the design progress when the detailed application is made. To accommodate this, technical assessments define an 'envelope' within which the project will unfold, featuring maximum and minimum parameters, so that an assessment of the reasonable worst case scenario can be undertaken. The parameters should be as realistic as possible to determine likely significant effects as accurately as is possible.
- 5.3. As per the reasoning above, it is the Applicant's intention to seek flexibility in the design and layout of the Proposed Development, by considering reasonable 'worst case' scenarios to determine likely significant effects.

Constraints Analysis and Design Process

- 5.4. As part of the EIA and design process all technical aspects will use the relevant environmental baseline conditions of a site and its surrounds in order to identify any environmental constraints and opportunities relevant to their aspect. This has and will continue to allow design principles to be created that will be used to support the development of the scheme so that important environmental considerations are taken into account during the design evolution. The inputs from this process will be included within the Preliminary Environmental Information Report (PEIR) and included as an Alternatives Chapter of the ES as required by Schedule 4(2) of the EIA Regulations.

Consultation

- 5.5. Sections 42, 47 and 48 of the Planning Act 2008 and Regulation 13 of the EIA Regulations require that certain statutory bodies, stakeholder groups and relevant land interests must be consulted as part of the pre-application process. As part of this process a PEIR will be produced and consulted upon.
- 5.6. Consultation alongside the EIA process is critical to the development of a comprehensive and proportionate ES. The views of statutory and non-statutory consultees are important to ensure that the EIA from the outset focuses on the environmental studies and to identify specific issues where there are likely significant environmental effects, and where further investigation is required.

- 5.7. The consultation, as an ongoing process, enables mitigation measures to be incorporated into the Proposed Development to avoid, reduce and offset adverse environmental effects and to optimise environmental benefits.
- 5.8. Early and ongoing engagement with consultees will be important to influence the design process of the Proposed Development by seeking an appropriate level of feedback from consultees, to ensure that comments are considered as part of the project design.

Stage One Non-Statutory Consultation

- 5.9. Stage One non-statutory consultation commenced on 27th September 2023 and closed on the 8th November 2023. As part of the consultation, public exhibitions were held in Newton on Trent (5th October), South Clifton (7th October), Dunham-on-Trent (10th October) and Normanton on Trent (12th October), and one online community webinar on the 11th October.
- 5.10. The aim of the non-statutory consultation was to introduce the Proposed Development to the local communities and statutory bodies; gather feedback on key issues and options; invite members of the public to ask questions and provide feedback on the early concept design; to find out local needs; and to engage with statutory bodies during the early stage of development proposals.
- 5.11. All responses received during consultation are being carefully considered and where appropriate, are being taken into account in the evolving design of the Proposed Development. The consultation responses will be recorded in a Consultation Report which will be submitted as part of the DCO application.

Statutory Consultation

- 5.12. In accordance with Sections 42 of the Planning Act 2008 and Regulation 13 of the EIA Regulations, statutory consultation will be undertaken and is expected to be held in Q2/Q3 2024. The aim of statutory consultation is to consult with statutory consultees on the proposed DCO application, including the current proposals, demonstrating how issues identified during earlier consultation have been accounted for and considered within the Proposed Development design; take formal feedback to ensure that regard has been had to the views of statutory consultees; and finalise and illustrate the position on key issues.

With specific regard to environmental effects, there is a requirement under the EIA Regulations to publicise and consult on Preliminary Environmental Information (PEI) for the scheme. The Applicant intends to consult on the PEI as part of its statutory consultation under the DCO process and will produce a PEIR. Although the level and detail of PEI is not prescribed it must include information that *'is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)'* (Regulation 12(2)(b) of the EIA Regulations).

Engagement to Date

- 5.13. A number of interactions with stakeholders have already taken place mostly to provide an introduction to the Proposed Development, obtain baseline environmental data and discuss preliminary baseline survey methodologies with them. Statutory bodies engaged include:

- > Lincolnshire County Council (LCC);
- > Nottinghamshire County Council (NCC);
- > Newark and Sherwood District Council (NSDC);
- > West Lindsey District Council (WLDC);
- > Bassetlaw District Council (BDC);
- > Planning Inspectorate (PINS); and
- > Environment Agency.

5.14. Further to the above, as part of the EIA process, consultation and engagement will be undertaken with a range of statutory and non-statutory consultees. It is anticipated consultees will include, but not be limited to:

- > South Clifton Parish Council;
- > North Clifton Parish Council;
- > Normanton on Trent with Marnham Parish Council;
- > Denham with Ragnall, Fedborough and Darlton Parish Council;
- > Newton on Trent Parish Council;
- > Laneham Parish Council;
- > Wigsley Parish Council;
- > The Crown Estate Commissioners;
- > Historic England;
- > Natural England;
- > National Highways;
- > Lincolnshire Wildlife Trust;
- > Nottinghamshire Wildlife Trust;
- > Trent River Trust;
- > Lincolnshire Rivers Trust;
- > Anglian Water;
- > Sustrans;
- > Lincolnshire Fire and Rescue; and
- > Nottinghamshire Fire and Rescue.

5.15. Details of specific technical engagement undertaken to date for each of the environmental aspects is provided in Chapters 6 to 17 of this Scoping Report.

Defining the Study Area

- 5.16. Study areas have been defined individually for each environmental aspect, taking into account the geographic scope of the potential impacts relevant to that aspect and the information required to assess those impacts. The proposed study areas are described within Chapters 6 to 17 of this EIA Scoping Report.

Baseline and Future Baseline

- 5.17. Appropriate and accurate baseline conditions (i.e. existing conditions on the Site and within its surrounds to an appropriately considered distance in the absence of the proposed development) need to be established in order to assess the likely significant environmental effects of the Proposed Development and to identify the most appropriate environmental measures to be employed to minimise any likely significant adverse effects.
- 5.18. Baseline information has been and will be collected and described by each technical aspect of the PEIR and ES. This will include existing and available information within the public domain, baseline surveys undertaken as part of the EIA process and additional information provided as part of the consultation process and form engagement. For the majority of the environmental aspects relevant baseline conditions will relate to the existing environmental conditions at the Site and in the local area.
- 5.19. As per the requirements of Schedule 4(3) of the EIA Regulations, consideration will also be given to future baseline conditions in particular how it will likely evolve in the future (i.e. in the opening year) but without the Proposed Development in place. The likely evolution of the baseline conditions will be described within each technical aspect chapter of the ES, with justification given as to why any change is assumed, and have also been described, where currently known, in the aspect specific Chapters (6-17) of this Scoping Report.

EIA Assessment Scenarios

- 5.20. An indicative construction programme for the Proposed Development building on the programme in Chapter 3, will be presented in the ES. This will include all stages of the construction phases including site preparation and ground works, construction and landscaping. To assess the likely significant environmental effects of the Proposed Development, the ES will document an assessment of the peak year of construction as this will provide a reasonable worst-case assessment.
- 5.21. As noted above the EIA will assess the maximum development parameters (or the parameters that represent the reasonable worst case for likely significant environmental effects should that be different). The effects of the completed Proposed Development will be assessed and documented within the ES for the first full year of operation and the year considered to be when maximum environmental effects occur. Each environmental aspect chapter will describe the worst case year as appropriate.

- 5.22. Within the ES there will also be an assessment made of the decommissioning phase of the Proposed Development. As above, for the purposes of the EIA the decommissioning assessment will be based on an assumption that the Proposed Development will be operational for 45-years. The assessment does not assume that the operational phase will be limited to 45 years as the solar infrastructure may continue to be operating successfully and safely beyond this period. However, this timeframe is a realistic timeframe based on current practices and will be used as an approximate to assess the likely significant effects from the decommissioning phase. Further information on the decommissioning phase, is presented in each of the technical aspects detailed in Chapter 6 to 17.
- 5.23. It is noted that at the time that decommissioning would take place, the regulatory framework, good industry practices and the future baseline could have altered. Consequently, as detailed in Chapter 3, the Applicant will implement a Decommissioning and Environmental Management Plan (DEMP), which will be secured via a DCO requirement that will set out the measures in place to ensure, based on current understanding, there will be no likely significant effects.

Prediction of Likely Effects and Determining Significance

- 5.24. Determining the potential for significant effects needs, generally, an aspect specific approach and these methodologies are detailed within the aspect specific chapters (6-17) themselves. However, there are certain common elements that occur in defining the appropriate scope for the detailed assessment.
- 5.25. Understanding the policy and legal position with regard to a specific environmental aspect is fundamental to determining the likelihood of significant effects occurring. As such the assessment of effects for every aspect will be informed by a detailed review of existing policy including that at national, regional and local level. In addition, relevant legal requirements will be identified.
- 5.26. Knowledge of the baseline environment, specific to the technical aspect being considered is also required. At this scoping stage the level of baseline collection is appropriate to allow the gaining of an understanding of whether the Proposed Development has the potential to cause significant effects. In many cases this means that there has been a reliance on desk study data and as such, in the future, and to inform the detailed assessment as will be documented within the ES, further baseline data will be collected. Arising from an analysis of the baseline data will come the identification of sensitive receptors that could be affected by the Proposed Development. At this Scoping stage sensitive receptors have been identified and are noted within the aspect specific Chapter (6-17) albeit with the collection of more detailed baseline information these may be subject to some change.
- 5.27. Establishing the potential for a significant effect to occur, and therefore which effects should be subject to detailed assessment, has been informed by aspect specific guidance often validated by a relevant professional body. The same will be used to inform the detailed assessment as will be documented within the ES. Generally, guidance, in reaching a conclusion on whether an effect could be significant, requires consideration of the sensitivity of a receptor to change, and importantly consideration of the predicted magnitude of change.

- 5.28. Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur.
- 5.29. Summary of effect tables that summarise the likely significant effects associated with each of the environmental aspects will be provided in the ES at the end of each aspect assessment chapter. These tables will detail sensitive receptors, additional mitigation measures and residual effects. A distinction will be made between direct, indirect, secondary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects. Cumulative effects will be considered as a single coordinated assessment.

Cumulative Effects

- 5.30. Schedule 4(5)(e) of the EIA Regulations states that the ES should include “*a description of the likely significant effects of the development on the environment resulting from... the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*”.
- 5.31. Following the above screening criteria, the potential cumulative effects will follow PINS Advice Note Seventeen on cumulative effects assessment relevant to nationally significant infrastructure projects. The staged approach detailed in Advice Note Seventeen considers the level of certainty of surrounding projects and the need to assess development plans and future development consents; acknowledging that there will be limited information available on the relevant proposals to base such assessment on.
- 5.32. Details of the cumulative schemes to be considered within the detailed assessment will be identified based on information available on the local authorities planning registers and on PINS website and discussed during the consultation stages. The current criteria for inclusion in the study are as follows:
- > other projects within the local vicinity (at this stage assumed to be within 5km of the Proposed Development):
 - > that have planning permission (or development consent) but are not yet built; or
 - > schemes where a planning application (or DCO application) has been submitted but a decision not yet made; or
 - > major projects likely to occur due to existing policy.
- 5.33. It should be recognised that many of the projects that will fall within the categories under the first two bullets above maybe so small that cumulative effects would be highly unlikely. An example of this would be a house extension or similar. Using professional judgement, projects will therefore be screened for their potential to act in a cumulative way with the Proposed Development with only those where such potential exists considered further. This screening exercise will be detailed within the ES and will also be consulted upon as part of pre-application discussions with the host authorities.

- 5.34. Each technical aspect of the ES will consider the potential for cumulative effects associated with the schemes identified (for example cumulative assessment of traffic effects from nearby projects that are of a significant scale (and where traffic flows are publicly available)). A Cumulative Assessment will be presented as a separate chapter of the PEIR and ES.
- 5.35. Regulation 4(5) states that the EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and the landscape. Regulation 5(2)(e) refers to the need to assess ‘*the interaction between those factors*’. The following types of cumulative effects will be considered in accordance with the EIA Regulations and best practice guidance:
- > Combined effects occur when a similar type of effect, for example noise, occurs albeit from differing sources e.g. from both road traffic and aircraft noise. Within the ES, combined effects will be dealt with in the relevant technical aspect Chapter.
 - > Interactive effects occur when a number of separate effects, for example noise and air quality, together interact to cause an effect to a particular receptor, for example a protected species. Within the ES that will be produced interactive effects will be dealt with either in the relevant technical aspect Chapter (such as the example for protected species would be included in the Biodiversity Chapter), or where they have the potential to affect human health, then within the Health Chapter.

Transboundary Effects

- 5.36. Regulation 32 of the EIA Regulations require the consideration of any likely significant effects in the environment of another European Economic Area (EEA) member state. Guidance of the consideration of transboundary effects is provided in the PINS’ Advice Note 12 ‘Transboundary Impacts and Process’, published in December 2020.
- 5.37. Due to the nature and location of Proposed Development, it is not anticipated that the Proposed Development has the potential to result in any likely significant effects on the environment of another European Economic Association (EEA) State. Therefore, a transboundary screening matrix has not been included within this EIA Scoping Report and transboundary effects are proposed to be scoped out of any future assessment.

Environmental Statement

- 5.38. In accordance with Schedule 4 (Regulation 18(3)) of the EIA Regulations and PINS Advice Note Seven, the EIA process will be documented in an ES which will describe the Proposed Development, give full details of the EIA methodology and any technical methodologies and data used in support of the assessment; detail any mitigation and enhancement measures that have been employed; present the assessment of likely significant environmental effects; and provide a schedule of proposed mitigation and monitoring arrangements.
- 5.39. The ES will present an assessment of the cumulative effects and impact interactions as described in each of the topic sections in Chapters 6 to 17.

Volume I: Main ES Text and Supporting Drawings

- 5.40. This Volume will comprise the main ES text and supporting drawings and will include the following:
- > A description of the methodology and approach to EIA;
 - > A detailed description of the Proposed Development, including details on of the construction and operational phases;
 - > A description of the evolution of the design process, including a review of the main layout options and reasonable alternatives along with an indication of the main reasons for selecting the chosen option.
 - > A detailed assessment methodology for each environmental topic scoped into the EIA;
 - > A description of the current baseline environment and an outline of the likely evolution thereof without implementation of the development for each environmental topic;
 - > A description of the embedded environmental measures proposed;
 - > An assessment of predicted environmental effects during the construction, operational and decommissioning phases;
 - > A description of the expected significant effects of the development on the environment; and
 - > An assessment of cumulative effects.

Volume II: Technical Appendices

- 5.41. Volume II will include all technical data required to support the assessment conclusions set out in Volume I.

Volume III: Non-Technical Summary

- 5.42. A Non-Technical Summary (NTS) will be prepared which will convey the key findings of the EIA in a clear and concise format (in non-technical language) to allow the public to understand the description of the Proposed Development, the significant effects likely to arise from the Proposed Development and the embedded environmental measures.

Content of the ES

- 5.43. The proposed content of Volume I of the ES is likely to be outlined as follows (or similar):
- > Introduction;
 - > Description of Site and Context;
 - > Site Selection and Alternatives;
 - > Description of Proposed Development;
 - > Consultation;
 - > Legislative and Planning Policy;

- > EIA Methodology including details of assumptions and/or limitations;
- > Environmental Aspect Assessments;
- > Cumulative Assessment; and
- > Summary of Effects and Embedded Measures including details of how mitigation will be secured.

5.44. Each of the technical assessments will be set out in the following format (or similar):

- > Introduction:
- > List of relevant legislation and planning policies;
- > Assessment methodology, including a summary of consultation undertaken, explanation of how responds to EIA Scoping Opinion, list of sources of information & guidance documents, details of the study area, assessment process/criteria and any assumption limitations;
- > Baseline description of the Site (current state of the environment (baseline) and an outline of the likely evolution thereof without the implementation of the Proposed Development (future baseline);
- > Proposed enhancement and monitoring measures
- > Assessment of potential effects;
- > Summary; and
- > List of references.

Environmental Aspects

5.45. Following a review of environmental surveys and preliminary appraisal work to date, it is proposed that the EIA need only to focus on the following environmental aspects where significant effects are likely to occur. This includes the following technical aspects, which are discussed in Chapters 6 to 17. Scoped out aspects are dealt with in Chapter 18:

- > Biodiversity;
- > Hydrology and Hydrogeology;
- > Land and Soils;
- > Buried Heritage;
- > Cultural Heritage;
- > Landscape and Visual;
- > Transport and Access;
- > Air Quality;
- > Carbon and Climate Change;

- > Noise and Vibration
- > Human Health; and
- > Socio-Economics.

6. Biodiversity

Introduction

- 6.1. This Chapter of the Scoping Report presents the scope of the environmental assessment for Biodiversity. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those ecological matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.

Review of Policy, Legislation and Relevant Guidance

- 6.2. Legislation, planning policy and guidance relating to biodiversity, and relevant to the Proposed Development comprises:

Legislation

- > The Environment Act (2021)
- > Conservation of Habitats and Species Regulations (2017) (as amended)
- > Natural Environment and Rural Communities Act (2006) (as amended)
- > Countryside and Rights of Way Act (2000) (as amended)
- > Hedgerows Regulations (1997)
- > Protection of Badgers Act (1992) (as amended)
- > Wildlife & Countryside Act (1981) (as amended)

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – specifically paragraphs 5.3.3, 5.3.4, 5.3.11, 5.3.13, 5.3.14 and 5.3.18.
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) - specifically paragraphs 4.5.2, 4.5.5, 5.4.19, 5.4.21, 5.4.36, 5.4.54.
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2023) - specifically paragraphs 3.10.66 to 3.10.74
- > National Planning Policy Framework (2023) - specifically paragraphs 179 and 180.

Local Planning Policy

- > Newark and Sherwood District Council (2013), Local Development Framework, Allocations and Development Management, Development Plan Document - – specifically Policy DM7 and DM8.
- > Newark and Sherwood District Council (2019), Amended Core Strategy Development Plan – specifically Core Policy 12.

- > Central Lincolnshire Local Plan (2023) – specifically Policies S59, S60 and S61.
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies- specifically Policy DM9.
- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023 -specifically Policy ST39, ST40, ST41.

National Guidance

- > Planning Practice Guidance (2023) – Guidance Natural Environment (2019)
- > Chartered Institute Ecology and Environmental Management (2018, updated 2022) Guidelines for Ecological Impact Assessment in the UK and Ireland
- > British Standards Institution (2013) Biodiversity — Code of Practice for Planning and Development (BS 42020:2013)

Local Guidance

- > Lincolnshire Biodiversity Partnership (2011) Lincolnshire Biodiversity Action Plan 2011 – 2020 (3rd Edition).
- > Nottinghamshire Biodiversity Action Group (date unknown) Local Biodiversity Action Plan.

Baseline Conditions

Approach to Collection of Baseline Data

- 6.3. Baseline data collection for the Site began in 2023 with a desk study and field survey programme. The desk study was undertaken to gather existing information on statutory and non-statutory sites (known as Local Wildlife Sites (LWS) in Lincolnshire and Nottinghamshire) designated for nature conservation reasons, Habitats and Species of Principal Importance and legally protected, controlled or otherwise notable species within the Site or in the area over which effects on ecological features of the development could be realised (referred to as the Zone of Influence or Zol).
- 6.4. Table 6-1 describes the ecological features for which desktop data was collected, the relevant Zol for each ecological feature and the sources of the information.

Table 6-1: Ecological Features, Zol and Information Sources

Ecological Feature	ZOI	Data Sources
European Sites ¹⁵	10	Magic.gov.uk ¹⁶

¹⁵ Following UK Government advice this includes Special Areas of Conservation (SAC), Special Protection Areas (SPA), proposed SAC, potential SPA, Ramsar sites and proposed Ramsar sites. SAC and SPA are protected via legislation, whilst the other sites are treated comparatively through policy. This is set out in: <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site#European-sites>

¹⁶ <https://magic.defra.gov.uk/magicmap.aspx>

		Natural England's designated sites website ¹⁷
Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR)	2 (or relevant SSSI Impact Risk Zones (IRZ) where relevant)	Magic.gov.uk Natural England's designated sites website
Local Nature Reserves	2	Magic.gov.uk Natural England's designated sites website
LWS	2	GLNP ¹⁸ and NBGRC ¹⁹
Habitats of Principal Importance / Ancient Woodland	1	Priority Habitat Inventory and Ancient Woodland Inventory - provided on Magic.gov.uk and Forestry Commission Map Browser
Legally protected and notable species - bats and aquatic mammals (otter and water vole)	2	GLNP and NGBRC European Protected Species licence returns - provided on Magic.gov.uk
Legally protected and notable species – all other species	2	GLNP and NGBRC European Protected Species licence returns - provided on Magic.gov.uk
Waterbodies (ponds, wet ditches, lakes) inside or within 500m of the Site	0.5	Satellite imagery and Ordnance Survey mapping
Veteran trees	0.5	Ancient Tree Inventory ²⁰

¹⁷ <https://designatedsites.naturalengland.org.uk/>

¹⁸ Greater Lincolnshire Nature Partnership

¹⁹ Nottinghamshire Biological and Geological Records Centre

²⁰ <https://ati.woodlandtrust.org.uk/>

European Sites ²¹	10	Magic.gov.uk ²² Natural England's designated sites website ²³
Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR)	2 (or relevant SSSI Impact Risk Zones (IRZ) where relevant)	Magic.gov.uk Natural England's designated sites website
Local Nature Reserves	2	Magic.gov.uk Natural England's designated sites website
LWS	2	GLNP ²⁴ and NBGRC ²⁵
Habitats of Principal Importance / Ancient Woodland	1	Priority Habitat Inventory and Ancient Woodland Inventory - provided on Magic.gov.uk and Forestry Commission Map Browser
Legally protected and notable species - bats and aquatic mammals (otter and water vole)	2	GLNP and NGBRC European Protected Species licence returns - provided on Magic.gov.uk
Legally protected and notable species – all other species	2	GLNP and NGBRC European Protected Species licence returns - provided on Magic.gov.uk

²¹ Following UK Government advice this includes Special Areas of Conservation (SAC), Special Protection Areas (SPA), proposed SAC, potential SPA, Ramsar sites and proposed Ramsar sites. SAC and SPA are protected via legislation, whilst the other sites are treated comparatively through policy. See <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site#European-sites>

²² <https://magic.defra.gov.uk/magicmap.aspx>

²³ <https://designatedsites.naturalengland.org.uk/>

²⁴ Greater Lincolnshire Nature Partnership

²⁵ Nottinghamshire Biological and Geological Records Centre

Waterbodies (ponds, wet ditches, lakes) inside or within 500m of the Site	0.5	Satellite imagery and Ordnance Survey mapping
Veteran trees	0.5	Ancient Tree Inventory ²⁶

6.5. A range of ecology surveys have been completed, are ongoing or are planned for the Site. These are:

Extended Phase 1 Habitat Survey and Habitat Condition Assessment

6.6. A Phase 1 habitat survey was completed in 2023. This survey is best practice for mapping habitats within and adjacent to a site using the method developed and published by the Joint Nature Conservation Committee (JNCC) (2010)²⁷. This method was adopted and extended to include identifying and mapping the potential the Site holds for legally protected or otherwise notable (in a legal and planning context i.e. designated sites or those recognised in national and local policy) species (including invasive non-native species (INNS)) based on the habitats found and the regional context. This information was used to scope and focus the species-specific elements of the field survey programme.

Breeding Birdy Survey

6.7. A territory mapping survey following an amended version of the British Trust for Ornithology’s (BTO) common bird census (CBC) methodology (Gilbert et al., 1998²⁸) was undertaken across six visits between late March and July 2023. Given the majority of the Site is used for intensive farming with limited habitats, this number of visits was considered sufficient. Whilst the level of survey effort is lower than the usual ten visits for the CBC methodology as outlined by the BTO, it is in line with that recommended for development projects by the Bird Survey & Assessment Steering Group²⁹.

6.8. The location of each bird detected (visually and / or aurally) was mapped using the standard two-letter BTO codes, and bird activity was recorded using standard behaviour codes (Marchant, 1983³⁰). The Site was sampled across five large areas, as opposed to being subject to full Site coverage. This was justified and considered representative on the basis of the expansive nature of the Site and its general homogeneity (i.e. dominated by large arable fields).

²⁶ <https://ati.woodlandtrust.org.uk/>

²⁷ Joint Nature Conservation Committee (2010) (Updated 2016), ‘Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit’.

²⁸ Gilbert, G., Gibbons, D.W. & Evans, J. (1998) Bird Monitoring Methods: A Manual of Techniques for Key UK Species. RSPB, Sandy, Bedfordshire

²⁹ Bird Survey & Assessment Steering Group (2023) Bird Survey Guidelines for assessing ecological impacts, v1.1.0. <https://birdsurveyguidelines.org> [accessed March 2023]

³⁰ Marchant, J.H. (1983) BTO Common Bird Census Instructions. BTO, Tring

Non-Breeding Bird Survey

- 6.9. Non-breeding bird surveys are ongoing and are primarily focused on the recording of any waders and wildfowl associated with the catchment of the River Trent that may use the arable fields for foraging, loafing or roosting. In addition, other target species of interest such as flocks of wintering thrushes or aggregations of gulls are also being recorded. The method follows the non-breeding walkover survey method as described by the Bird Survey & Assessment Steering Group³¹. It uses transects and the scanning (visual observations) of habitats to record the type, number and behaviour of birds seen using the survey area. These surveys began in September 2023 and will continue through to March 2024.

Bat Surveys

- 6.10. Bat surveys were devised following the Bat Conservation Trust's 'Bat Surveys for Professional Ecologists Good Practice Guidelines'³² and taking account of the fourth edition of this guidance³³. Prior to surveys beginning, a licensed bat surveyor determined that the Site comprised habitats that were generally of low suitability for bats. Following this, three transects were devised to sample bat activity across the area's within the Site most likely to be suitable for bats to provide an understanding of the bats present and general levels of activity. In addition, a full survey of every field across the Site was not considered necessary taking account of the Proposed Development early design principles that seek to retain, enhance and create habitats that are used most frequently by bats (e.g. linear features). The transects were subject to bat activity surveys in spring, summer and autumn. On each transect two static bat detectors were also installed and left in-situ to record for a period of five nights per season. In addition, a preliminary ground level roost assessment of trees and buildings within and close to the Site was undertaken.

Badger Survey

- 6.11. A badger survey was undertaken concurrently with the extended Phase 1 habitat survey. Surveyors, independently of habitat recording tasks, searched for signs of badger activity including setts, feeding signs, latrines and footprints in line with Scottish Badgers (2018) "Surveying for Badgers – Good Practice Guidelines, version 1", which is the latest comprehensive guidance for use. The exception to this was that the badger survey was undertaken across spring, summer and early autumn due to the large scale of the Site.

³¹ Bird Survey & Assessment Steering Group (2023), Bird Survey Guidelines for assessing ecological impacts, v.1.1.0

³² Bat Conservation Trust (2016), 'Bat Surveys for Professional Ecologists Good Practice Guidelines' third edition (Collins (ed.)).

³³ Bat Conservation Trust (2023), 'Bat Surveys for Professional Ecologists Good Practice Guidelines' fourth edition (Collins (ed.)).

Riparian Mammal Survey (Otter and Water Vole)

- 6.12. Riparian mammals were surveyed along the River Trent, on the wet ditches within the Site and around the waterbodies present. The surveys were undertaken concurrently with the extended Phase 1 habitat survey and surveyors searched for the signs of activity that are described for water vole in the “Water Vole Mitigation Handbook”³⁴ and for otter in “Monitoring the Otter” (Chanin, 2003)³⁵. Taking account of likely distance of travel away from the River Trent, areas up to 250m away from water, where suitable habitat exists, were also investigated for potential to support otter natal holts.

Great Crested Newts

- 6.13. Great crested newt surveys were undertaken between April and June 2023 at the ten waterbodies located on the Site. These waterbodies were subject to a Habitat Suitability Index (Oldham et al. 2000³⁶) and sampling for environmental DNA (eDNA). The eDNA samples were collected using testing kits that were sent to SureScreen Scientifics Ltd for laboratory analysis. The sampling procedure followed the method developed by Biggs et al. (2014)³⁷ and additional instructions provided with the sampling kits.

Common Reptiles

- 6.14. It is noted that common reptiles such as common lizard and slow worm may be present on the Site. However, no survey for this group has been proposed and specified as solar development can be undertaken sympathetically to reptiles to ensure legislative compliance and provide long term benefits in terms of better habitat quality given the current arable condition of the Site.

³⁴ Dean, M., Strachan, R., Gow, D. & Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Matthews and Paul Chanin. The Mammal Society, London.

³⁵ Chanin, P. (2003). Monitoring the Otter. *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10. Peterborough, English Nature.

³⁶ Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M., (2000). Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal*, 10(4), p.143-155

³⁷ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F, (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

Relevant Baseline Conditions

Extended Phase 1 Habitat Survey and Habitat Condition Assessment

- 6.15. There are no European sites within 10km of the Site boundary, with the closest SSSI being approximately 1.9km to the south. This designation is Spalford Warren SSSI, which is cited for being one of the best remaining examples of grassland heath in Nottinghamshire and the wider midlands region. The Site is overlapped by SSSI Impact Risk Zones (IRZ) for a number of SSSIs (all but one of these SSSIs being over 2km distant from the nearest boundary of the Site). However, the types of development highlighted by the IRZs for further consideration does not include solar installations. This suggests that the potential effects of the Proposed Development in this location is not considered to be a risk to nearby SSSIs.
- 6.16. There are twelve LWS immediately adjacent to the Site, although none within areas identified for potential development. These LWS have all been designated for their botanical interest³⁸ and are:
- > 1/94 – Darnsyke Marsh
 - > 2/444 – Skegby Road Triangle
 - > 2/486 – Dunham Dubs
 - > 2/653 – Road Wood
 - > 2/654 – West Wood
 - > 2/655 – Dunham Oxbow
 - > 2/656 – Fledborough Holme
 - > 5/133 – Fledborough to Harby Dismantled Railway
 - > 5/141 – Lodge Farm Grassland, Thorney
 - > 5/2170 – South Clifton Grassland
 - > 5/2171 – North Clifton Church
 - > 5/3437 – Marnham Railway Yard
- 6.17. The Site supports a range of habitats, although it is dominated by arable fields that make up the vast majority of the Site area. Most arable fields present are intensively managed with either little or no grass margins around the cropped edge. The fields are bounded by a range of intact and defunct hedgerows. In general, species richness is greater to the east of the River Trent. A number of the hedgerows support standard trees and some are associated with ditches (mainly dry). Where hedgerows are not present the fields are often bound by strips of semi-improved grassland and tall ruderal vegetation that are likely to be growing along the line of a previous hedgerow. In these locations there are occasionally fence lines.

³⁸ Note detailed descriptions of habitats within these LWS was not supplied by NGBRC

- 6.18. There are a relatively small number of woodland blocks across the area, both within and adjacent to the boundary of the Site. These woodlands are all considered to be of plantation origin with all but one comprising of a mix of broadleaved species. Towards the eastern extent of the Site lies the only coniferous plantation mapped.
- 6.19. The River Trent corridor supports a mixture of habitats with sheep grazed pasture common. Some of this area is shown on the Priority Habitats Inventory as coastal and floodplain grazing marsh. However, much of what is mapped has been converted to arable land with notable exceptions being the Fledborough Holme LWS. In places, scattered scrub is present along and close to the river bank. The topography suggests that earth works have been undertaken to provide flood defences along the majority of the river front in this area.
- 6.20. Other habitats on or adjacent to the Site include a small number of ponds, small lakes and agricultural reservoirs, as well as a network of wet ditches (mainly close to South Clifton). These ditches, the river and some of the ponds/lakes have the potential to support water vole and otter although no signs have been recorded.

Breeding Birdy Survey

- 6.21. Breeding bird surveys identified a range of common and widespread farmland species using the Site. However, there was also sightings of notable species including breeding turtle dove, Cetti's warbler, yellow wagtails, yellowhammer, quail and hobby, and foraging barn owl and peregrine (both observed mainly off Site). Skylark were also observed breeding within arable fields. Given the majority of the Site is used for intensive farming with limited habitats the density of breeding birds is generally considered likely to be low.

Non-Breeding Bird Survey

- 6.22. The non-breeding bird surveys are ongoing. The desk study suggests that waders such as golden plover, green sandpiper and Eurasian curlew, and wildfowl such as wigeon and teal are likely to be present (particularly in the vicinity of the River Trent and its margins). Early observations from the non-breeding bird surveys suggest cormorant are common in this area.

Bat Surveys

- 6.23. At the time of writing, the bat surveys are ongoing on the Site and are due to complete in October 2023 with reporting available in Q4 2023. The Site (and surrounds) include a number of trees and buildings that could be used by roosting bats. Although detailed analysis has not been completed, anecdotal observation suggests that bat activity levels are typical of expansive farmland habitats being relatively low. Species identified to date include common and soprano pipistrelle, noctule, myotis species and brown long-eared bat. As would be expected the majority of activity is focused around existing hedgerows, woodland edge and freshwater habitats. Early results of the bat surveys concur with the type of species identified from the desk study.

Badger Survey

- 6.24. Badger activity was common across the area with setts and foraging signs encountered regularly. Setts were sometime dug in flat ground around the edges of fields when there were no banks to burrow into. It is likely that due to the scale of the Site there is more than one clan present.

Riparian Mammal Survey (Otter and Water Vole)

- 6.25. The desk study returned a small number of otter records along the River Trent corridor (including from within the Site) and a larger number of water vole records (alongside sightings of American mink). Further survey for water vole and otter will be undertaken in 2024.

Great Crested Newts

No great crested newt were identified from the eDNA surveys. This accords with the desk study that has very few records of great crested newt (four records all north of the A57) present within the ZOI and none from within the Site boundary.

Environmental Measures

- 6.26. The Proposed Development provides opportunities for delivering Biodiversity Net Gain (measured using Natural England's Biodiversity Metric 4.0) at a scale in keeping with the Lawton Principles (i.e. more, bigger, better and joined up). The scale of the Proposed Development allows for the opportunity to link the existing LWS with other habitats that will be managed in a way to promote biodiversity, with existing corridors such as the River Trent (running north / south) and the national cycle route across the Fledborough Viaduct (running east / west) also providing the opportunity to join up with other habitats of value from further afield. The size of the Site provides an opportunity to provide biodiverse habitats across an area many times the size of a typical SSSI or LWS. Although the variety of habitats that could be created within the solar array would be limited, the opportunities that it could provide for invertebrates, breeding birds, herptiles and bats could be large enough to support notable changes in the size of local populations.
- 6.27. Within the Site boundary there will be three broad opportunities, these being:
- > Habitat enhancement and creation outside of areas of development (i.e. land set aside for biodiversity and other green infrastructure);
 - > Habitat enhancement and creation within areas of development; and
 - > Species-specific opportunities aimed at improving local provision.
- 6.28. The corridor of the River Trent provides an opportunity to seek to create habitats that are of greater biodiversity value than are currently present. Although there are no detailed designs currently present this could include the restoration of areas of coastal and floodplain grazing marsh (a national and local conservation priority), creation of scrapes and temporary pools for waders and wildfowl (providing habitat for notable breeding and non-breeding birds), creation of new hedgerows (a Habitat of Principal Importance (HPI)) and planting of new stands of woodland.

- 6.29. Within solar farms there is the opportunity to create a range of habitats dependent on the Site's location. Around tracksides and in the stand-off between infrastructure and field boundaries wild bird cover, conservation headlands and pollinator mixes sown in strips akin to current agri-environment schemes can be established. These provide opportunities for a range of species including invertebrates, birds and bats through the provision of greater food resources. In other locations species rich grassland can be created. The grassland can have a variety of different characters dependent on location (e.g. meadow style grasslands adjacent to solar arrays, with more shade and drought tolerant communities around the panels) and management type (e.g. different grazing and cutting regimes). The aim of the design will be to ensure various different grassland types to ensure a variety of opportunities are available to local flora and fauna.
- 6.30. There is also the opportunity to create species or species group specific features to aid local conservation efforts. This could include the creation and management of turtle dove (a national and local conservation priority) strips aimed at providing a good supply of small weed seeds, sandy banks for burrowing Hymenoptera (including some Species Protection Index (SPI)), hibernacula for herptiles (including some SPI) and enhancement of the existing ditch network for water vole (a national and local conservation priority).
- 6.31. Through the outputs of field survey work and technical engagement with nature conservation stakeholders the measures likely to be of most conservation benefit and in line with local priorities will be identified. The Ecological Impact Assessment that will be included as a Chapter within the ES, its appendices and related documents will provide information on how BNG and other biodiversity measures will be secured and an outline of the proposed management and monitoring measures.

Scope of Assessment

Important Receptors Identified

- 6.32. The ecological features³⁹ identified to date for consideration are based on the desk study, field survey results to date and professional judgement. Dependent on the outcome of further survey and technical engagement this list may need to be amended prior to detailed assessment work commencing. Ecological features have been identified where potential effects (both negative and positive) may occur through either the construction, operational or decommissioning phases of the Proposed Development.
- 6.33. A Study Area for the Ecological Impact Assessment (EclA) has been defined for the Site, plus the Zol that are identified in Table 6-1. Once details on the approach to construction and operation are available these Zol may be revised. The scope and extent will be discussed and agreed with Natural England during consultation.
- 6.34. The ecological features requiring detailed assessment are:
- > Local Wildlife Sites adjacent to the Site;
 - > Habitats of Principal Importance – in particular hedgerows, coastal and floodplain grazing marsh and river/riparian habitats;

³⁹ Ecological features is the term used within the CIEEM EclA guidance to refer to receptors.

- > Other habitats – including plantation woodland, ditches and ponds;
- > The breeding bird community – particularly species on the red and amber lists of Birds of Conservation Concern 5⁴⁰;
- > Non-breeding birds – dependent on type and distribution of species identified during the field survey;
- > Bats – consideration particularly associated with fragmentation and losses and gains in foraging opportunity;
- > Badgers – with particular emphasis on legislative compliance and welfare; and
- > Riparian mammals - consideration particularly associated with fragmentation and losses and gains in habitat quality.

Likely Significant Effects Scoped Out from Detailed Assessment

6.35. Table 6-2 presents the elements which have been scoped out from the detailed assessment, as it is considered no likely significant effects will occur.

Table 6-2: Likely Significant Effects Scoped out from the Biodiversity Detailed Assessment

Elements Scoped Out	Justification
Construction and Decommissioning Emissions (Traffic and Construction Plant)	Emissions from plant and delivery traffic during the construction and decommissioning phases can lead to habitat change through nutrient deposition, acidification and direct toxicity. However, they are proposed to be scoped out of the assessment. This is because there are no European sites within 200m of roads on which a detectable rise in traffic would be predicted during the construction phase. There are two SSSI within 200m of the A1133 (Spalford Warren SSSI and Besthorpe Warren SSSI), however these are south of the Site on a stretch of road that is unlikely to be a major construction traffic route given access from the A57 is proposed. Further, construction and decommissioning traffic can be discounted as the increase in traffic will be temporary and limited ensuring that the extent of the effect will be low, temporary and reversible. This justification equally applies to LWS present within the area.

⁴⁰ Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., MuCulloch, N., Noble, D.G. & Win, I. (2021) Birds of Conservation Concern 5. British Birds 114.

Electro-magnetic fields (EMF)

The effects of electro-magnetic fields (EMF) from buried cables can result in environmental changes in close proximity to cables through soil heating (altering habitat composition) and magnetic fields discouraging certain species from moving through the area. However, cabling for solar farms is no different to those already in position across the country (e.g. connections for on and offshore wind farms, parts of the national grid and district network distribution system and other solar farms) and there is no evidence to suggest they have an effect on ecological features. Heating of the soil would occur over a small area only with typical estimates of measurable changes in temperature being at most between 1 and 1.5m from the cable thus making any potential effect highly localised.

Likely Significant Effects Scoped into the Detailed Assessment

6.36. The construction, operational and decommissioning phases of a solar farm may result in a range of potential likely significant effects that require detailed assessment which include:

- > Temporary land take and habitat degradation during construction;
- > Permanent land take and habitat loss / degradation associated with presence of permanent infrastructure;
- > Fragmentation of semi-natural habitats due to habitat loss / degradation and reduction in landscape permeability due to the presence of infrastructure;
- > Increases in noise, vibration and human presence during the construction and decommissioning phases resulting in disturbance of fauna;
- > Increases in temporary and permanent lighting through all phases of the Proposed Development resulting in disturbance of fauna;
- > Changes in ground water levels and surface water movement patterns due to imposition of temporary and permanent drainage resulting in habitat degradation;
- > Accidental spread of invasive non-native species due to construction activity;
- > Pollution of terrestrial and freshwater habitats through loss of chemicals and fines / dust from the Site, particularly during construction and decommissioning;
- > Changes in hydrology (ground water levels and surface water run-off rates) resulting in habitat change.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

6.37. Some baseline surveys, most specifically non-breeding bird surveys are continuing. In addition, further baseline data required to inform the assessment is detailed below. It should, however, be noted that the processing of field data gathered in 2023 may suggest that further survey effort is required.

- 6.38. The following additional surveys may be required depending on the development design:
- > Hedgerow survey (based on the Hedgerows Regulations 1997) in any locations where hedgerows may require removal (this is expected to be minimal and largely associated with widening existing field access points where necessary)
 - > Additional otter and water vole survey in any locations where culverting is required to facilitate the delivery of construction tracks / Site access.
- 6.39. At this juncture it is not considered necessary to repeat any other surveys to provide additional data. Although the breeding bird and bat surveys did not cover the whole area, both taking a sampling approach, the understanding needed to design appropriate mitigation measures and enhancements has been achieved.

Approach to Ecological Impact Assessment

- 6.40. The approach to EclA follows the guidance published by CIEEM (2018, updated 2022) although changes in terminology and structure will be adopted where reasonable and not in conflict with the referenced guidance and best practice to align with the general approach used within other technical chapters within the Environmental Statement (ES).
- 6.41. The first stage in the assessment is to determine the importance of the ecological features identified on the Site or within the Zol. The CIEEM guidance requires that each ecological feature is conferred importance against a geographic scale. The level of importance is conferred by the relation of the ecological feature to UK legislation and policy. The geographical levels that will be considered for the assessment of the Proposed Development are:
- > International
 - > National (i.e. UK / England)
 - > County (i.e. Nottinghamshire and Lincolnshire)
 - > District (i.e. West Lindsey, Bassetlaw and Newark & Sherwood)
 - > Local (i.e. the Site and immediate surrounds)
 - > Negligible
- 6.42. This level of importance will also be qualified with a secondary geographic scale (using the same terminology) to highlight where a project level effect may operate on a smaller scale only (e.g. effects that could alter the status of a local population, but remain negligible at a regional or national level). This judgement will be informed by information on the extent and population size, population trends and distribution of the ecological features in question.
- 6.43. All ecological features determined to be of negligible importance will automatically be excluded from detailed assessment, with the exception of legally protected species for which mitigation measures may be required to ensure compliance with legislation.

- 6.44. Ecological features of local importance or above will then be considered individually for inclusion with the detailed assessment. Through an understanding of the activities associated with the Proposed Development and the resulting environmental changes, it is possible to identify ecological features that may be subject to potentially significant effects. Where no potential for significant effects is identified, following the imposition of typical project level embedded mitigation measures (e.g. pollution prevention measures), ecological features will be scoped out of further detailed assessment.
- 6.45. Those ecological features taken forward for more detailed assessment will be considered in line with CIEEM guidelines. CIEEM (2018, updated 2022) defines a significant effect as one 'that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general'.
- 6.46. When considering likely significant effects on ecological features, whether these are negative or positive, the following characteristics of environmental change will be taken into account:
- > extent – the spatial or geographical area over which the environmental change may occur;
 - > magnitude – the size, amount, intensity or volume of the environmental change;
 - > duration – the length of time over which the environmental change may occur;
 - > frequency – the number of times an environmental change may occur;
 - > timing – the periods of the day / year / season during which an environmental change may occur; and
 - > reversibility – whether the environmental change can be reversed through restoration actions or regeneration.
- 6.47. Both negative and positive effects are assessed as being significant if the favourable conservation status of an ecological feature would be altered as a result of the Proposed Development. Conservation status is defined in CIEEM 2018 (in paragraph 5.3.2) as follows:
- 'habitats - conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area'; and*
- 'species - conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area'.*
- 6.48. Professional judgement will be used, in light of the available evidence, to determine whether the conservation status of an ecological feature will be altered either negatively or positively.
- 6.49. When considering designated sites, it is their integrity, as well as qualifying features and conservation status, that is considered. This is defined as *'the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.'*

- 6.50. The assessment of effects on integrity will draw upon the assessment of effects on the conservation status of the features for which the site has been designated.
- 6.51. Where likely significant adverse effects are identified, environmental measures, including mitigation, will be incorporated into the project where practicable. These will be described in detail, including providing information on how they will be secured and their expected efficacy.
- 6.52. Each ecological feature will be considered across all phases of the Proposed Development to ensure potential outcomes are considered realistically.

7. Hydrology and Hydrogeology

Introduction

- 7.1. This Chapter of the Scoping Report presents the scope of the environmental assessment for Hydrology and Hydrogeology. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those hydrology and hydrogeology matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.

Review of Policy, Legislation and Relevant Guidance

- 7.2. Legislation, planning policy and guidance relating to hydrology and hydrogeology, and relevant to the Proposed Development comprises:

Legislation

- > The European Water Framework Directive (WFD) (2000).
- > Flood Directive (2007).
- > Environmental Protection Act (1990).
- > Water Resources Act (1991) as amended 2009.
- > Land Drainage Act (1991).
- > Environment Act (1995).
- > Water Act (2014).
- > The Groundwater (England and Wales) Regulations (2009).
- > The Flood Risk Regulations (2009).

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – specific reference to Part 5, Section 5.7, which relates to Flood Risk.
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Part 5, Section 5.8, which relates to Flood Risk.
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2023) - specifically paragraphs 2.3.1 to 2.3.4
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2023) - specifically paragraphs 3.10.15, 3.10.75
- > National Planning Policy Framework (2023) specific reference to Section 14.

Local Planning Policy

- > Newark & Sherwood District Council, Amended Core Strategy Development Plan (2019). Core Policy 9 and Core Policy 10.
- > Central Lincolnshire Local Plan (2023). Policies S20 and S21.
- > Bassetlaw District Council (2010) Publication Core Strategy and Development Management Policies. Policy DM12
- > Draft Bassetlaw Local Plan 2020-2038: Main Modifications Version, August 2023. Policy ST52 and ST53.

National Guidance

- > Planning Practice Guidance (2023) Flood Risk and Coastal Change Planning Practice Guidance (PPG) (updated 2022).
- > DEFRA Non-statutory technical standards for sustainable drainage systems (2015).
- > Construction Industry Research and Information Association (CIRIA) Report C753 The SuDS Manual (2015)

Local Guidance

- > Bassetlaw District Level 1 Strategic Flood Risk Assessment (SFRA) (2019).
- > Newark and Sherwood District Level 1 SFRA (2016).
- > West Lindsey Level 1 SFRA (2009).
- > Lincolnshire Sustainable Drainage Design and Evaluation Guide (2018).

Baseline Conditions

Approach to Collection of Baseline Data

- 7.3. The baseline conditions of the Site and surroundings have been established using the following sources of information:
- > Visual inspection of the Site to assess flood risk based on topography and existing natural drainage regime.
 - > Ordnance Survey (OS) maps and British Geological Survey⁴¹ maps.
 - > Environment Agency (EA) Flood Map for Planning, Surface Water Flood Risk Mapping, and Reservoir Flood Risk Mapping⁴².
 - > BGS Aquifer Designations, EA Groundwater Vulnerability Mapping, and Source Protection Zone Mapping⁴³.

41 British Geological Survey Geology of Britain 3D (Geology Of Britain 3D)
<https://mapapps.bgs.ac.uk/geologyofbritain3d/>

42 Environment Agency Flood Map for Planning available at www.flood-map-for-planning.service.gov.uk

43 MagicMap.go.uk [online]. Available at: <https://magic.defra.gov.uk/magicmap.aspx>

- > Bassetlaw District Level 1 SFRA (2019), Newark and Sherwood District Level 1 SFRA (2016) and West Lindsey District Level 1 SFRA (2009).
- > Topographic levels from the EA 1 metre (m) LiDAR⁴⁴ (2022).
- > Consultation with East Midlands EA on the 13th September, receipt and analysis of Tidal Trent (2023) Hydraulic Model.
- > Soilscales Online Soil Viewer⁴⁵.

Relevant Baseline Conditions

Topography

- 7.4. Given the scale of the Site, the topography varies considerably across its extent with highest levels at approximately 28m Above Ordnance Datum (AOD) at hills east of the Trent, to 4m AOD along the banks of the River Trent.

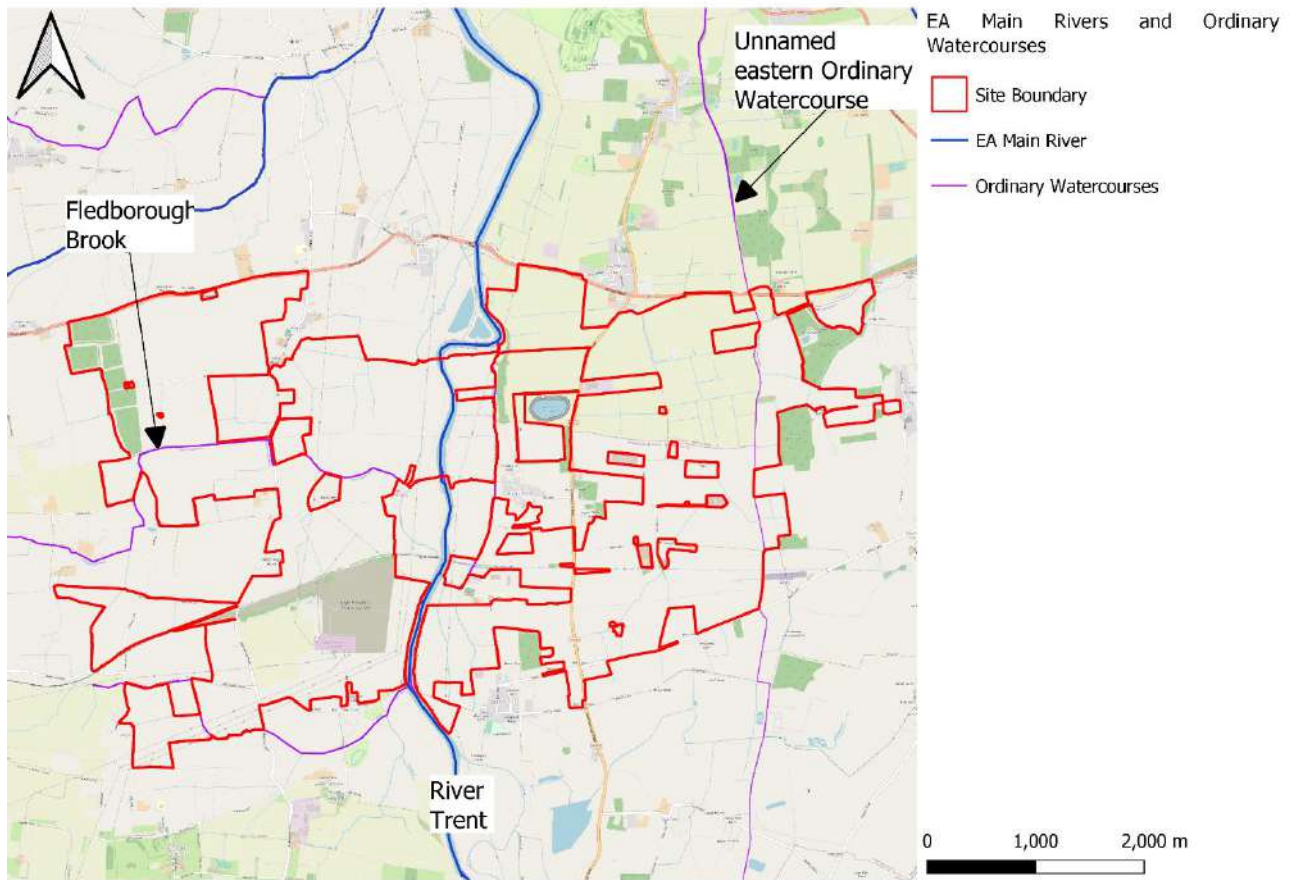
Existing Watercourses

- 7.5. The Site is bisected by the River Trent which is classified as a main river by the EA and flows from south to north. In addition to the River Trent, there are a number of named and unnamed ordinary watercourses which flow through the Site, these are illustrated in Figure 7-1.

44 Department for Environment Food and Rural Affairs, 2022. DTM 1m LiDAR data, available: <https://environment.data.gov.uk/DefraDataDownload/?Mode=survey>

45 Cranfield University. Available at: <https://www.landis.org.uk/soilscales/>

Figure 7-1 Environment Agency Main Rivers and Ordinary Watercourses within Vicinity of the Site

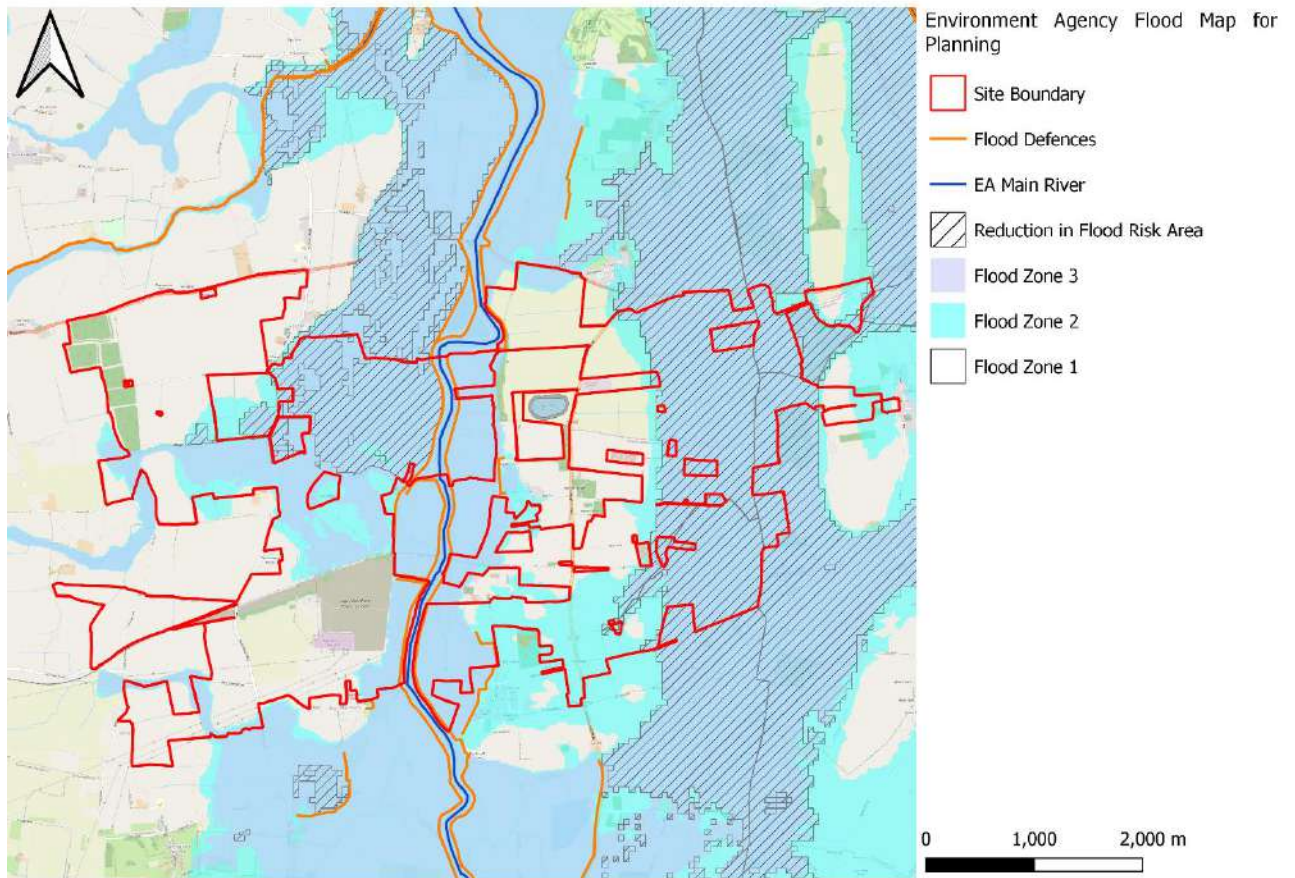


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Flood Risk

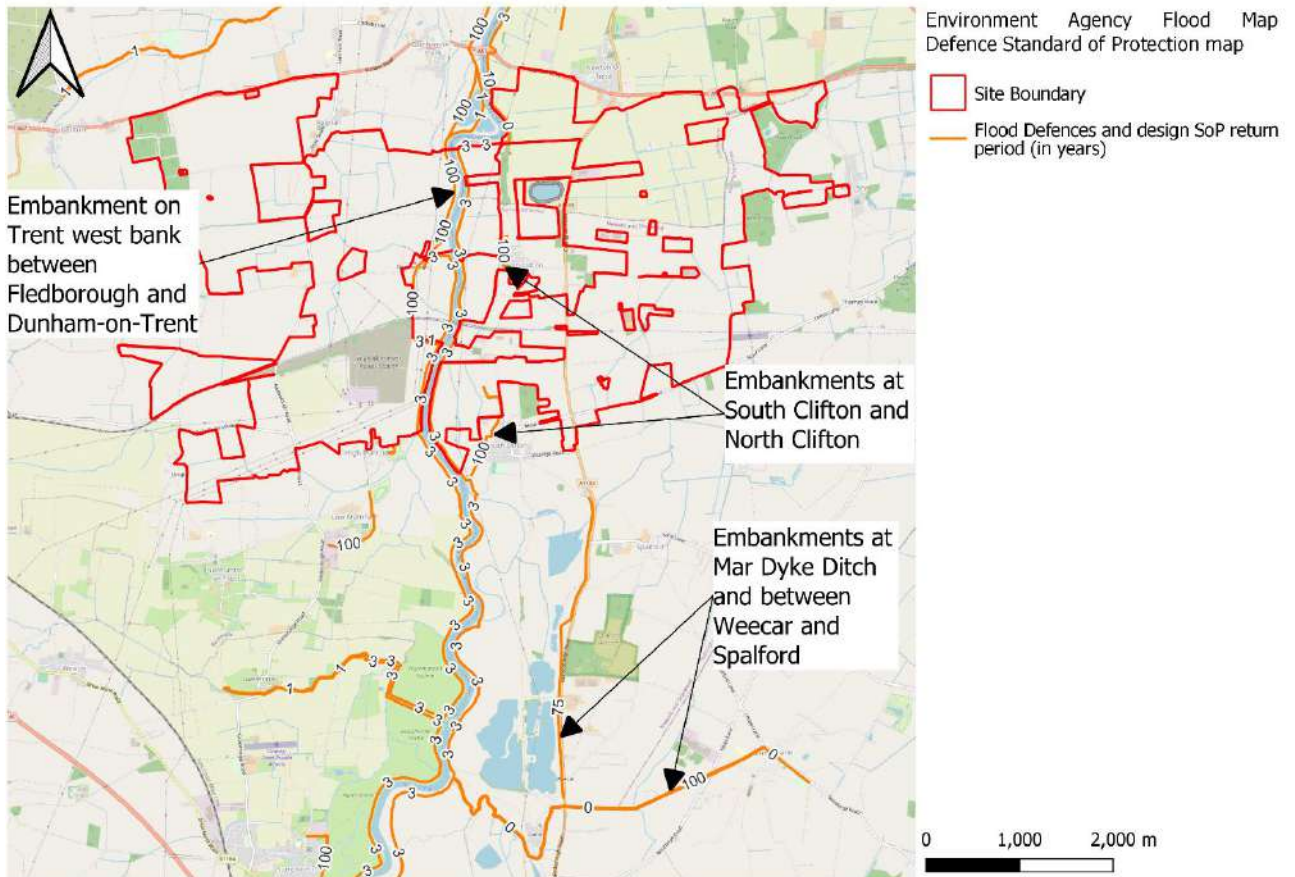
- 7.6. According to the EA's Flood Map for Planning, large areas of the Site are shown to be within Flood Zones 2 and 3, indicating a medium and high probability of flooding from tidal and fluvial sources (see Figure 7-2). This flooding is considered to originate and be predominantly associated with the River Trent which flows through the centre of the Site, however as set out previously, there are a number of ordinary watercourses within the Site which are hydraulically connected to the River Trent.

Figure 7-2 Environment Agency Flood Map for Planning



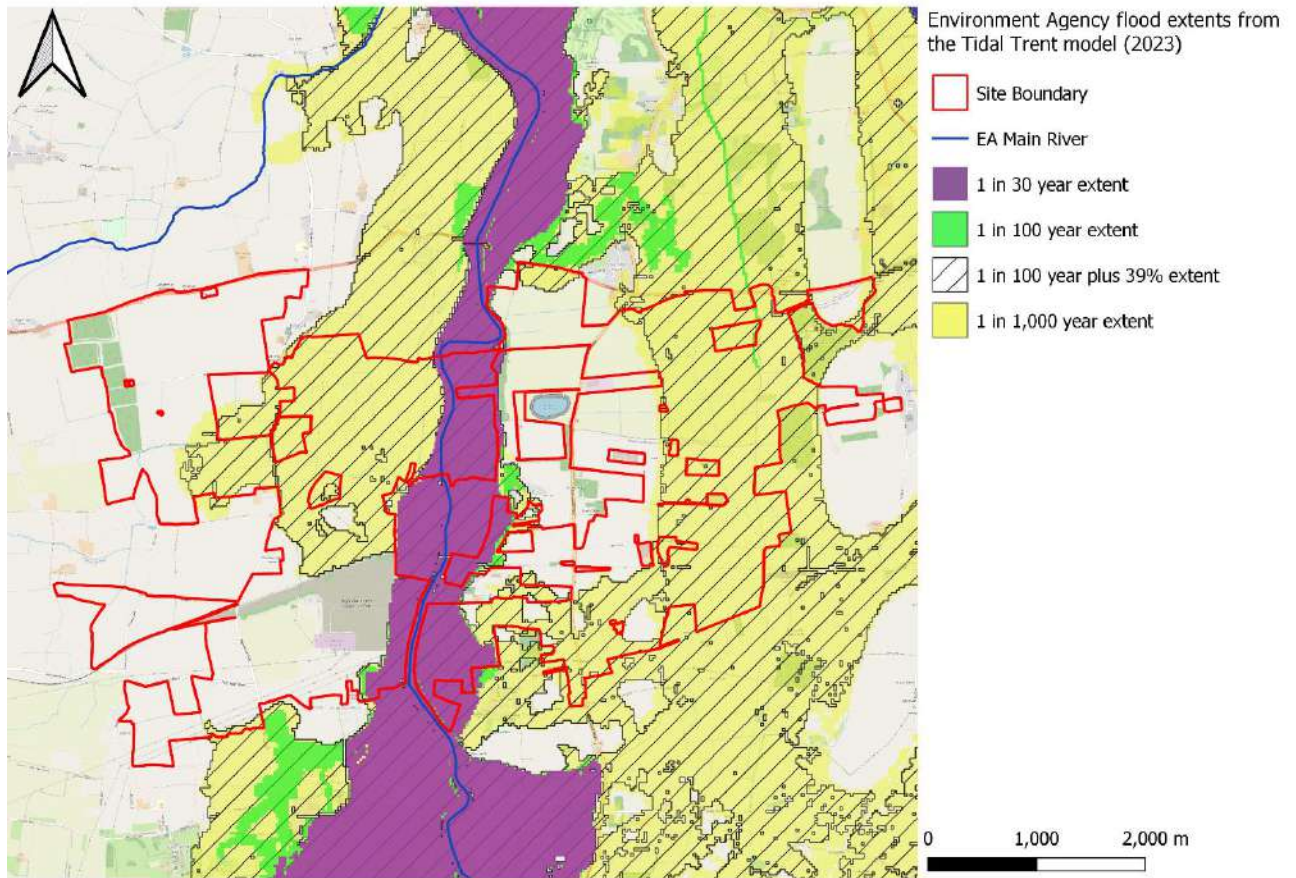
7.7. The EA's Flood Map for Planning shows the presence of flood defences, both on the banks of River Trent and set back from its main channel. The Standard of Protection (SoP) these defences provide varies from the 1 in 3 year level, up to the 1 in 100 year, as shown on Figure 7-3. A number of areas within the Site therefore benefit from these defences and these areas are illustrated in Figure 7-2 above by the hatch indicating "Reduction in Risk of Flooding from Rivers and Sea due to Defences".

Figure 7-3 Environment Agency Flood Defence Standard of Protection



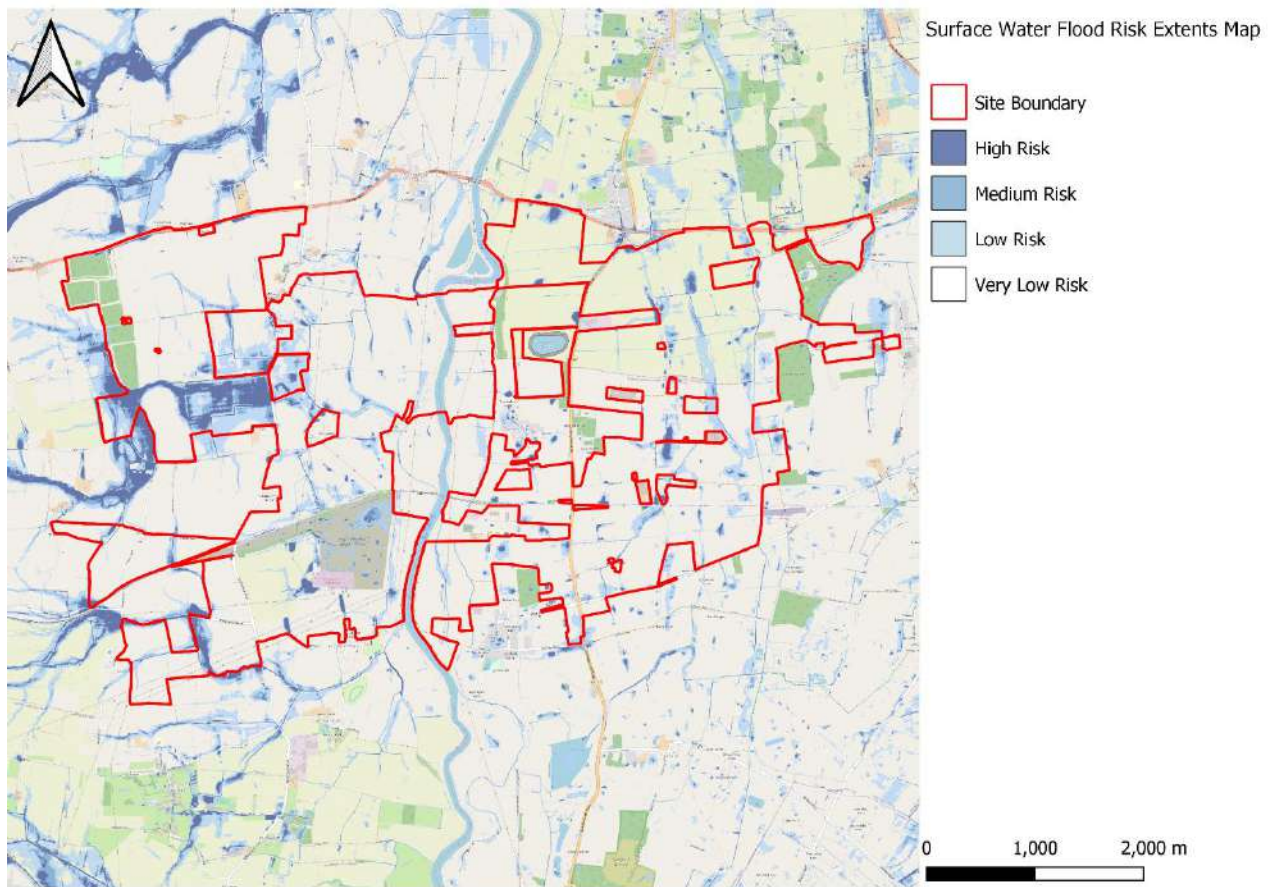
- 7.8. Through engagement with East Midlands EA on the 13th September 2023, results from the Tidal Trent Hydraulic Model defended scenario have been provided and these have been reviewed to assess flood risk at the Site for a number of different scenarios. Based on this review it has been established that the largest flood extents occur in the fluvially dominated scenario rather than the tidal. It is noted however that the fluvially dominated scenario does include consideration of a 1 in 2 year tidal influence.
- 7.9. Annex 3 of the NPPF confirms that solar farms are classified as essential infrastructure and the fluvial climate change requirement is therefore the higher central allowance. The design flood event for the Site is therefore the 1 in 100 year plus 39% climate change fluvial event. The use of this design flood event for the design of the Proposed Development was discussed with the EA and agreed during the engagement meeting on the 13th September 2023. As shown in Figure 7-4, this event covers large areas to the east and central areas within the Site. The depth of flooding in the design event varies from greater than 4m in the vicinity of the River Trent to less than 0.5m in the east and west.

Figure 7-4 Defended Scenario Fluvial Flood Extents



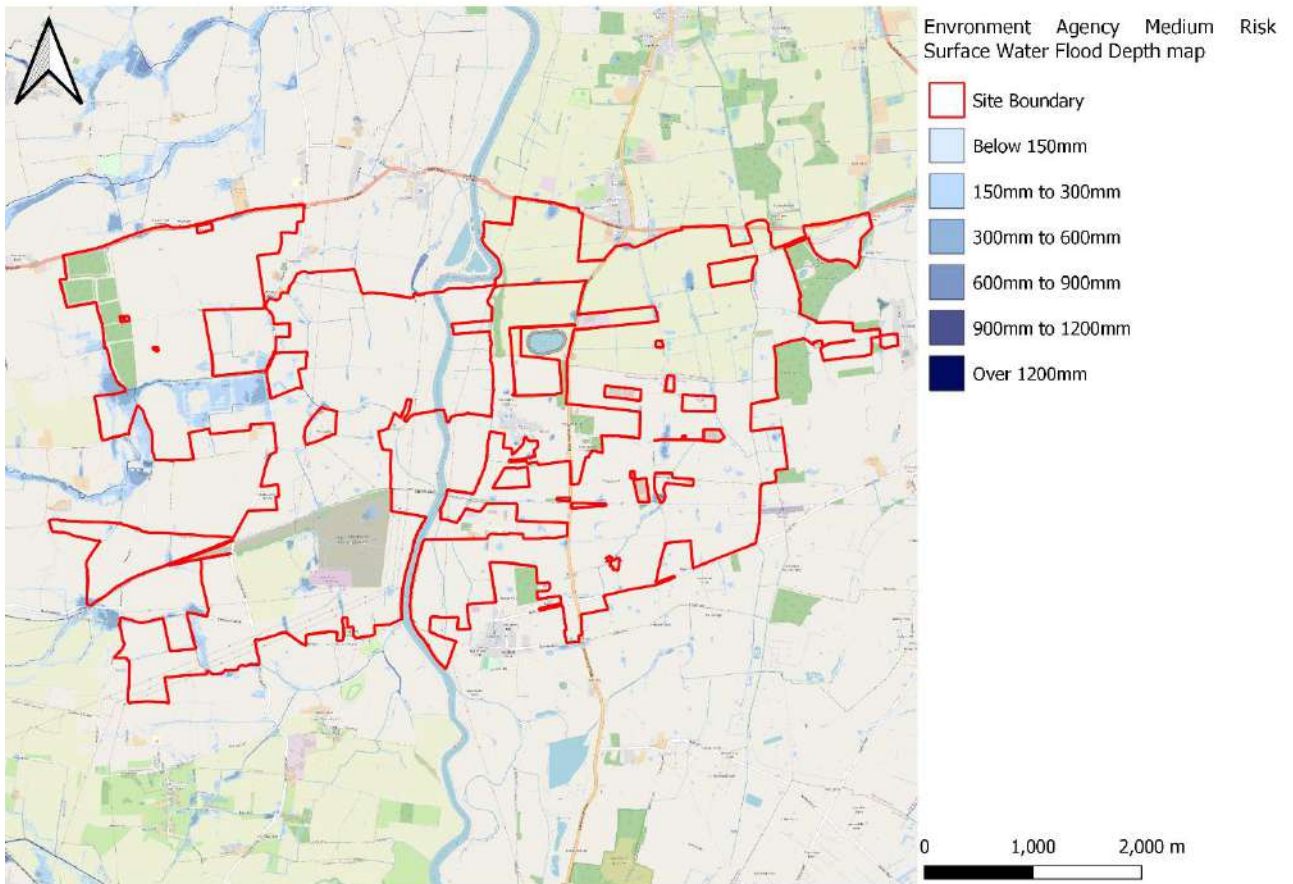
7.10. The EA Flood Risk from Surface Water mapping indicates the majority of the Site is at very low risk of flooding from fluvial sources (see Figure 7-5). There are however localised areas within the Site which are shown to be at low, medium and high risk, which are largely associated with the Fledborough Beck in the west and unnamed Ordinary Watercourses in the southwest and east of the Site.

Figure 7-5 Environment Agency Flood Risk from Surface Water map



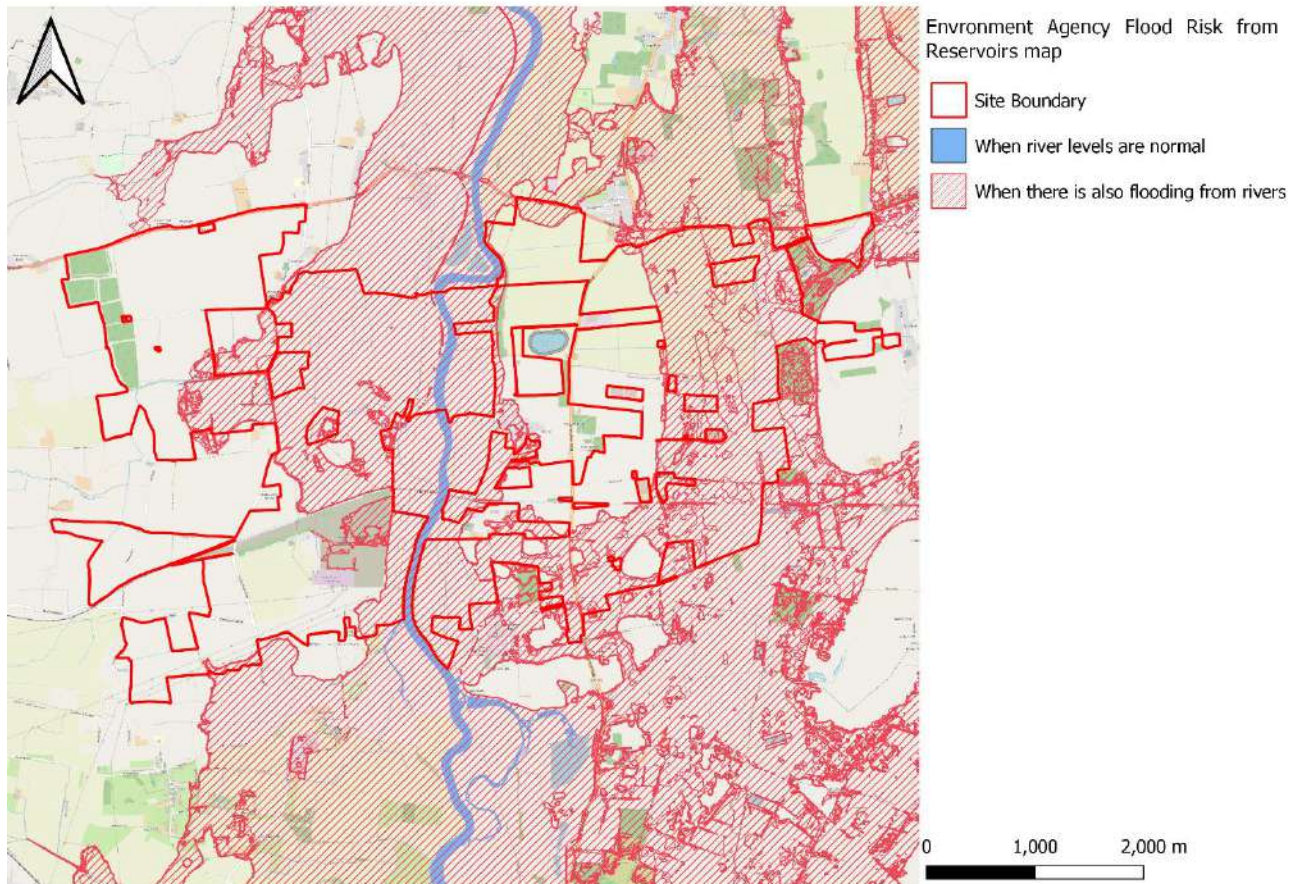
- 7.11. Review of the Medium Risk Surface Water Flood depth map shows that flood depths outside of these channels are generally below 300mm, however there are localised areas where flood depths of up to 900mm are experienced (see Figure 7-6).
- 7.12. The risk of flooding from surface water is therefore in general considered to be low.

Figure 7-6 Environment Agency Medium Risk Surface Water Flood Depth Map



7.13. The EA Flood Risk from Reservoirs mapping indicates that no flooding would be experienced at the Site when river levels are normal. When there is also flooding from rivers, however, large areas within the central and eastern areas of the Site are affected (see Figure 7-7). It is worth noting that reservoirs are maintained to a high standard and are inspected regularly, and as such the chance of reservoir failure is considered to be extremely low.

Figure 7-7 Environment Agency Flood Risk from Reservoirs Map



- 7.14. Mapping from the Bassetlaw Level 1 SFRA shows that the areas of the Site west of the River Trent lie where there is a susceptibility to groundwater flooding ranging from greater than 75% to less than 25% (see Appendix 1 of the SFRA). The areas of highest susceptibility are closest to the Trent's western bank, which is anticipated to be due to the permeable Alluvium superficial deposits. No data or mapping for groundwater flooding was available to inform scoping for areas of the Site east of the Trent.

Existing Drainage Arrangement

- 7.15. The vast majority of the Site is entirely greenfield in nature and therefore there is not anticipated to be any formal surface water drainage networks in place to drain the Site. It is anticipated therefore that precipitation at the Site simply infiltrates to the ground with any additional runoff being directed to the existing network of ordinary watercourses and field drains which ultimately discharge to the River Trent.

Geology and Hydrogeology

- 7.16. According to the British Geological Survey (BGS) online geology mapping, the Site is generally underlain by bedrock geology of Mercia Mudstone Group (consisting of mudstone). The far east of the Site is underlain by bedrock geology of Penarth Group (consisting of mudstone), and Scunthorpe Mudstone Formation (consisting of mudstone and limestone interbedded).
- 7.17. Furthermore, the BGS mapping indicates that the Site is underlain by a combination of superficial deposits, consisting of the following:

- > Holme Pierrepont Sand and Gravel Member (consisting of sand and gravel);
- > Alluvium (consisting of clay, silt, sand and gravel);
- > Blown Sand (consisting of sand) and
- > Till (consisting of Diamicton).

7.18. There are also large areas across the Site where no superficial deposits are present.

7.19. The EA aquifer designation mapping indicates the following:

- > Bedrock geology of Mercia Mudstone Group as a Secondary B aquifer;
- > Bedrock geology of Penarth Group as a Secondary Undifferentiated aquifer;
- > Superficial geology as a Secondary A aquifer.

7.20. The EA Groundwater Vulnerability Mapping shows that the entire Site has medium-high to high vulnerability to pollutant discharge at ground level. BGS Source Protection Zone (SPZ) mapping shows the majority of the Site is situated outside of any SPZ, however, there are limited areas in the far north which are situated within Zone I (Inner Protection Zone), Zone I (Subsurface Activity) and Zone II (Subsurface Activity).

Environmental Measures

7.21. In general, it is proposed that no land raising will be undertaken as part of the Proposed Development to ensure that there is no increase in flood risk to the Site or surrounding areas. Should any local land raising be required across the Site, then level for level floodplain compensation will be provided to ensure there is no increase in flood risk.

7.22. At this stage, it is proposed that solar panels will not be provided in areas where flood depths exceed 1.5m. Solar panels provided within the flood extents however, will be raised on frames to be a minimum of 1.8m above the ground surface therefore ensuring that a 300mm freeboard is provided between the lowest point of the panel and the flood level. By raising the panels, it is ensured that they will remain operational during a flood event and will ensure that flood water can continue to flow through the development.

7.23. It is proposed that suitable offsets will be provided from the top of bank of all main rivers and ordinary watercourses within the Site to ensure that ecological corridors are maintained and access for maintenance works is provided.

7.24. The Site as existing is drained by a network of ordinary watercourses and field drains which ultimately discharge to the River Trent. Although drainage proposals for solar farms are typically fairly limited on the basis that the inclusion of developments of this type will have little to no effect when compared to the greenfield scenario, it is proposed that Sustainable Drainage Systems (SuDS) will be incorporated where it is possible and appropriate, thereby ensuring a natural drainage solution occurs.

7.25. In particular, SuDS will be provided to accommodate runoff from any proposed permanent hardstanding areas. These features will provide water quantity, quality, amenity and biodiversity benefits.

Scope of Assessment

Important Receptors Identified

7.26. Following baseline reviews, the following important receptors have been identified and would be considered within the assessment:

- > Users of both the construction site (i.e. construction workers) and of the completed development in relation to flood risk from all sources.
- > Off Site areas in relation to flood risk from all sources.
- > Existing watercourses on and adjacent to the Site with respect to surface water discharge rates, volume, and quality of runoff.
- > The surrounding Anglian Water and Severn Trent water mains with regard to potable water capacity/supply.

Likely Significant Effects Scoped Out from Detailed Assessment

7.27. Table 7-1 presents the elements which have been scoped out from the detailed assessment, as it is considered no likely significant effects will occur.

Table 7-1: Potential Likely Significant Effects Scoped out from the Hydrology and Hydrogeology Detailed Assessment

Elements Scoped Out	Justification
Foul Water	No assessment is proposed of the effect that increased foul flows will have on the capacity of the surrounding Anglian Water and Severn Trent network and wastewater treatment works. Construction impacts will be temporary and using existing foul water infrastructure or more often, would be served by welfare facilities that are unconnected to the mains, thus meaning that there would be only very limited foul flow increases. The potential for increases during operation are also limited with maintenance of the Proposed Development being undertaken by a limited number of people and comprising only repairs and cleaning of the panels and other infrastructure. As a result, it is proposed to scope out the effect of changes to the foul water network from detailed assessment.

Construction and
Decommissioning

Construction activities have the potential to result in increased localised flood risk due to earthworks. Changes in flood risk from the construction of the Proposed Development will be managed by the good practice principles which will be outlined in a Construction Environmental Management Plan (CEMP), which will include a Construction Surface Water Management Plan and awareness training / talks for construction workers so that they are aware of the risks and how to mitigate them through working practices. It is also anticipated that a temporary drainage system will be implemented during construction. With the measures set out in the CEMP it is considered no likely significant effects will occur and therefore it is proposed to exclude it from the scope of the EIA.

Construction activities (e.g. soil stripping activities / trench excavations for cables on-site) have the potential to result in silt laden runoff, resulting in the sedimentation and pollution of local watercourses. Silt / soil laden runoff produced during construction activities will be controlled through the implementation of the CEMP and the provision of a Construction Drainage Management Plan. The CEMP will be informed by the Environment Agency's Pollution Prevention Guidelines and will include the prevention measures stated above. Therefore, watercourse pollution as a result of silt laden runoff from construction activities is not considered to be a potentially significant environmental effect and therefore it is proposed to exclude it from the scope of the EIA.

Construction activities have the potential to result in chemical spillages, resulting in the pollution of local watercourses. Spillages which could occur during construction activities will be controlled through the implementation of the CEMP. The CEMP will be informed by the Environment Agency's Pollution Prevention Guidelines and will include the prevention measures stated above. Therefore, water pollution as a result of chemical spillages used during construction activities is not considered to be a potentially significant environmental effect and therefore it is proposed to exclude it from the scope of the EIA.

Construction activities have the potential to result in cement and concrete dusts being mobilised in surface water runoff, resulting in the pollution of local watercourses. Particle laden runoff which could occur during construction activities will be controlled through the implementation of the CEMP. The CEMP will be informed by the Environment Agency's Pollution Prevention Guidelines and will include the prevention measures stated above. Therefore watercourse pollution as a result of cements and concretes being mobilised in surface water runoff as a result of construction activities is not considered to be a potentially significant environmental effect and therefore it is proposed to exclude it from the scope of the EIA.

The potential effects during decommissioning will be similar to those expected during the construction phase, as listed above. With appropriate management plans and measures in place, which will be considered and set out in the Decommissioning Environmental Management Plan, it is anticipated that there will not be any significant effects to flood risk or water quality as a result of the decommissioning works. As such, the impact of the decommissioning works on flood risk and water quality is proposed to be excluded from the scope of the EIA.

Likely Significant Effects Scoped into the Detailed Assessment

- 7.28. It is anticipated that the following effects would be considered as part of the assessment:
- > Flood risk effects on users of the Site during operational phases.
 - > Flood risk effects to areas off Site.
 - > Effects of changes in quality and quantity of surface water runoff from the Site to the surrounding watercourses as a result of the proposals. It is anticipated that because the proposed drainage regime at the Site will mimic the existing greenfield scenario as far as is reasonably practical, including SuDS where appropriate to ensure that the quantity and quality of runoff will match the greenfield situation, that there will be no significant effects as a result but nevertheless the proposal is to undertake an assessment that should confirm this⁴⁶.
 - > The effect that the Proposed Development will have on the hydrogeology and groundwater flows.

⁴⁶ Please note that assuming that the assessment shows that there will be no significant effects, a Water Framework Directive (WFD) assessment will not be undertaken in support of the application. This is as the works would not cause or contribute to deterioration of the status of the existing watercourses or jeopardise the watercourses achieving good status.

- > The effect that increased potable water demand would have on the surrounding Anglian Water and Severn Trent water network.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

- 7.29. In order to inform the assessment, a detailed review of the baseline conditions will be undertaken to ensure that all aspects of the important receptors are understood, and the effects can be assessed accurately. As well as baseline research, consultation beyond that already undertaken will be progressed with the following to ensure that a detailed knowledge of the existing and future site is understood.
- > Further consultation with the EA to obtain all relevant flood risk information associated with the Site and surrounding areas.
 - > Consultation with Nottinghamshire County Council (NCC) and Lincolnshire County Council (LCC) to obtain relevant flood risk information and to discuss the approach to surface water drainage.

Operation

- 7.30. As part of the DCO application, an NPPF compliant Flood Risk Assessment (FRA) and an accompanying Drainage Strategy would be prepared which would take account of the above baseline research and consultation responses into account.
- 7.31. The principles of the assessment would be agreed in collaboration with the design team, and discussed throughout design development, to ensure that related flood risk and drainage aspects are inherently incorporated within the masterplan. The scope of the FRA and Drainage Strategy assessments would include:
- > Consideration of the likely significant effects of flooding to the Site and identification of any necessary mitigation measures.
 - > Residual risks after implementation of any necessary mitigation measures, allowing for the future impacts of climate change.
 - > Qualitative consideration of any effects on the flow of groundwater beneath the Site.
 - > SuDS considered appropriate for inclusion within the Proposed Development.
- 7.32. An assessment of potable water supply to serve the Proposed Development would also be provided.
- 7.33. The above research, consultation, and reviews of the FRA (including Drainage Strategy) will be used to determine and conclude the impacts that the potential effects would have on the receptors identified.
- 7.34. The potential for groundwater contamination and any mitigation required will be covered within the Land and Soils Chapter.

Assumptions, Limitations and Uncertainties

- 7.35. Appropriate undefended and defence breach data for the relevant climate change allowance and return periods are yet to be obtained from the EA. Further data and clarification from the EA will be requested on these elements.

- 7.36. The design peak flow allowance for the Site has been considered as plus 39% during the 1 in 100 year event. This takes into account the proposed lifespan of the Proposed Development, and its location predominantly within the Lower Trent and Erewash Management Catchment. The corresponding allowance for the neighbouring Witham Management Catchment is plus 32%. The plus 39% allowance is therefore conservative and was set out to the EA during consultation on the 13th September 2023 who agreed with the approach.
- 7.37. The majority of the Site is situated within the Trent Valley Internal Drainage Board (IDB). IDBs require water levels to be managed at a certain level, and any works are required to be offset from watercourses from a distance which may be greater than EA or LPA requirements. Consultation will be undertaken with the IDB to confirm their requirements.
- 7.38. Consideration of Site topography has been based on EA 1m LiDAR (2022).
- 7.39. From consultation with the EA on 13th September, it was discussed that any cable routing under or over the River Trent Main Channel may require environmental permits as necessary from the EA.

8. Land and Soils

Introduction

- 8.1. This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Land and Soils. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, the matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.

Review of Policy, Legislation and Relevant Guidance

- 8.2. Legislation, planning policy and guidance relating to land and soils, and pertinent to the Proposed Development comprises:

Legislation

- > Environmental Protection Act, 1990
- > Control of Pollution Act, 1974
- > Environmental Permitting Regulations 2016 (as amended)

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – specific reference to Part 5, Section 5.10, which relates to land use including open space, green infrastructure and Green Belt.
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Part 5, Section 5.11, which relates to land use.
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2023) - specifically paragraphs 3.10.13 to 3.10.19, 3.10.188, 3.10.136
- > The National Planning Policy Framework, 2023 – paragraphs 153-158, pages 45-46.
- > A Green Future: Our 25 Year Plan to Improve the Environment
- > Town and Country Planning (Development Management Procedure) (England) Order 2015

Local Planning Policy

- > Newark and Sherwood District Council, Local Development Framework, Allocations and Development Management, Development Plan Document (2013) – Policy DM8
- > Central Lincolnshire Local Plan (2023) – section 11.8, BMV Land, page 149-150
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – Policy DM10: Renewable and Low Carbon Energy

- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023 - Strategic objectives, paragraph 4.17; Policy ST1: Bassetlaw's Spatial Strategy; Policy ST51: Renewable Energy Generation

National Guidance

- > Planning Practice Guidance (2023) – Renewable and Low Carbon Energy Guidance
- > Natural England (1988) 'Agricultural land Classification of England and Wales: Revised criteria for grading the quality of agricultural land (ALC011)
- > Natural England (2017) Likelihood of Best and Most versatile Agricultural Land

Baseline Conditions

Approach to Collection of Baseline Data

- 8.3. For the purposes of the scoping report, baseline Agricultural Land Classification (ALC) has been established by reference to the Provisional ALC Map of England and ALC Grades – Post 1988 Survey. These data are available online⁴⁷.

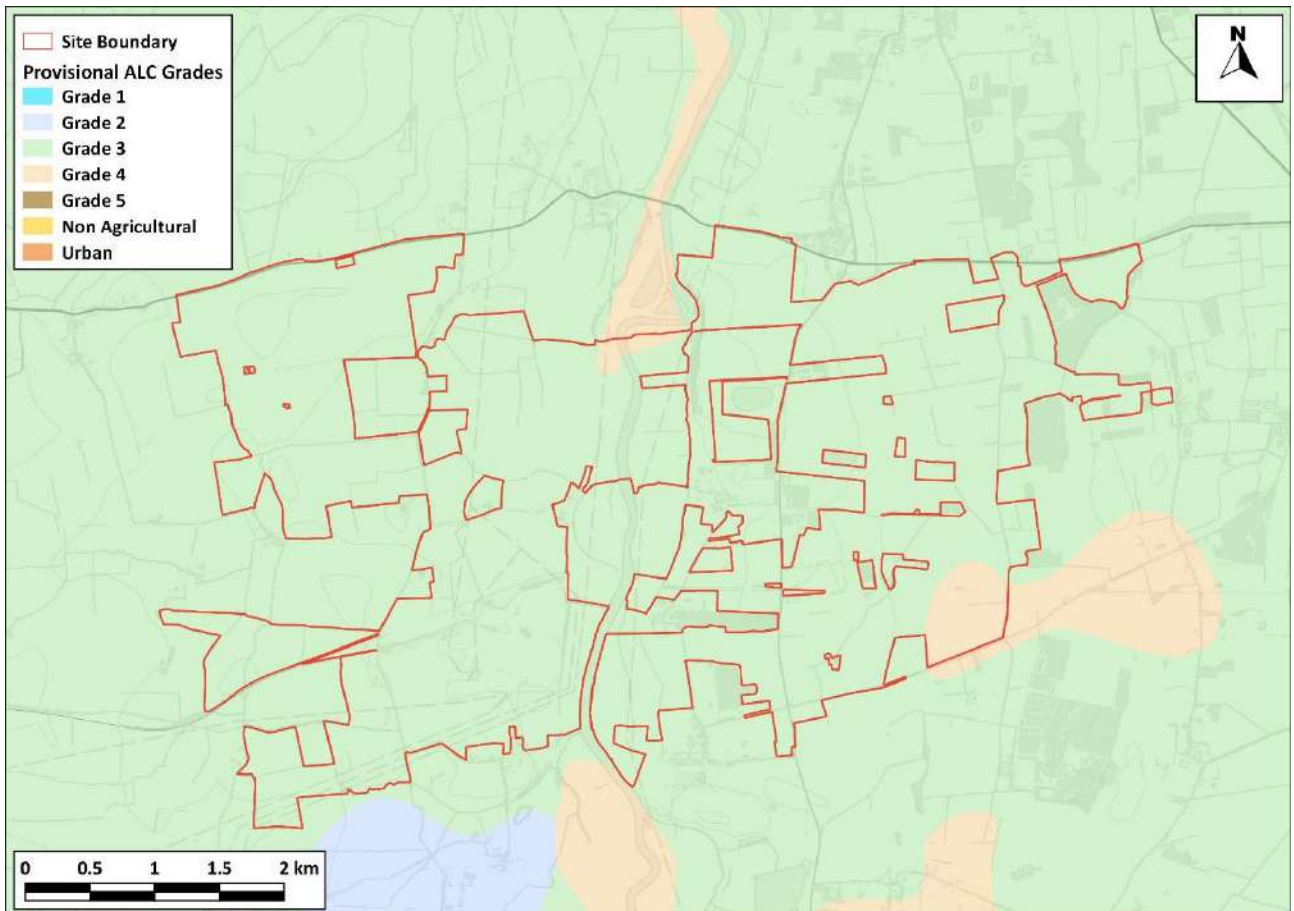
Relevant Baseline Conditions

- 8.4. The ALC system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. This system classifies land into five basic grades, Grade 1 land being the highest quality and Grade 5 the lowest quality. Land in Grade 3 is sub-divided into Subgrades 3a and 3b, to identify good quality agricultural land from moderate quality land. The 'best and most versatile' (BMV) agricultural land falls into Grades 1, 2 and Subgrade 3a.
- 8.5. The Provisional ALC Map of England grades land using the ALC methodology pre-1988, with good to moderate quality land reported as Grade 3. The Grade 3 band was split into two sub-grades in the 1988 updated revised guidelines, with good quality land recorded as sub-grade 3a and moderate quality land as sub-grade 3b. As shown in Figure 8-1 (which is the same as Figure 2-2 but has been repeated for ease), according to the Provisional ALC Map of England, the land within the Site is almost entirely graded as Grade 3.
- 8.6. As the term 'BMV' refers to land defined as Grade 1, 2, or 3a, it is not possible to assess whether land mapped by the Provisional ALC Map of England as Grade 3 is BMV or not, as the ALC Map does not provide a subset for Grade 3 (i.e. areas distinguished as either 3a or 3b).

⁴⁷ Available at :

<https://environment.data.gov.uk/DefraDataDownload/?mapService=NE/AgriculturalLandClassificationProvisionalEngland&Mode=spatial>

Figure 8-1: Agricultural Land Classifications across the Site



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- 8.7. Natural England's 'Likelihood of BMV Agricultural Land – Strategic Scale Map' systematically assessed on a regional basis in accordance with the current classification criteria (MAFF, 1988) using a combination of ALC data derived from site surveys (post 1988), provisional ALC map data, climatic data and published Soil Survey and Land Research Centre (now National Soil Resources Institute) information, to give an assessment for each of the likely proportion of 'best and most versatile' agricultural land to be encountered, according to the following categories:
- > High likelihood of BMV (>60% BMV)
 - > Moderate likelihood (20-60% BMV) and
 - > Low likelihood (<=20% BMV).
- 8.8. This considers that BMV is highly likely to occur in a band down the centre of the eastern half of the Site, moderately likely to occur to the west and south of Ragnall and that there is a low likelihood of BMV occurring to the immediate east and west of the River Trent and down the eastern side of the Site.

8.9. A review of the Natural England ALC database found no records of existing ALC surveys within the Site. An ALC survey has been completed to the south of South Clifton, approximately 1km south of the Site boundary, which followed the post 1988 guidelines. Whilst this survey is outside of the Site, the results provide further context in terms of ALC results for the local area. Consequently, soils at this location are mapped as being similar to those found within the Site and the area mapped as Grade 3 by the Provisional ALC Map of England. This survey graded almost all of the land as either subgrade 3a or 3b. Six further post 1988 ALC surveys are reported by Natural England within approximately 10km of the south of the Site, each mapped by the Provisional ALC Map of England as being of Grade 3 quality. In each instance, the survey reported land of almost entirely subgrade 3a and 3b quality.

Environmental Measures

8.10. The Proposed Development will include a Soil Resource Management Plan (SRMP) and outline Decommissioning Environmental Management Plan (ODEMP). These documents will set out the measures to be included within the Proposed Development so that damage to land, soils and groundwater can be minimised during the construction and decommissioning phases, resulting in land retaining its original quality and BMV status. Such measures will include:

- > All works will be in compliance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) regulations and works will be assessed by suitably qualified individuals during these phases in order to minimise impacts of the construction works on the soil.
- > Soil management during works will incorporate guidelines for soil handling, to include replacement of soil in temporary laydown areas.
- > During construction works, surface water drains should be designed to carry only uncontaminated water. Foul drains should carry contaminated water to a sewage treatment works under suitable discharge consent.
- > Concrete mixing would be undertaken in designated areas to minimise the potential for impact on watercourses.

8.11. Adherence to the requirements of the SRMP and ODEMP will be monitored by appropriately qualified personnel, including a soil scientist.

Scope of Assessment

Important Receptors Identified

8.12. The Site consists of primarily agricultural land and therefore agricultural land is considered to be the main receptor.

Likely Significant Effects Scoped Out from Detailed Assessment

8.13. Table 8-1 presents the elements which have been scoped out from the detailed assessment, as it is considered no likely significant effects will occur.

Table 8-1: Likely Significant Effects Scoped Out from the Land and Soil Detailed Assessment

Elements Scoped Out	Justification
Physical damage to the soil (operational phase).	There is likely to be limited trafficking and disturbance of soil during the operational phase of the Proposed Development and risk of soil damage is unlikely to occur. Therefore, this aspect will not be considered further within the EIA or reported in the ES.
Land and groundwater contamination (construction, operation and decommissioning stages).	<p>The Site history indicates that land use has been predominantly agricultural. There are no recorded current or historical landfill sites within the Site, the closest being at the High Marnham Power Station where waste was accepted between 1978 to 1994. There are no records of mineral extraction with the Site.</p> <p>Ground works associated with the construction of the Proposed Development will be managed by the good practice principles which will be outlined in a Construction Environmental Management Plan (CEMP). With the measures set out in the CEMP it is considered no likely significant effects will occur as a result of existing contamination and therefore it is proposed to exclude it from the scope of the EIA.</p> <p>Any issues relating to contamination resulting from project activities will be controlled by measures as set out in the SRMP and the ODEMP e.g., issues relating to storage and use of fuels and sediment runoff. The use of the measures set out in these documents will ensure that there will no likely significant effects. Therefore, this aspect will not be considered further within the EIA or reported in the ES.</p>

Likely Significant Effects Scoped into the Detailed Assessment

8.14. It is anticipated that the following effects would be considered as part of the assessment:

- > Reduction in soil quality (construction and decommissioning stages):

There is potential for construction activities to adversely impact upon soil quality, particularly small areas of land under solar farm infrastructure (small buildings, concreted areas etc.). All works will require careful management to ensure the protection and conservation of soil resources. Appropriate handling of soils during construction and decommissioning will be prescribed in the SRMP and ODEMP to ensure that physical damage to soils is minimised.

- > Loss of Best and Most Versatile agricultural land:

There is potential for works to adversely impact upon BMV land, downgrading it to non-BMV status, as a result of a reduction in quality of the land for agriculture. However, we would propose a soils management plan to ensure that this does not happen which will be included as a mitigation measure. It should be noted that no land will be permanently lost from agriculture as the scheme is temporary, albeit it is assumed that decommissioning will be at least 45 years in the future.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

- 8.15. A desk study of soils and climatic information will be undertaken using reference material held by ADAS and available online, followed by detailed fieldwork to study soil and site limitations. The fieldwork is being undertaken from October 2023, using a hand held 50mm diameter "Dutch" auger and/or spade to a maximum depth of 1.2m. In addition, soil pits will be excavated, to determine subsoil characteristics which could not be identified from the auger sample. The survey is anticipated to be completed in Q1 2024. Preliminary information will be reported in the PEIR to give consultees an opportunity to understand what likely significant effects may occur. The full results will be reported in the ES and will be presented in mapped and tabular form, identifying the distribution of lands of the various grades across the whole site and providing summary statistics on the relative occurrence of each grade.

Assessment of Impacts

- 8.16. The results of the survey work will be presented in the ES chapter and the impact in terms of land loss will be assessed in accordance with the magnitude and significance criteria presented below. Recommendations for mitigation will be presented as required and residual effects assessed accordingly.

Significance of Effects

- 8.17. The significance of impact on agricultural land will depend on the amount to be lost due to the Proposed Development. There is little current guidance on what area of loss is considered significant, however, 20ha is the threshold adopted in The Town and Country Planning (Development Management Procedure) (England) Order 2010 (as amended) for Local Planning Authorities to consult Natural England before granting planning permission for a non-agricultural development that is not consistent with an adopted local plan, which would involve the loss of Grades 1, 2 or 3a agricultural land. This threshold is taken into consideration in the assessment of the magnitude of impacts as shown in Table 1 below. The significance of effect is then determined by considering the magnitude of effect against the sensitivity of the receptor as shown in Tables 8-2 and 8-3 below. Effects above moderate level of significance are considered to be significant.
- 8.18. Where there is a permanent loss of over 20 ha or more of BMV agricultural land (i.e. through areas of enhancement), the effects will be considered as a potential significant adverse effect.

Table 8-2. Sensitivity of Receptor

Sensitivity	Characteristics*
High	Grades 1, 2 (best and most versatile agricultural land)
Medium	Sub-Grade 3a (best and most versatile agricultural land)
Low	Sub-Grade 3b, Grades 4, 5

*as informed by the ALC survey

Table 8-3. Magnitude of Impact

Magnitude	Area of Effect*
High	≥ 50 ha
Medium	20 – < 50 ha
Low	5 – < 20 ha

*as informed by the amount of land as classified in Table 8-1 within the Proposed Development

Table 8-4. Matrix for Determining Significance

Magnitude of Impact ^a	Sensitivity of Receptor ^b		
	High	Medium	Low
High	Very Large	Large	Moderate
Medium	Large	Moderate	Slight
Low	Moderate	Slight	Neutral
Negligible	Slight	Neutral	Neutral

^a as detailed in Table 8-2

^b as detailed in Table 8- 3

Construction and Decommissioning

- 8.19. An assessment of the construction and decommission phases of the Proposed Development on agricultural land will be undertaken taking account of the measures set out in the SRMP and ODEMP.

Operation

- 8.20. No additional mitigation measures will be expected to be required during the operation phase beyond the embedded mitigation incorporated into the design of the SRMP.

Assumptions, Limitations and Uncertainties

- 8.21. Only provisional ALC grades and BMV status data are available at this stage of the EIA process. Confirmation of agricultural land quality and BMV status will be confirmed by a detailed Agricultural Land Classification survey to be undertaken prior to the production of the PEIR/ES and inform the SRMP.

9. Buried Heritage

Introduction

- 9.1. This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Buried Heritage. Specially, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those buried heritage matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.

Review of Policy, Legislation and Relevant Guidance

- 9.2. Legislation, planning policy and guidance relating to buried heritage and pertinent to the Proposed Development comprises:

Legislation

- > Ancient Monuments and Archaeological Areas Act 1979 – Part I Ancient Monuments: Protection of Scheduled Monuments

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – specific reference to Part 5, Section 5.8 which relates to the historic environment;
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Section 5.9;
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) – specific reference to paragraph 3.3.8 and 3.10.98 - 3.10.110;
- > Draft National Policy Statement for Electricity Networks Infrastructure (EN- 5) (2023) – specific reference to paragraph 2.2.6; and
- > National Planning Policy Framework (2023) – specific reference to Section 16: Conserving and Enhancing the Historic Environment.

Local Planning Policy

- > Newark and Sherwood District Council, Local Development Framework, Allocations and Development Management, Development Plan Document (2013) – specifically Policy DM4 and DM9
- > Newark and Sherwood District Council (2019), Amended Core Strategy Development Plan – specifically Core Policy 14: Historic Environment.
- > Central Lincolnshire Local Plan (2023) – specifically Policy S57: The Historic Environment.
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – specific reference to Policy DM8: The Historic Environment.

- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023. Policy 43: Designated and Non-Designated Heritage Assets.

National Guidance

- > Planning Practice Guidance (2023) – Historic Environment (2019)
- > English Heritage (2008) Conservation Principles, Policies and Guidance
- > Historic England (2015) Managing Significance in Decision-Taking in the Historic Environment – Historic Environment Good Practice Advice in Planning: 1. The Historic Environment in Local Plans
- > Historic England (2015) Managing Significance in Decision-Taking in the Historic Environment – Historic Environment Good Practice Advice in Planning: 2. Historic England and Historic Environment Forum
- > Historic England (2017) The Setting of Heritage Assets – Historic Environment Good Practice Advice in Planning: 3. Historic England and Historic Environment Forum
- > Historic England (2020) Good Practice in Planning 4: Enabling Development and Heritage Assets
- > Historic England (2022) Planning and Archaeology: Historic England Advice Note 17

Baseline Conditions

Approach to Collection of Baseline Data

9.3. For the purposes of this Scoping Report the archaeological baseline conditions have been established using the following information:

- > Lincolnshire and Nottinghamshire Historic Environment Record (HER) Heritage Gateway (heritagegateway.org.uk);
- > British Geological Society data (geologyviewer.bgs.ac.uk);
- > Excavation summaries using the Archaeological Data Service (archaeologydataservice.ac.uk);
- > Geographical and basic topographical layout using Google Maps (www.google.co.uk/maps) and Light Detection And Ranging (LIDAR) imagery⁴⁸ (www.lidarfinder.com).

Relevant Baseline Conditions

9.4. As discussed in Chapter 2, the Site spans multiple fields, of mostly arable farmland, on either side of the River Trent which runs approximately north–south through the Site. The land rises to the east and west of the low-lying Trent floodplain which is more extensive on the River’s eastern bank. A sharper escarpment marks the eastern limit of the floodplain, which runs just to the west of North Clifton village.

⁴⁸ High resolution 3-D representation mapping of the Earth

- 9.5. The underlying bedrock geology of the Site is Mercia Mudstone throughout, however superficial (upper) geology varies. The floodplain either side of the Trent consists of alluvial clay, silt, sand and gravel deposits laid down up to 11.8 thousand years ago. Elsewhere, the superficial geology consists of Holme Pierrepont Sand and Gravel Member, laid down 2.5 million to 11.8 thousand years ago, Blown Sand deposits formed between 2.588 million years ago and the present, and further alluvial deposits alongside the Trent's tributaries, such as those along the Fledborough Beck in the western part of the Site.
- 9.6. The buried alluvial deposits along the River Trent have the archaeological potential to include the survival of palaeoenvironmental remains dating to the prehistoric Holocene (post ice age). This can include (and not limited to) waterlogged seeds, pollen, macro fossils along with sedimentological examination. They may also contain indicators of human activity and early landscape management. Human activity may also be present from the terrace gravels that flank the river in the form of flint tool or tool working remains. The HER contains reference to an assessment being undertaken in the early 1990s for the future management and preservation of archaeological and palaeoenvironmental remains along the Trent floodplain and gravel terraces.
- 9.7. The Site includes areas of known prehistoric settlement and activity. Excavations at Newton Cliff, just to the north of North Clifton within the Site, identified significant remains spanning the late Mesolithic to late Neolithic/early Bronze Age. Remains of a late Mesolithic structure, waste pits and flint tool production debris were uncovered along with evidence of a Neolithic structure and Bronze Age features including flintworking and cropmarks. These results could represent intermittent occupation, perhaps seasonal, during prehistory. Its position, on the drier escarpment overlooking the resource rich River Trent, would have made it an attractive location during the period.
- 9.8. Neolithic and Bronze Age flintworking, along with cropmarks of potentially contemporary enclosures, have also been identified in the south eastern part of the Site. Aerial photography and geophysical survey in the north eastern area of the Site has identified possible Iron Age enclosures visible as crop marks. Excavations on the southern part of the Site, close to South Clifton, as part of the Empingham to Hannington pipeline construction, uncovered settlements dating to the Iron Age and Roman periods as well as evidence of Saxon burials and cremations.
- 9.9. The most notable known Roman remains on the Site are those of the Vexillation Fortress and marching camps. This area is a protected Scheduled Monument (along with a Royal Monitoring Corps observation post, List Entry Number 1003608) and is located to the south west of Newton on Trent, on the eastern bank of the River Trent where the river bends sharply. The fortress dates from the 1st century AD, during the military conquest of Britannia by the Roman Army and forms a rare subset of Roman defensive sites. Excavations to the north of the fortress uncovered a number of 2nd century Romano-British kilns. The observation post, which forms part of the monument, was principally a Cold War era monitoring station for spotting enemy aircraft and reporting nuclear explosions and the resultant spread of radioactive fallout in the event of nuclear attack. It was in use between 1961 and 1991. A Roman Road was excavated just to the north of the Site (south of Dunham-on-Trent) and possible Roman settlement remains have been identified on aerial photographs to the south of the A57, within the central western part of the Site itself.

- 9.10. The north western part of the Site contains Whimpton Moor medieval village and moated site, which is also protected as a Scheduled Monument (List Entry Number 1017567). The monument includes the earthwork and buried remains of Whimpton Moor medieval village and the moated site. The earthworks represent former house platforms, boundaries, ponds, a moated dwelling and remains of ridge and furrow cultivation. Similar remains, of a shrunken medieval village, are known at Skegby Manor close to the south western edge of the Site. In and around the Site are active settlements with known Saxon or medieval origins such as Fledborough, South Clifton and High Marnham. Remnants of ridge and furrow cultivation have been noted as visible crop marks variously across the Site. Most of the Site likely continued as farmland into the post medieval period to the present day.
- 9.11. To summarise, the Site contains two Scheduled Monuments, dating from the Roman, medieval and modern periods. There are also multiple, non-designated archaeological assets, which date to the Mesolithic, Neolithic, Bronze Age, Iron Age, Roman, Saxon, Medieval and Post Medieval periods. Given the presence of these assets, the size of the Site and its undeveloped nature, there is a high potential that further, previously unknown remains survive.

Environmental Measures

- 9.12. The Proposed Development provides the opportunity to learn more about the archaeology of the Site and surrounding area. This will consist of work required prior to construction, including desk based and proportionate site investigations/excavations which will enhance the archaeological record of the area.
- 9.13. As shown in Appendix A, the Proposed Development will not include solar and associated infrastructure on the scheduled monuments. Design offsets will be included within the Proposed Development such that there will be no likely significant effects on the scheduled monuments. The details of the setbacks will be set out in the PEIR and will be consulted upon.
- 9.14. Such work also provides the opportunity for public engagement and outreach. The forms of engagement and outreach are numerous but may include site tours, media pieces such as news articles, local talks and online presentations, schools and college visits, site information boards, interpretive reconstruction/visualisation or app based digital and spatial information. The form of engagement/outreach will depend on the nature of the archaeological remains present but the principal aim will be, where possible, to engage as wide and diverse a population as possible on any archaeological findings.

Scope of Assessment

Important Receptors Identified

- 9.15. Potential receptors identified consist of below ground archaeological remains spanning from the Mesolithic period to the post medieval period. Receptors will potentially be affected by intrusive, below ground works of the Proposed Development. This will primarily occur during the construction phase. Receptors will not be affected during the operational phase.
- 9.16. The study area for the technical assessment will include the proposed Order Limits Area of the Site itself and an area extending out from the Site edge to be defined in consultation with the county HER officers.

Likely Significant Effects Scoped Out from Detailed Assessment

- 9.17. Table 9-1 presents the elements which have been scoped out from the detailed assessment, as it is considered no likely significant effects will occur.

Table 9-1: Likely Significant Effects Scoped out from the Buried Heritage Detailed Assessment

Elements Scoped Out	Justification
Operational Phase	It is anticipated the during operation (including maintenance) there will be no below ground works. Therefore, there will be no affect to archaeological receptors and as such there will be no likely significant effects to buried heritage.

Likely Significant Effects Scoped into the Detailed Assessment

- 9.18. All effects that may significantly impact upon potential archaeological remains within the Site will be scoped into the assessment. This will primarily consist of works that penetrate the ground surface as they have the potential to damage and/or remove archaeological deposits, features and finds. These will likely all occur during the construction phase and include activities such as (but not limited to) piling, excavation of service trenches, foundations or any other element, probing, coring, ground levelling, road construction, compound construction, below ground demolition. Conversely, draft NPS EN-3 recognises that “solar PV developments may have a positive effect, for example archaeological assets may be protected by a solar PV farm as the site is removed from regular ploughing and shoes or low-level piling is stipulated”, Other effects to be considered that may significantly impact upon archaeological receptors include ground loading and vibration.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

- 9.19. The technical assessment will consist of an Archaeological Desk Based Assessment (DBA) covering the whole Site utilising a pre-determined study area radius extending out from it. This will be compiled using a full HER data search and by analysing historic mapping, aerial photography, LIDAR, previous assessments and fieldwork reports along with consultation with the relevant Local Authority Archaeological Advisors. The DBA will help identify areas of the site with a higher archaeological potential, and those with a lower potential.
- 9.20. The archaeological ES chapter will be based on the DBA which will be included as a technical appendix within the ES.

Construction

- 9.21. It is anticipated that in advance of construction, assessment of the Site, further to that of the DBA, will be required in accordance with policy in NPS EN-1 and draft NPS EN-3 and where relevant the NPPF, Section 16 and the relevant local planning policies as referenced above. This further assessment will likely consist of physical investigations in areas of the Site that have been identified as having higher archaeological potential by the DBA and in consultation with the Local Authority Archaeological Advisors. Physical assessment may consist of the excavation of targeted trial trenches and/or geophysical survey.
- 9.22. If these field investigations identify significant archaeological remains, archaeological mitigation may be required prior to construction. This typically consists of archaeological excavation, recording and publication and would be secured as appropriate via a control mechanism or requirement in or secured through the draft DCO. In areas where highly significant remains are identified, preservation in situ may be required. No development is proposed within the Scheduled Monuments as per the Ancient Monuments and Archaeological Areas Act 1979.

Operation

- 9.23. As detailed in Table 9-2, it is not considered there will not be likely significant effects on archaeological receptors during the operational phase and an assessment has been scoped out.

Decommissioning

- 9.24. It is unlikely the decommissioning phase will result in any impact to archaeological receptors. It is however proposed that the Applicant will implement a Decommissioning and Environmental Management Plan (DEMP), which will be secured via a DCO requirement that will set out the measures in place to ensure, based on current understanding, there will be no likely significant effects to buried heritage. These details will be considered within the PEIR and ES.

10. Cultural Heritage

Introduction

- 10.1. This Chapter of the Scoping Report presents the scope of the environmental assessment for Cultural Heritage. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those cultural heritage matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.

Review of Policy, Legislation and Relevant Guidance

- 10.2. Legislation, planning policy and guidance relating to cultural heritage, and pertinent to the Proposed Development comprises:

Legislation

- Infrastructure Planning (Decisions) Regulations 2010 – specific reference to Regulation 3⁴⁹; and
- Planning (Listed Building and Conservation Areas) Act 1990 (excluding normal planning procedures, which are disapplied by the DCO, which if granted, would encompass all of the normal consents)⁵⁰.

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – specific reference to Part 5, Section 5.8 which relates to the historic environment;
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Section 5.9;
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) – specific reference to paragraph 3.3.8 and 3.10.98 - 3.10.110;
- > Draft National Policy Statement for Electricity Networks Infrastructure (EN- 5) (2023) – specific reference to paragraph 2.2.6; and
- > National Planning Policy Framework (2023) – specific reference to Section 16: Conserving and Enhancing the Historic Environment.

Local Planning Policy

- > Newark and Sherwood District Council (2013), Local Development Framework, Allocations and Development Management, Development Plan Document - specifically Policy DM4 and DM9

⁴⁹ Her Majesty's Stationary Office (2010) Infrastructure Planning (Decisions) Regulations 2010

⁵⁰ Her Majesty's Stationary Office (1990) Planning (Listed Buildings and Conservation Areas) Act

- > Newark and Sherwood District Council (2019), Amended Core Strategy Development Plan – specifically Core Policy 14: Historic Environment.
- > Central Lincolnshire Local Plan (2023) – specifically Policy S57: The Historic Environment.
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – specific reference to Policy DM8: The Historic Environment.
- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023. Policy 43: Designated and Non-Designated Heritage Assets.

National Guidance

- > Planning Practice Guidance (2023), Historic Environment (2019)
- > Historic England (2015), Managing Significance in Decision-Taking in the Historic Environment – Historic Environment Good Practice Advice in Planning: 1. The Historic Environment in Local Plans ('GPA2');
- > Historic England (2015) Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets, Second Edition ('GPA3');
- > Historic England (2021) Historic Environment Advice Note 15. Commercial Renewable Energy Development and the Historic Environment ('HEAN15', Historic England);
- > Historic England (2008) Conservation Principles, Policies and Guidance;
- > IEMA (2021) Principles of Cultural Heritage Impact Assessment⁵¹; and
- > UNESCO (2022) Guidance and Toolkit for Impact Assessments in a World Heritage Context⁵².

Baseline Conditions

Approach to Collection of Baseline Data

- 10.3. For the basis of the scoping report, the following sources have been utilised to define the baseline of the cultural heritage assessment:
- > National Heritage List for England (NHLE, Historic England) for data on nationally designated heritage assets;
 - > Nottinghamshire County Council Historic Environment Record (HER) for data on designated and non-designated heritage assets within Newark and Sherwood and Bassetlaw;

⁵¹ Available at: <https://www.iema.net/articles/principles-of-cultural-heritage-impact-assessment>

⁵² Available at: <https://whc.unesco.org/en/guidance-toolkit-impact-assessments/>

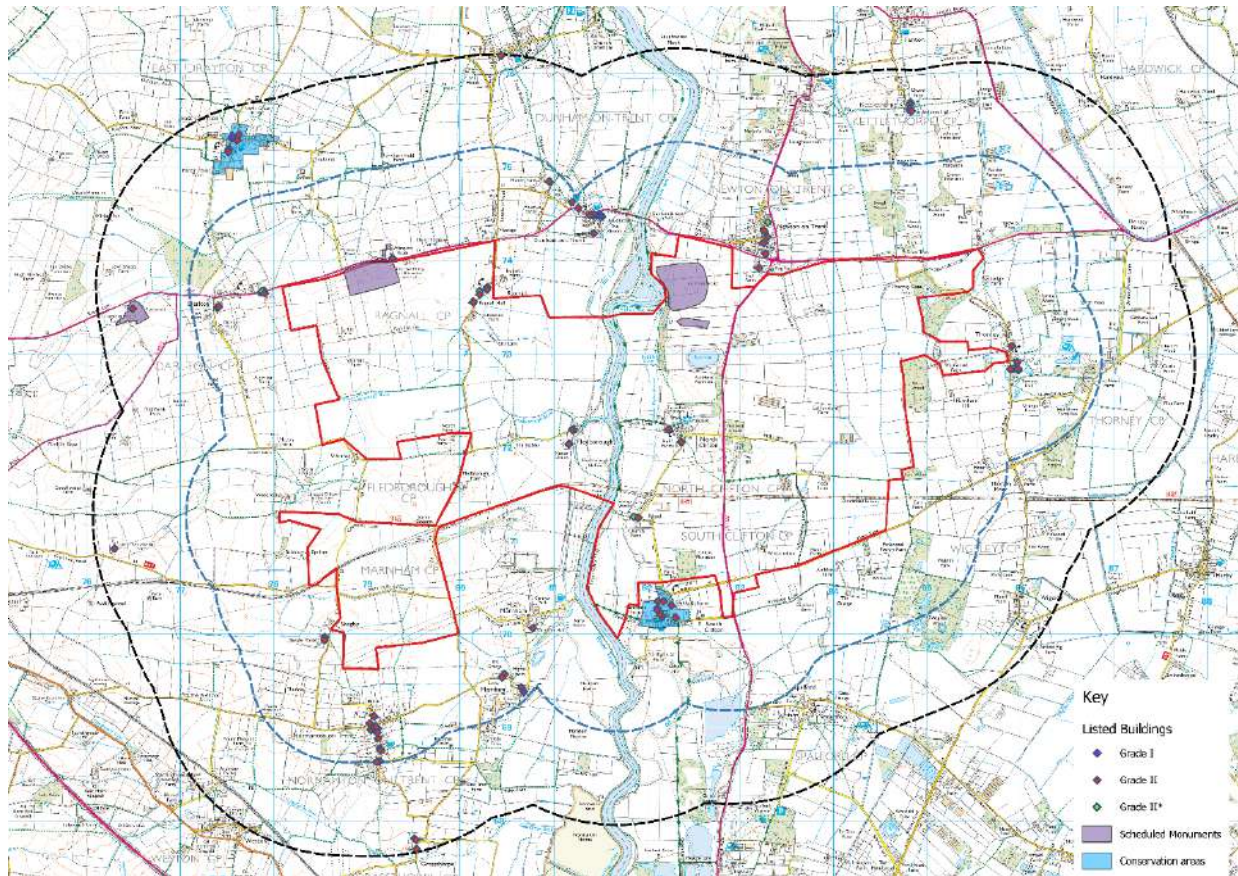
- > Bassetlaw's Database of Non Designated Heritage Assets (2019) and Unregistered Parks and Gardens (2017) for further information on non-designated heritage assets within Bassetlaw;
 - > Lincolnshire County Council Historic Environment Record (HER) for data on designated and non-designated heritage assets within West Lindsey;
 - > Historic cartography, including national Ordnance Survey maps and local 19th century Tithe Maps. These sources inform the baseline understanding on the historic representation of the current landscape and its uses.
- 10.4. There is an emerging requirement in Draft EN-1 (paragraph 5.9.9) to consider historic landscape character studies and so the following have also been reviewed:
- > Historic Landscape Characterisation Project for Lincolnshire (English Heritage and Lincolnshire County Council, 2011);
 - > Newark and Sherwood Landscape Character Study, Appendix R Landscape History (Newark and Sherwood District Council, 2013); and
 - > Bassetlaw Landscape Character Assessment (Bassetlaw District Council, 2009).
- 10.5. This research was supplemented by fieldwork undertaken in June 2023, including a site walkthrough and photographic recording.
- 10.6. A study area of 2km has been identified for built heritage assets. Within this study area, non-designated heritage assets ('NDHA') will be considered within a 1km radius only and a more selective approach will be taken to designated assets beyond 1km, subject to their significance, setting and nature of anticipated effects. This will allow for consideration of all built heritage assets whose significance and setting may be affected, albeit in a proportionate manner in line with NPS EN-1 paragraph 5.8.8.

Relevant Baseline Conditions

- 10.7. The relevant heritage assets have been mapped using GIS at Figure 10-1 and Figure 10-2.

Designated Heritage Assets

Figure 10-1: Designated Heritage Assets



Note: Redline shows the approximate site location. The blue line represents the 1km study area and the black line the 2km study area. Contains Ordnance Survey data © Crown copyright and database right 2023. Ordnance Survey licence number 100046099. Additional data sourced from third parties, including public sector information licensed under the Open Government Licence v1.0.

10.8. As discussed in Chapter 9, there are two Scheduled Monuments within the Site boundary:

- > Roman Vexillation Fortress, Two Roman Marching Camps and a Royal Observers Corps Monitoring Post, Newton on Trent (NHLE: 1003608); and
- > Whimpton Moor Medieval Village and Moated Site, Ragnall (NHLE: 1017567).

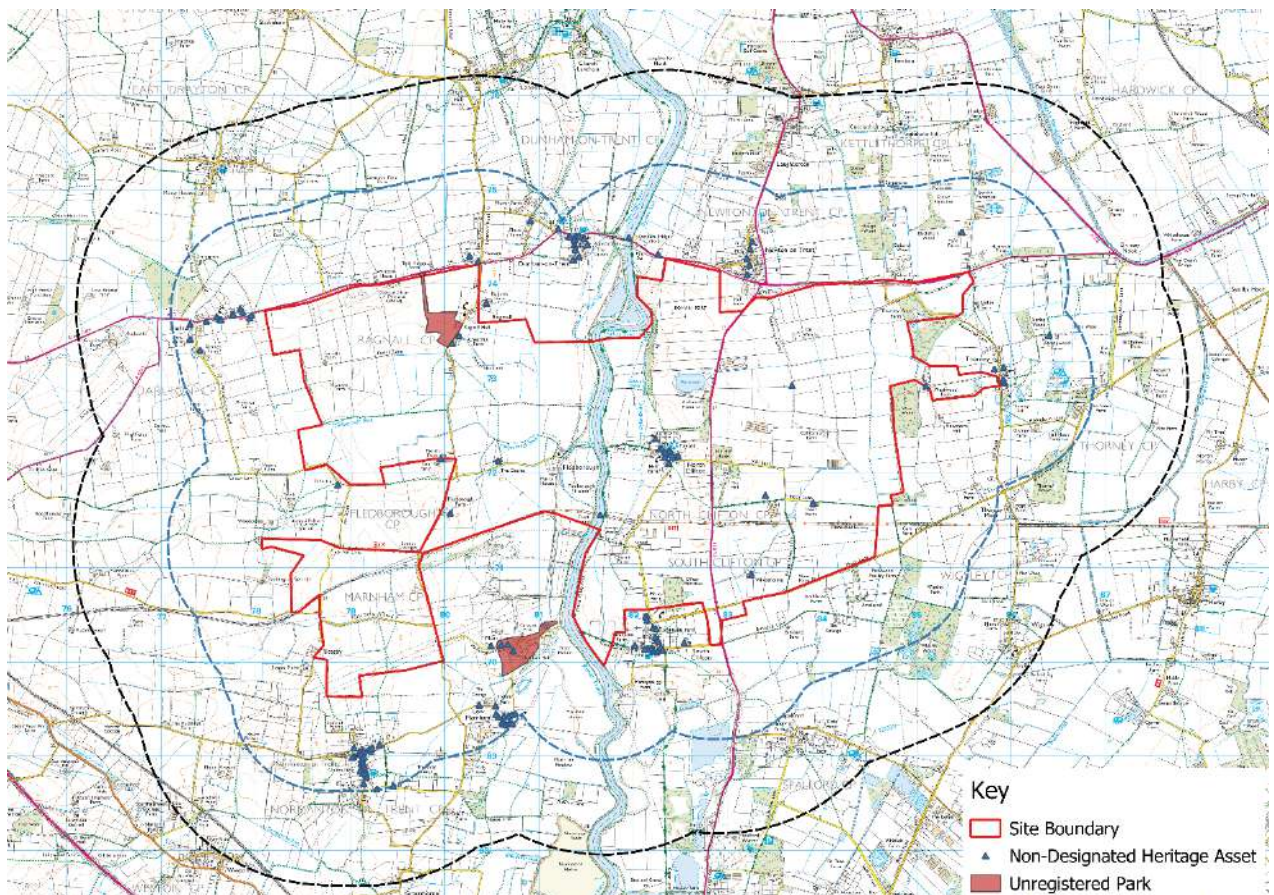
10.9. There are two further Scheduled Monuments within the 2km study area: Ringwork at Kingshaugh Farm, East Markham (NHLE: 1018619); and Cross in St Peter and St Paul's Churchyard, Kettlethorpe (NHLE: 1018289).

10.10. There are three Grade I listed buildings within the 1km study area: Church of St Gregory in Fledborough (NHLE: 1045689); Church of St Wilfred in Low Marnham (NHLE: 1276534); and Church of St Oswald in Dunham-on-Trent (NHLE: 1370101). There is one Grade I listed building in the 2km study area: Church of St Peter in East Drayton (NHLE: 1212946).

- 10.11. There are six Grade II* listed buildings within the 1km study area, all of which are churches, including: Church of St George in North and South Clifton (NHLE: 1046053); Church of St Leonard in Ragnall (NHLE: 1233804); Church of St Giles in Darlton (NHLE: 1212465); Church of St Helen in Thorney (NHLE: 1302452); Church of St Matthew in Normanton (NHLE: 1233792); and Church of St Peter in Newton-on-Trent (NHLE: 1064109). There is one Grade II* listed structure within the 2km study area: Gateway at Kettlethorpe Hall (NHLE: 1147172).
- 10.12. There are 61 Grade II listed buildings within the 1km study area, nearly all of which are collected within the settlements and are generally former farmhouses, halls and cottages. Amongst these, there are also three war memorials and several structures associated with churches (i.e. headstones and lychgates). There are fifteen Grade II listed buildings within the 2km study area.
- 10.13. There is a Conservation Area within the 1km study area, South Clifton, which contains eight of the Grade II listed buildings. There is one Conservation Area within the 2km study area, East Drayton, which contains the Grade I listed Church of St Peter and five of the Grade II listed buildings.

Non-Designated Heritage Assets

Figure 10-2: Non-Designated Heritage Assets



Note: Redline shows the approximate site location. The blue line represents the 1km study area and the black line the 2km study area. Contains Ordnance Survey data © Crown copyright and database right 2023. Ordnance Survey licence number 100046099. Additional data sourced from third parties, including public sector information licensed under the Open Government Licence v1.0.

10.14. There are 126 NDHAs (built heritage only) within a 1km study area, the largest of these being Fledborough Viaduct, which includes the sustran Routes and spans across the River Trent (running east / west) to the south of the Site (see Chapter 2 for details). In addition, there are 4 Unregistered Park & Gardens ('UPG'):

- > Marnham Hall: the grounds surrounding the Grade II listed Manor House, including two NDHAs, Barns at Hall Farm and Trent View Farm;
- > Ragnall Hall: the grounds of the Grade II listed Ragnall Hall and outbuildings, and former drive approach to north;
- > Grounds at The Hall: the former grounds of a now-lost Hall in North Clifton; and
- > Grounds at Thorney Hall: the grounds surrounding the non-designated Thorney Hall.

Environmental Measures

10.15. In a cultural heritage context, the key tests are to preserve or enhance the setting and significance (value) of heritage assets. Therefore, as set out in HEAN15, good design generally means avoiding direct permanent physical loss and mitigating potential harm to heritage assets and their settings by understanding and taking into account the key features which contribute to the value of heritage assets and their setting in the design, such as key views. In this case, design mitigation, such as the use of tactical landscaping and planting, also has the potential to reduce the visual influence of existing power infrastructure in the settings of heritage assets and therefore may lead to some localised enhancements in line with GPA3.

10.16. There is opportunity to increase the appreciation of the significance (value) of heritage assets by enhancing their public accessibility, interpretation and experience (see Chapter 9 for further details on Buried Heritage Environmental Measures). This may be particularly relevant for the Scheduled Monuments within the Site.

10.17. NPS EN-1 paragraph 5.8.18, Draft NPS EN-1 paragraph 5.9.20 and NPPF paragraphs 199-202 identify that any adverse effects to heritage assets should be weighed against the wider benefits of the application. As such, where adverse effects to heritage assets are unavoidable, opportunities will be sought to enhance the wider beneficial effects of the application in heritage terms.

Scope of Assessment

Important Receptors Identified

10.18. The following designated heritage assets are considered to have the potential to be affected by the Proposed Development:

- > Roman Vexillation Fortress (Scheduled Monument);
- > Whimpton Moor Medieval Village (Scheduled Monument);
- > Whimpton House (Grade II);
- > Church of St Leonard, Ragnall (Grade II*) and associated gateway (Grade II) - *these will be grouped for the purposes of assessment*;
- > Ragnall Hall and attached outbuildings (Grade II);

- > Ragnall House (Grade II) and Barn at Ragnall Stables (Grade II) - *these will be grouped for the purposes of assessment;*
 - > Church of St Gregory, Fledborough (Grade I) and associated Headstones (Grade II) - *these will be grouped for the purposes of assessment;*
 - > Manor House, Fledborough (Grade II);
 - > Church of St George, North and South Clifton (Grade II*) and Lychgate and Railings (Grade II) – *these will be grouped for the purposes of assessment;*
 - > Trent Lane Farmhouse, North Clifton (Grade II);
 - > Hall Farmhouse, North Clifton (Grade II);
 - > South Clifton Conservation Area and associated heritage assets within the Area (eight Grade II listed buildings and thirteen NDHAs) – *these will be grouped for the purposes of assessment;*
 - > Marnham Hall (Grade II);
 - > Hall Farmhouse, Newton on Trent (Grade II);
 - > Church of St Helen, Thorney (Grade II*);
 - > Firs Farmhouse (Grade II);
 - > Church of St Oswald, Dunham-on-Trent (Grade I);
 - > Church of St Giles, Darlton (Grade II*) ;
 - > Pigeoncote and Attached Stable Blocks and Outbuilding at Hall Farm, Darlton (Grade II);
 - > Skegby Manor (Grade II) and Pigeoncote at Skegby Manor (Grade II) - *these will be grouped for the purposes of assessment;*
 - > Church of St Matthew, Normanton (Grade II*);
 - > East Drayton Conservation Area and associated heritage assets, including the Church of St Peter (Grade I) - *these will be grouped for the purposes of assessment; and*
 - > Ringwork at Kingshaugh Farm (Scheduled Monument).
- 10.19. The following non-designated heritage assets (NDHAs) are considered to have the potential to be affected by the Proposed Development:
- > Ragnall Hall UPG;
 - > Marnham Hall UPG and associated NDHAs within it;
 - > Grounds at The Hall UPG;
 - > The Gables Farm Buildings, Fledborough;
 - > Top Farmhouse and Farm Buildings, Fledborough;

- > Fledborough House Farm Buildings;
- > Gibraltar Farm;
- > Grouping of 3 NDHAs in Ragnall - these will be grouped for the purposes of assessment;
- > The Old School, Laneham Road and the Vicarage, Darlton Road - these will be grouped for the purposes of assessment;
- > Police House, Darlton Road;
- > Grouping of ten NDHAs in North Clifton – these will be grouped for the purposes of assessment;
- > Wheatholme Farm;
- > Moor Barn Farm, Moor Lane;
- > Moor Farm Barn, Moor Lane;
- > Westwood Farm Barn, Thorney; and
- > The Vicarage, Thorney.

Likely Significant Effects Scoped Out from Detailed Assessment

10.20. Given the size of the scheme, a 1km study area for non-designated heritage assets and 2km study area for designated heritage assets is considered to be reasonable to ensure any potentially significant effects are understood. This will be agreed during consultation with Historic England and the relevant Local Planning Authorities. However, following on from fieldwork and an initial desk-based appraisal, it is possible to take a more nuanced and assessment-based approach to scoping. This draws on a high-level understanding of significance (value) and setting for the heritage assets identified within the study areas and scopes out those where the contribution of their settings to their significance (value) is unlikely to be significantly affected (in EIA terms).

10.21. As such, the following are proposed to be scoped out which will be agreed with Historic England and the relevant Local Planning Authorities via consultation:

- > The Cross in St Peter and St Paul’s Churchyard, Kettlethorpe, as this Scheduled Monument is best appreciated in its immediate village setting in relation to the Church and associated structures. The visual and perceptual separation from the Site means that this asset is unlikely to be affected by the Proposed Development.
- > All Grade II listed buildings outside of the 1km study area due to the nature of these assets being predominantly farm buildings where the contribution of their immediate rural settings would not be affected due to the distance from the Site (and in many cases, screening by intervening development or dense field boundaries). Otherwise, they are former halls, houses and cottages where their settings primarily relate to the settlement they are within (see below).

- > Heritage assets where their setting predominantly comprises their respective villages which either have a strong sense of enclosure or are separated from the Site by intervening development and/or landscape and so are unlikely to be affected. This applies to all Grade II listed heritage assets and NDHAs (except where otherwise specified above) in Thorney, Normanton on Trent, Darlton and Dunham-on-Trent.
- > All heritage assets in Newton-on-Trent and Kettlethorpe due to the eastern part of the A57 Dunham Road providing a strong perceptual and visual separation from the Site, as observed during fieldwork.
- > Heritage assets where power infrastructure is already very present in their wider settings and the further addition of solar panels and cable routes in their wider settings is unlikely to materially affect their significance (value), i.e. all heritage assets in Low Marnham. However, while heritage assets in High Marnham are in closer proximity to established power infrastructure, it is because of that proximity that the potential changing nature of this infrastructure (i.e. new cable routes) may materially affect their settings and so these assets are included in the assessment.

Likely Significant Effects Scoped into the Detailed Assessment

10.22. The following are considered to have the potential for likely significant effects taking into account the assets identified:

- > Visual effects to setting of heritage assets from introduction of solar panels and associated built infrastructure, such as BESS (see Chapter 3 for further details), including:
 - Long/open views of church towers, particularly views of Churches of St Gregory (Fledborough), St George (North/South Clifton) and St Leonard (Ragnall);
 - View corridors where the association between heritage assets is key (i.e.. Church of St George and South Clifton Conservation Area) or where heritage assets are appreciated from elevated positions (i.e. views from the Roman Vexillation Fortress Scheduled Monument or from Fledborough Viaduct).
- > Effects to the understanding of Scheduled Monuments within their settings (both visual and associative) for those within the Site boundary (Roman Vexillation Fortress and Whimpton Moor Medieval Village).
- > Effects to historic landscape character where it contributes to the setting of heritage assets. This includes the potential encroachment of historic farmland ownership and ‘industrialisation’ of rural settings (albeit noting that the landscape is already fairly industrial/power-focussed).
- > Increase of noise, dust and traffic movement associated with construction works which may be relevant where it affects the tranquillity or character of the setting of a heritage asset.

10.23. While NDHAs are relevant considerations under NPS EN-1, it is considered unlikely that effects to the settings of these will lead to significant effects in EIA terms due to their low value.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

- 10.24. Further desk-based and archival research is also planned to ensure a comprehensive understanding of the value and settings of identified built heritage assets. This will include detailed analysis of the Nottinghamshire and Lincolnshire Historic Environment Record data, relevant documentary records and historic aerial photography.
- 10.25. Further fieldwork in the form of a site walkovers and photographic recording will be undertaken in both summer and winter to fully understand any seasonal changes to settings and visibility.
- 10.26. A Zone of Theoretical Visibility prepared as part of the Landscape and Visual Impact Assessment (LVIA) will be used to assist with further scoping and understanding potential visual effects on identified heritage assets.
- 10.27. A final shortlist of assets requiring full detailed assessment and a selection of viewpoints for heritage-focussed photomontages to support the understanding of potential effects will be agreed with the relevant LPA Conservation Officers and Historic England.

Construction and Decommissioning

- 10.28. Under the requirements of NPS EN-1, the draft NPS' and NPPF, and of other useful relevant guidance, such as IEMA's Principles for Cultural Heritage Impact Assessment and Historic England's Good Practice Advice in Planning Notes (GPAs), the process of heritage impact assessments can be summarised as involving three parts:
- > Understanding the heritage values (significance) of identified designated and non-designated heritage assets and their settings;
 - > Understanding the nature and extent of potential effects to heritage values (significance) and settings of identified heritage assets; and
 - > Making a judgement on the impact that the proposals may have on heritage value (significance) and setting.

Value

- 10.29. NPS EN-1 defines a heritage asset as, '*Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called 'heritage assets'. A heritage asset may be any building, monument, site, place, area or landscape, or any combination of these. The sum of the heritage interests that a heritage asset holds is referred to as its significance'* (para 5.8.2). Heritage assets can be designated or non-designated. For the purposes of this assessment and to avoid conflict with the EIA use of the term 'significance', the heritage significance will be referred to as 'value'.
- 10.30. EN-1 requires the significance (value) of any heritage asset that may be affected by the Proposed Development to be identified and assessed (para 5.8.11-12). The methodology used here for understanding value draws from the approach set out in Historic England's 'Conservation Principles' and NPPF Annex 2 by identifying and describing the components which contribute to the heritage interests. In line with IEMA's 'Principles', the final part of understanding the value of a heritage asset is identifying its importance which is an informed professional judgement that can be scaled (as per table 1 at Appendix 2). This scale is informed by designation of an asset.

Assessing Effects

- 10.31. Legislative and policy requirements for the assessment of effects on heritage assets require the assessor to establish whether the value (heritage significance) is preserved, better revealed/enhanced or harmed as a result of new development.
- 10.32. There are two ways in which new development can affect heritage assets:
- > by physical changes to the fabric, use and visual appearance of designated or non-designated heritage assets (known as direct effects); and
 - > by changes to the setting of designated or non-designated heritage assets in the vicinity (known as indirect effects).
- 10.33. The approach to assessing the setting follows the staged approach set out in Historic England's GPA3 to assessing the setting of heritage assets.
- 10.34. The magnitude of change is a combination of (i) the size and scale of the potential change; and (ii) the duration of the change and its reversibility i.e. effects during the construction phase are likely to be temporary effects, whereas effects during operation would span for the duration of the development. At this stage, it is not proposed that any consent be limited, although the panels and associated infrastructure are inherently temporary and will eventually be removed. The magnitude of change can be high, medium, low or very low. The effects to heritage assets during the decommissioning phase are likely to be of a much lesser magnitude of change than construction effects as they would be temporary and would likely be returning to a baseline position by removing development from the setting of heritage assets.
- 10.35. The significance of the effects on heritage assets is established by combining judgements about the value of the receptors affected with the magnitude of the change, in order to identify the potential effect. For the purposes of EIA, major and moderate effects are considered to be significant effects.
- 10.36. Once the significance of the potential effect has been classified, consideration is given to the extent mitigation and/or enhancement has been achieved through design and whether the qualitative nature of the resultant effect is, therefore, 'beneficial', 'adverse' or 'neutral'.
- 10.37. Beneficial effects occur when the Proposed Development would enhance the significance (value) and contribution of the setting to significance of heritage assets, in line with Regulation 3 of the Infrastructure Planning (Decisions) Regulations 2010, NPS EN-1 (para 5.8.13) and NPPF (para.192).

- 10.38. Adverse effects occur when the Proposed Development would harm the setting or significance of heritage assets. Within NPS EN-1 (5.8.14) and the NPPF (paras.199-202), impacts affecting the value of heritage assets are considered in terms of harm, and there is a requirement to determine whether the level of harm to designated heritage assets amounts to 'substantial harm' or 'less than substantial harm'. There is no direct correlation between the classification of effect as reported in the ES and the level of harm caused to heritage value, however in general terms, major adverse may equate to substantial harm and moderate or minor adverse may equate to different levels on the spectrum of less-than-substantial harm. For any harm to non-designated heritage assets NPPF paragraph 203 requires balanced judgement with regard to scale of harm or loss and significance.
- 10.39. Neutral effects occur when the Proposed Development would: preserve (or not materially affect) the setting or significance of heritage assets; or where there is considered to be an equal balance between beneficial and adverse heritage effects.
- 10.40. Pursuant to NPS EN-1 (para 5.8.15), any harmful impact to the significance of a designated heritage asset should be weighed against the public benefits of the Scheme.

Operation

- 10.41. The same methodology will be used during both construction and operation (including maintenance) to assess potential effects. The only difference will be the nature of effects that will be assessed.

Assumptions, Limitations and Uncertainties

- 10.42. It is assumed that there will be some level of access to all identified heritage assets to fully understand their value and setting, particularly if not visible from publicly accessible vantage points. In the event that access is not available, professional judgement will be used, based on available research and data.

11. Landscape and Visual

Introduction

- 11.1. This Chapter of the Scoping Report presents the scope of detailed environmental assessment for landscape and visual matters. Landscape effects relate to changes to the landscape as a resource, including physical changes to the fabric or individual elements of the landscape, its aesthetic or perceptual qualities, and landscape character. Visual effects relate to changes to existing views of identified visual receptors (people), from the loss or addition of features within their view due to the construction, operational and decommissioning phases of the Proposed Development. For example, this may be residents, or people travelling on Public Rights of Way (PRoW).
- 11.2. This Chapter presents the policy and legislative context relevant to landscape and visual matters, the approach to collecting baseline data, and an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.
- 11.3. The Landscape and Visual Impact Assessment (LVIA) will be undertaken in accordance with the Guidelines for Landscape and Visual Impact Assessment, Third Edition, 2013⁵³ (GLVIA 3) and with reference to other environmental topics including Ecology and Cultural Heritage, along with other technical studies such as Glint and Glare Assessments and Arboricultural Assessments, if required.

Review of Policy, Legislation and Relevant Guidance

- 11.4. Legislation, planning policy and guidance relating to landscape and visual matters, and pertinent to the Scheme comprises:

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – specifically paragraphs 4.5.1 and Section 5.9
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Section 4.5 and Paragraphs 5.10.1
- > National Policy Statement for Renewable Energy Infrastructure (EN-3) (2011) – specifically paragraph 2.4.2
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) – in particular paragraphs 3.10.89 and 3.10.91
- > National Policy Statement for Electricity Networks Infrastructure (EN-5) (2011), I particular reference to the Horlock Rules in paragraph 2.9.18.

⁵³ Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, Third Edition. London: Landscape Institute

- > Draft National Policy Statement for Electricity Networks Infrastructure (EN- 5) (2023) - notably paragraph 2.2.5
- > National Planning Policy Framework (2023) in particular paragraph 130

Local Planning Policy

- > Newark and Sherwood District Council (2013), Local Development Framework, Allocations and Development Management, Development Plan Document - specifically Policy DM8
- > Newark and Sherwood District Council (2019), Amended Core Strategy Development Plan – specifically Core Policy 12 and 13.
- > Central Lincolnshire Local Plan (2023) – specifically
 - > Policy S14: Renewable Energy
 - > Policy S53: Design and Amenity.
 - > Policy S58: Protecting Lincoln, Gainsborough and Sleaford’s Setting and Character
 - > Policy S59: Green and Blue Infrastructure Network.
 - > Policy S60: Protecting Biodiversity and Geodiversity
 - > Policy S61: Biodiversity Opportunity and Delivering Measurable Net Gains
 - > Policy S.62: Area of Outstanding Natural Beauty and Areas of Great Landscape Value
 - > Policy S63: Green Wedge
 - > Policy S66: Trees, Woodland and Hedgerows
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies, including
 - > Policy DM4: Design & Character
 - > Policy DM9: Green Infrastructure; Biodiversity & Geodiversity; Landscape; Open Space & Sports Facilities
 - > Policy DM10: Renewable & Low Carbon Energy
- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023, including:
 - > Policy ST37: Landscape Character
 - > Policy ST38: Green Gaps
 - > Policy ST39: Green and Blue Infrastructure
 - > Policy ST40: Biodiversity and Geodiversity
 - > Policy 41: Trees, Woodlands and Hedgerows

> Policy 48: Protecting Amenity

National Guidance

- > Planning Practice Guidance (2019), Natural Environment, which sets out the benefits of landscape character assessments and the importance of considering green infrastructure in the early stages of schemes.
- > Planning Practice Guidance (2023), Renewable and Low Carbon Energy, which identifies several LVIA considerations, including visual impact, mitigation through screening and glint and glare.

Baseline Conditions

Approach to Collection of Baseline Data

- 11.5. For the purposes of the Scoping Report, landscape and visual baseline conditions have been established through a desk based review of published information, including Ordnance Survey (OS) maps, aerial imagery, topographical data, and published Landscape Character Assessments. An initial site walkover was undertaken in June 2023, has also informed this Scoping Report.
- 11.6. In accordance with GLVIA 3 the study area will include *“the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner”*. *GLVIA 3 explains that this will “usually be based on the extent of Landscape Character Areas likely to be significantly affected... [or be based] on the extent of the area from which the development is potentially visible... or a combination of the two”*.
- 11.7. GLVIA 3 sets out that, at the scoping stage, the Study Area will be preliminary and may change as more detailed analysis is undertaken, discussion with LPAs is progressed, and the design of the Proposed Development is developed. At this stage, taking account of the local topography and view distances to the Proposed Development, the preliminary LVIA study area extends up to 2km from the Site boundary to cover land broadly located between:
 - > East Drayton, Laneham, Laugherton and Kettlethorpe in the north;
 - > Fosdyke Navigation, Glover’s Wood and Thorney Brown Wood in the east;
 - > Spalford Warren and Grassthorpe in the south; and
 - > Weston and Darlton Gliding Club in the west.

Relevant Baseline Conditions

- 11.8. This section provides an overview of the landscape and visual features and characteristics across the preliminary Study Area.

Landscape Context

Landform and Hydrology

- 11.9. The River Trent flows through the centre of the preliminary LVIA study area from north to south. The river corridor marks the lowest point of the preliminary Study Area at approximately 5m Above Ordnance Datum (AOD). Land to the west rises gradually, with some minor fluctuations, to a local high point of 47m AOD, immediately south of Darlton Gliding Club on the western edge of the preliminary Study Area.
- 11.10. Land east of the River Trent is mostly level at a height of between 5m AOD and 10m AOD. Newton Cliff, a local high point at 23m AOD, is located towards the northern part of the Site, south of Newton on Trent. Clifton Hill, immediately south of South Clifton, also forms a local high point at 23m AOD.
- 11.11. Two watercourses, namely North Beck and Fosdyke Navigation, cross the northern part of the preliminary Study Area, connecting to the River Trent. Numerous field drains cross the Site and the wider preliminary Study Area.

Land Use, Infrastructure and Settlement

- 11.12. Land within the preliminary LVIA study area is mostly in arable agricultural use. Several chicken sheds are located close to the Site, east of the A1133.
- 11.13. Two A-roads cross the preliminary Study Area. The A57 crosses from east to west across the northern part, providing the only vehicular crossing over the River Trent within the study area via a toll bridge. The A1133 extends north and south from Newton on Trent, running parallel to the River Trent, approximately 1km to the east. Fledborough Road, which becomes Main Street, forms the main north / south route on the western side of the River Trent. A series of local roads cross the wider study area, connecting small hamlets and villages.
- 11.14. A large number of pylons and overhead lines cross the preliminary Study Area. A single line follows the eastern side of the River Trent from Cottam Power Station, located north of the preliminary Study Area. Two lines of pylons extend north / south on the western side of the River Trent, with a further three lines entering the preliminary Study Area from the south west. These lines converge at High Marnham substation.
- 11.15. Several villages are located across the preliminary Study Area. Ragnall, Fledborough, North Clifton and South Clifton are located close to the Site boundary. The following villages and hamlets are located outside of the Site and beyond the preliminary study area:
- > Laneham, Laughterton, Kettlethorpe, Dunham on Trent and Newton on Trent in the north;
 - > Thorney and Wigsley in the east;
 - > Spalford, High Marnham, Low Marnham and Normanton on Trent in the south; and
 - > Darlton in the west.
 - > Several isolated farmsteads are also located across the study area.
 - > Vegetation Patterns

11.16. A series of small to medium sized woodlands are located east of the River Trent, broadly between Kettlethorpe in the north and Wigsley in the south. This group of woodlands includes Fough Wood, Road Wood, West Wood, Thorney Brown and Wigsley Wood. Smaller blocks of woodland are located around the villages of North and South Clifton. There is no woodland on land west of the River Trent.

11.17. Occasional hedgerows form the boundaries to fields; however these are typically fragmented. Clumps of trees and scrub line the River Trent corridor, with notable concentrations of vegetation at the Trent Washlands Nature Reserve.

Public Rights of Way

11.18. The Trent Valley Way extends for 174km from Nottingham in the south, to the Humber Estuary. This long distance route follows the eastern edge of the River Trent through the preliminary Study Area.

11.19. National Cycle Route 647 follows a disused railway that crosses through the centre of the Site from east to west. The route is mostly elevated above the surrounding landscape and crosses the River Trent over the Fledborough viaduct.

11.20. Several footpaths and bridleways cross the Site, namely:

- > Darlton BW1
- > Ragnall FP1m FP2 and FP4
- > Fledborough FP7
- > Marnham FP4
- > NWoT 98/1 and 99/1
- > North Clifton FP1, FP3, FP4, BW11 and BOAT 12
- > South Clifton FP1, BOAT 13

11.21. A series of footpaths make up the PRow network across outside of the Site and beyond the preliminary Study Area.

Tranquillity

11.22. With reference to CPRE's Tranquillity Map⁵⁴, infrastructure corridors and settlements across the preliminary Study Area typically reduce the level of tranquillity. Areas not crossed by main roads are shown to be the most tranquil. This distribution was confirmed via the initial field work which found the preliminary Study Area to afford areas of tranquillity away from the A57 and A1133.

Designations

11.23. Neither the Site nor the preliminary Study Area are covered by any statutory or local landscape designations (i.e. National Parks or Areas of Outstanding Natural Beauty).

⁵⁴ https://www.cpre.org.uk/wp-content/uploads/2019/11/tranquillity_map_england_regional_boundaries_1.pdf

11.24. The village of South Clifton is designated as a Conservation Area and is located on the eastern Site boundary.

Landscape Character

Published Landscape Character Assessments and Related Studies

11.25. The preliminary Study Area and the Site are covered by several Landscape Character Assessments and related studies, as set out below. These documents will inform the landscape baseline and the iterative design process.

National level

11.26. At the national level, the Site is covered by Natural England's National Character Area 48: Trent and Belvoir Vales⁵⁵ (NCA 48).

County level

11.27. The western part of the study area is covered by the Nottinghamshire Landscape Character Assessment (2009)⁵⁶ which defines County Character Areas (CCAs). CCAs are sub-divided into Landscape Description Units (LDUs) which are then further divided into Landscape Character Parcels (LCPs). Draft Policy Zones (DPZs) are then defined, comprising LCPs which exhibit similar key characteristics.

11.28. The following areas from the Nottinghamshire Landscape Character Assessment are located within the preliminary Study Area:

> Newark and Sherwood:

- Trent Washlands CCA
 - River Meadowlands LDU
 - Trent Washlands 25 LCP
 - TW PZ 17: Besthorpe River Meadowlands DPZ
- East Nottinghamshire Sandlands CCA
 - Village Farmlands LDU
 - East Nottinghamshire Sandlands 30 LCP
 - ES PZ 01: North Clifton Village Farmlands DPZ
 - ES PZ 02: Wigsley Village Farmlands DPZ

> Bassetlaw:

- Trent Washlands CCA
 - LDU 274 and 415
 - Trent Washlands 28 LCP

⁵⁵ <https://publications.naturalengland.org.uk/publication/7030006?category=587130>

⁵⁶ <https://www.bassetlaw.gov.uk/planning-and-building/planning-services/planning-policy/core-strategy-and-development-policies/core-strategy-adopted-development-plan/submission-documents/landscape-character-assessments-study/>

- Trent Washlands 29 LCP
 - TW PZ 17 – Besthorpe River Meadowlands
 - TW PZ 18 – Low Marnham, Carlton and Sutton on Trent River
 - TW PZ 20 Dunham on Trent Village Farmlands
 - TW PZ 43 Grassthorpe River Meadowlands
 - TW PZ 44 Fledborough Holme River Meadowlands
 - TW PZ 45: Dunham Laneham River Meadowlands
- Mid Nottinghamshire Farmlands
 - LDU 105 and 127
 - MN 21 LCP
 - MN27 LCP
 - MN28 LCP
 - MN29 LCP
 - MN30 LCP
 - MN32 LCP
 - MN PZ 12: Normanton-on-Trent
 - MN PZ 09: East Drayton

11.29. The north eastern part of the preliminary study area is within West Lindsey. The West Lindsey Character Assessment⁵⁷, published in 1999, details the character of the landscape across the district.

11.30. The Trent Valley Landscape Character Area (LCA) falls within the Study Area.

Extent of Visibility

11.31. The combination of a relatively flat landform and typically low levels of vegetative cover result in an open landscape across much of the preliminary Study Area. The following section describes the typical extent of visibility experienced across the preliminary Study Area.

11.32. The height and extent of hedgerows and trees on the southern boundary of the A57 varies, resulting in some views being channelled along the road corridor, whilst other locations afford more open and long range views southward, towards the Site. Views of the Site from land north of the A57 are mostly screened by foreground vegetation and local undulations in topography.

⁵⁷ <https://www.west-lindsey.gov.uk/planning-building-control/planning/planning-policy/evidence-base-monitoring/landscape-character-assessment>

- 11.33. Land within the eastern part of the Site, and further east, includes areas of woodland, resulting in a more enclosed character, limiting the extent to which the Site is visible. Woodland located on, or in close proximity to, the Site boundary plays a particular role in limiting visibility, namely Road Wood, West Wood and Wigsley Wood.
- 11.34. Much of the disused railway, stretching across the preliminary Study Area from east to west, is flanked by mature trees and scrub vegetation. Parts of the route are also elevated on Fledborough viaduct. This combination typically truncates long northerly views of the Site, albeit parts of the Site located south of the route are visible in close range views from the local road network.
- 11.35. The landscape in the west of the preliminary Study Area is mostly flat and open, affording longer distance views across the Site from footpaths that cross open fields. Views from the local road network are typically truncated, or filtered, by hedgerows lining the network.

Environmental Measures

- 11.36. The Proposed Development will include new planting as part of the landscape design and mitigation strategy. This new planting presents the opportunity to contribute to a number of the Proposed Development’s Design Principles, in particular, there is an opportunity to:
- > Protect and improve the local environment: by strengthening the local green infrastructure network, by diversifying the range of species on Site and creating new vegetated corridors and connections across the landscape;
 - > Protect and enhance places of value: by designing mitigation planting to reduce the influence of existing power infrastructure on the character of the landscape; and
 - > Create new places of amenity and ecological value: by providing new multifunctional green assets that are accessible to the public, such as wetlands or areas for recreation.

Scope of Assessment

Important Receptors Identified

- 11.37. Table 11-1 sets out the potential landscape and visual receptors that have been identified across the 2km preliminary Study Area and which will therefore be considered in the LVIA.

Table 1 Landscape and Visual Receptors to be Scoped In

Receptor Group	Receptor	Notes
Landscape receptors		
National Character Areas	NCA 48: Trent and Belvoir Vales	N/A

Landscape Character Areas within Newark and Sherwood	<p>TW PZ 17 Besthorpe River Meadowlands</p> <p>ES PZ 01: North Clifton Village Farmlands</p> <p>ES PZ 02: Wigsley Village Farmlands</p>	<p>The Policy Zones defined within the character assessment provide the most detailed analysis of the landscape and guidance on its future management. It is therefore proposed that the Policy Zones are the most appropriate unit for assessment, however this will be agreed with Newark and Sherwood through consultation.</p>
Landscape Character Areas within Bassetlaw	<p>TW PZ 17 – Besthorpe River Meadowlands</p> <p>TW PZ 18 – Low Marnham, Carlton and Sutton on Trent River</p> <p>TW PZ 20 Dunham on Trent Village Farmlands</p> <p>TW PZ 43 Grassthorpe River Meadowlands</p> <p>TW PZ 44 Fledborough Holme River Meadowlands</p> <p>TW PZ 45: Dunham Laneham River Meadowlands</p> <p>MN PZ 12: Normanton-on-Trent</p> <p>MN PZ 09: East Drayton</p>	<p>The Policy Zones defined within the character assessment provide the most detailed analysis of the landscape and guidance on its future management. It is therefore proposed that the Policy Zones are the most appropriate unit for assessment, however this will be agreed with Bassetlaw through consultation.</p>
Landscape Character Areas within West Lindsey	Trent Valley LCA	N/A

Local Landscape Character Areas (LLCAs)

The scale and distribution of the LLCAs is to be defined through further desk based research and field work.

The scale, age and level of detail contained within the published landscape character assessments varies between local authorities. Local Landscape Character Areas (LLCAs) will therefore be defined to provide a consistent and up to date description of landscape character across the preliminary study area.

Visual receptors

Residents of villages

People living in the villages of: East Trayton, Darlton, Dunham on Trent, Ragnall, Fledborough, High Marnham, Normaton on Trent, Low Marnham, Spalford, South Clifton, North Clifton, Newton on Trent, Laughterton, Kettlethorpe, Thorney and Wigsley.

A range of representative viewpoints will be selected to record the visual amenity experienced from these villages. These will be identified following further field work. The number and distribution of the representative viewpoints will be agreed through consultation with the local authorities.

Residents of farmsteads/individual houses close to the Site

People living in: Laneham Field Farm, Farhill Farm, Vicarage Farm, America Farm, Fledborough Farm, Westwood Farm, The Gables, The Hall, Manor House, Moor Farm (north and south), The Grange, North Farm, Top Farm, Church Farm, 1 Collingham Road, and Station Cottages.

People living in dwellings fronting onto the A57, Vicarage Road.

A range of representative viewpoints will be selected to record the visual amenity experienced from these properties. These will be identified following further field work. The number and distribution of the representative viewpoints will be agreed through consultation with the local authorities.

<p>People travelling on the PRow network</p>	<p>People using the Trent Valley Way, such as walkers, cyclists and equestrian users, and people walking on local footpaths, including on Clifton Hill.</p>	<p>A range of representative viewpoints will be selected to record the visual amenity experienced from these PRow. These will be identified following further field work. The number and distribution of the representative viewpoints will be agreed through consultation with the local authorities.</p>
<p>People travelling on the local road network</p>	<p>People travelling on A57, A1133 and the local road network.</p>	<p>A range of representative viewpoints will be selected to record the visual amenity experienced from these roads. These will be identified following further field work. The number and distribution of the representative viewpoints will be agreed through consultation with the local authorities.</p>

Likely Significant Effects Scoped Out from Detailed Assessment

11.38. Table 11-2 presents the elements which have been scoped out from the detailed assessment, as it is considered no likely significant effects will occur.

Table 11-2: Likely Significant Effects Scoped out from the Landscape and Visual Detailed Assessment

Elements Scoped Out	Justification
<p>National and Local landscape designations</p>	<p>There are no national or local landscape designations across, or close to, the Site. National landscape designations are therefore scoped out of the LVIA.</p>
<p>Lighting</p>	<p>Any lighting during the construction and decommissioning phases will be directional, temporary and only used during working hours. When used, lighting will be designed to minimise potential for light spillage beyond the Site, particularly towards houses, roads and ecological habitats, in so far as it is reasonably practicable. These details, to ensure there are no likely significant effects, will be set out in the Construction Environmental Management Plan and Demolition Environmental Management Plan.</p>

During operation any lighting will be directed at infrastructure and only triggered by motion detection or manually during emergencies. As such, a quantitative lighting assessment is scoped out of the assessment. The effect of lighting will be considered as part of the Proposed Development, rather than as a stand alone assessment, and will therefore be included in the description of effects on landscape character and visual amenity.

11.39. No potential landscape or visual receptors located within the preliminary LVIA study area are proposed to be scoped out. Should it become apparent, through the design and assessment process, that there would be no potential for significant adverse landscape or visual effects on a receptor, the receptor will be scoped out, following consultation with the relevant LPA.

Likely Significant Effects Scoped into the Detailed Assessment

11.40. The Proposed Development has the potential to result in temporary significant adverse landscape effects during the construction phase, due to alterations to surface landform and vegetation from open agricultural land to built form, the presence of construction machinery, introduction of construction compounds and access routes, and associated reductions in tranquillity due to increased activity and noise. These aspects of the construction phase also have the potential to result in temporary significant adverse visual effects, due to the changes in the composition of views, in comparison to views of fields and general farming activity.

11.41. The Proposed Development has the potential to result in significant adverse landscape effects during operation due to the change in land use resulting from the presence and massing of the solar panels and associated structures, although the Proposed Development is reversible. Similarly, the Proposed Development has potential to result in significant adverse visual effects resulting from the introduction of solar panels and associated infrastructure into people's views.

11.42. The Proposed Development also has the potential to result in beneficial landscape and visual effects in the longer term, resulting from changes to land cover and new planting.

11.43. The decommissioning phase has the potential to result in significant adverse landscape and visual effects, similar to the construction phase, due to the presence of machinery and general activity to remove the panels and associated structures.

11.44. The LVIA will inform the iterative design process of the Proposed Development. Embedded design measures will be included to reduce significant effects, specifically with regard to the siting and layout of the solar panels and associated structures (taking account of the Glint and Glare Technical Assessment); as well as the colour and tone of associated structures to minimise their visibility and perceived scale in people's views.

11.45. The LVIA will also seek opportunities for new green infrastructure, including new planting and recreational access, to be embedded into the Proposed Development, connecting into the wider green infrastructure network.

11.46. The relevant landscape and visual measures will be set out in the LVIA.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

- 11.47. Further fieldwork will be undertaken in winter and summer conditions throughout the design and assessment process. The fieldwork will be informed by Zones of Theoretical Visibility (ZTV) mapping, which will model the key structures in the context of the local landform and surface features, such as buildings and vegetation.
- 11.48. The findings of the fieldwork and desk based analysis will be presented to the LPAs, seeking their agreement of the visual receptors who have potential to be impacted by the Proposed Development, and the locations of viewpoints that will represent their views.
- 11.49. Photography will be captured from each representative viewpoint in both summer and winter conditions, showing the effect of the seasons on the potential visibility of the Proposed Development. This photography will be undertaken in accordance with the methodology for Type 1 photographs as set out in the Landscape Institute's Technical Guidance Note 06/19 Visual Representation of Development Proposals.

Assessment methodology for Construction, Operation and Decommissioning

- 11.50. The LVIA will be undertaken in accordance with the following best practice guidance:
- > GLVIA;
 - > The Landscape Institute's Technical Guidance Note 02/21: Assessing Landscape Value Outside National Designations, 202158; and
 - > The Landscape Institute's Technical Guidance Note 06/19: Visual Representation of Development Proposals, 2019⁵⁹.
- 11.51. These publications form a standard reference for undertaking LVIA for renewable energy schemes in the UK.
- 11.52. The LVIA will also refer to:
- > An Approach to Landscape Character Assessment⁶⁰, by Natural England;
 - > Infrastructure Technical Guidance Note 04/2020⁶¹ by the Landscape Institute;

⁵⁸ <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2021/05/tgn-02-21-assessing-landscape-value-outside-national-designations.pdf>

⁵⁹ https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf

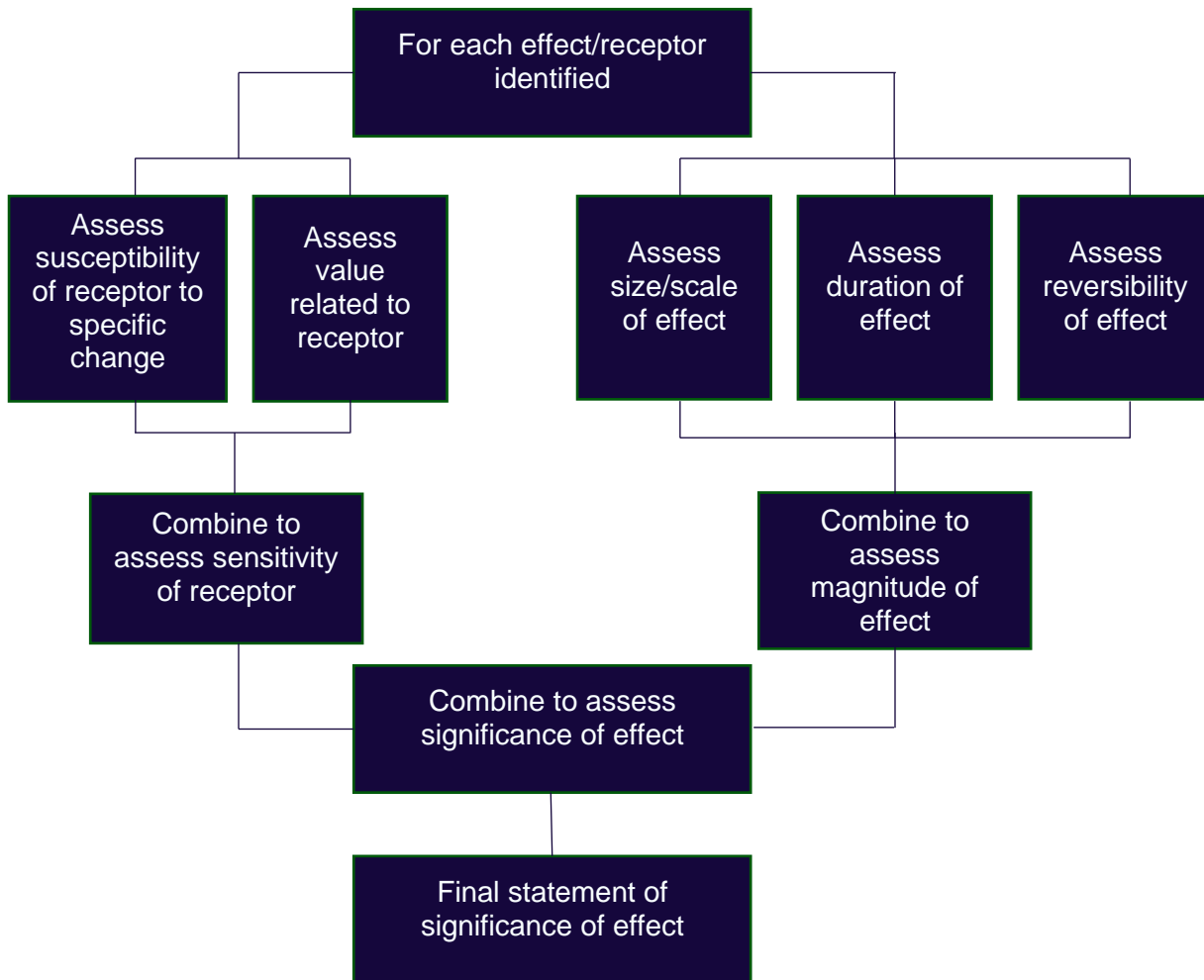
⁶⁰ <https://assets.publishing.service.gov.uk/media/5aabd31340f0b64ab4b7576e/landscape-character-assessment.pdf>

⁶¹ <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2018/01/LI-Infrastructure-TGN-FINAL-200924.pdf>

- > Tranquillity Technical Guidance Note 2017⁶² by the Landscape Institute; and
- > Technical Guidance Note 2/19: ‘Residential Visual Amenity Assessment’ (2019)⁶³ by the Landscape Institute.

11.53. The LVIA methodology will be presented to the LPAs to receive their comment and seek their agreement where possible. The methodology will reflect the process set out in Figure 3.5 of GLVIA3 as shown below:

Figure 11-1: Overview of LVIA Methodology



11.54. In accordance with the GLVIA 3 process, the LVIA methodology will include the following key stages:

⁶² <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2017/02/Tranquillity-An-Overview-1-DH.pdf>

⁶³ <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/03/tgn-02-2019-rvaa.pdf>

- > A baseline review of published landscape assessments, studies, relevant supporting evidence base documents, aerial photography, mapping and fieldwork to identify the landscape and visual baseline and receptors. These shall be presented to the LPAs to seek their agreement of the scope of the LVIA, including the extent of the study area.
- > An assessment of the sensitivity of landscape and visual receptors, based on an assessment of their respective value and susceptibility to change.
- > An assessment of the magnitude of impact resulting from the Proposed Development during construction, Year 1, Year 15 (to determine the likely significance effects of landscaping, taking account of vegetation maturity), and decommissioning. The assessment of magnitude of impact will consider the scale, duration, and reversibility of the impact. Short term durations are considered to be two years or less; medium term durations are considered to be between two and five years; and long-term durations are considered to be more than five years.
- > Combination of the receptor's sensitivity and the magnitude of impact experienced to determine the resultant level of effect.
- > An assessment of the significance of the effect to the landscape and visual receptors identified. It is proposed that effects judged to be moderate and major will be considered to be significant.
- > The LVIA will review the Glint and Glare Assessment to include consideration of how glint and / or glare impacts might contribute to landscape or visual effects.
- > The LVIA will assess the potential visual effects to different types of visual receptor, including residential receptors, i.e. private views (albeit assessed from publicly accessible locations). In the event that the visual assessment identifies major adverse effects on residents at year 15 of operation (i.e. major adverse visual effects that have not been mitigated), a Residential Visual Amenity Assessment will be undertaken in line with the Landscape Institute's Technical Guidance Note 2/19: 'Residential Visual Amenity Assessment. However as discussed in the Environmental Measures, the impact of the Proposed Development on visual receptors have been considered at the design stages, in order to avoid likely significant effects.

Assumptions, Limitations and Uncertainties

11.55. All fieldwork will be undertaken from publicly accessible locations. Professional judgement will be used to assess residents' views, aided by aerial photography and fieldwork observations.

11.56. For the construction phase assessment, a reasonable worst case approach will be undertaken, which is assumed construction activity will occur in winter and will be undertaken across the Site at the same time. In reality, it is likely works will be undertaken sequentially and construction in some plots is likely to be complete whilst others are on-going. PRoW which cross the Site boundary will be kept open or temporarily closed for short periods of time only, and therefore recreational receptors along these routes will be assessed for the construction phase.

- 11.57. For the year 1 operational assessment, the assumption is that the Proposed Development will be operational in winter conditions. This represents a reasonable worst case assessment. The year 15 assessment will assume summer conditions and the establishment of planting included in the landscape design. This represents an assessment of the completed and operational development.
- 11.58. For the decommissioning assessment, the assumptions are the Scheme is no longer operational, and the solar panels and associated structures and equipment are being removed in a manner similar to the construction phase, requiring machinery and localised excavation.

12. Transport and Access

Introduction

- 12.1. This Chapter of the Scoping Report presents the scope of the environmental assessment for Transport and Access. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, the transport and access matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.
- 12.2. The Transport and Access Chapter will be supported by a standalone Transport Assessment report and technical figures.
- 12.3. The key issues for consideration as part of the assessment will be:
- > The temporary change in traffic flows and the resultant, temporary effects on the road network within the Study Area during the construction phase;
 - > The design of any new access infrastructure; and
 - > The consideration of appropriate and practical mitigation measures to offset any temporary effects during the construction phase.
- 12.4. During operation there will be limited number of transport trips to the Proposed Development, limited to maintenance of the solar infrastructure. As such the assessment will consider the effects on transport link users and residents during the construction and decommissioning phases only.

Review of Policy, Legislation and Relevant Guidance

- 12.5. Legislation, planning policy and guidance relating to transport and access, and pertinent to the Proposed Development comprises:

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) - specific reference to Part 5, Section 5.13 which relates to traffic and transport;
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Section 5.14;
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) – specific reference to paragraph 3.10.111 to 30.10.117 and 3.10.130 to 30.10.135
- > National Planning Policy Framework (2023) – specific reference in particular Section 9.

Local Planning Policy

- > Newark and Sherwood District Council (2013), Local Development Framework, Allocations and Development Management, Development Plan Document - specifically Policy DM5

- > Central Lincolnshire Local Plan (2023) – specifically Policy S47: Accessibility and Transport
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – specific reference to DM13: Sustainable Transport
- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023. Policy ST51: Renewable Energy Generation and Policy S54: Transport Infrastructure
- > Lincolnshire County Council (2021) Local Transport Plan 5.
- > Nottinghamshire County Council (2011) Nottinghamshire Local Transport Plan 2011 - 2026

National Guidance

- > National Highways (2020) Design Manual for Roads & Bridges (DMRB);
- > Planning Practice Guidance (2014) “Travel Plans, Transport Assessments and Statements”;
- > Institute of Environmental Assessment (IEA) (1993), The Guidelines for the Environmental Assessment of Road Traffic; and
- > Institute of Environmental Management and Assessment (IEMA) (2023) Environmental Assessment of Traffic and Movement.

Local Guidance

- > Nottinghamshire County Council (2021) The Nottinghamshire Highway Design Guide.

Baseline Conditions

Approach to Collection of Baseline Data

- 12.6. For the purposes of this scoping report the baseline conditions have been established by carrying out a review of Lincolnshire and Nottinghamshire County Council’s local authority websites relating to existing transport infrastructure and a review of current geographical information.

Relevant Baseline Conditions

- 12.7. In terms of the Strategic Road Network (SRN), the A1 which connects Blyth to the north and to Stamford in the south, is located approximately 8km to the east from the centre of the Site. The A1 forms a junction with the A57, which connects Markham Moor to Lincoln. The A57 is located on the northern boundary, approximately 2.5km from the centre of the Site. The A57 runs eastwards before forming a junction with the A46 to the east of the Site. The A1133 is located within the eastern part of the Site, approximately 1.5km to the east from the centre of the Site, and connects Torksey Lock with Winthorpe, where it then joins the A46.

- 12.8. The Trent Valley Way extends for 174km from Nottingham in the south, to the Humber Estuary. This long-distance footpath route follows the eastern edge of the River Trent as it runs through the Site. In addition, there are several footpaths and bridleways that cross the Site.
- 12.9. Located within the Site and approximately 500m south of the centre of the Site, is the Sustrans Cycle Route 647. This path is part of the National Cycle Network (NCN) and is a disused railway line associated with the former Lancashire, Derbyshire and East Coast Railway, which runs east-west and that connected Lincoln to the east with Tuxford to the west. Crossing over the River Trent, the Sustrans Route includes Fledborough Viaduct consisting of masonry arches. This is one of a few river crossing opportunities in the locality.
- 12.10. There are no railway stations located within 5km from the centre of the Site. There are several local bus services within Tuxford, Sutton on Trent and North Scarle, these provide limited opportunities for travel to and from the Site.

Environmental Measures

- 12.11. It is considered that enhancements to existing PRow and the inclusion of permitted paths could be delivered as part of the Proposed Development. Traffic impacts of the Proposed Development are temporary in nature, and limited to the construction of the Proposed Development, and as such, the Applicant is not currently proposing further transport enhancements.
- 12.12. As discussed in Chapter 5, the Proposed Development will include the production of a CTMP, this will include details on construction logistics and worker travel plans to reduce any adverse likely significant effects from the generation of construction traffic. In addition, the DCO application will also be supported by a Framework Abnormal Load Transport Management Plan which will set out the traffic management for large loads.
- 12.13. Where access is required, the Proposed Development will ensure the design includes suitable access arrangements with full consideration given to the road safety of all road users.

Scope of Assessment

- 12.14. The extent of the study area will be developed from the likely origin and destination points for construction staff and materials. The exact site access junction details have yet to be finalised, however the access strategy is based upon the need to avoid traffic causing unnecessary disruption and distress to sensitive receptors and communities.
- 12.15. The western portion of the Proposed Development will be accessed from the A57 to the north, providing connections to Main Street, bypassing Ragnall. The eastern portions will be accessed from A1133 also from the north.
- 12.16. Locally sourced material will be used where feasible and traffic will avoid impacting on local communities as far is possible. It is proposed to ensure that minimal traffic passes from one side of the site to the other via Dunham, over the Dunham Toll Bridge.

Important Receptors Identified

- 12.17. As above, the assessment will consider the effects on transport link users and residents within the Study Area during the construction and decommissioning phases only.

12.18. The study area is based upon proposed construction routes for material deliveries and will include the following road links:

- > A57 between its junction with the A1 at Markham Moor and the A46 at Lincoln;
- > A1133 between its junction with the A57 and Collingham;
- > Main Street, between its junction with the A57 and Low Marnham;
- > Polly Taylor Road, between its junction with Main Street and its junction with Skegby Road; and
- > Crabtree Lane / Skegby Road between Skegby and the proposed western site access junction.

12.19. Construction traffic will include staff and material deliveries to and from the Proposed Development. The greatest concentration will occur at the Site access junctions.

Likely Significant Effects Scoped Out from Detailed Assessment

12.20. The operational phase will result in occasional traffic maintaining the solar arrays and BESS. The traffic associated with this phase will be insufficient to trigger the 30% threshold for assessment a set out in the Institute of Environmental Management and Assessment (IEMA) guidance (discussed further below) and as such, it is proposed that this phase can be scoped out of the assessment.

Likely Significant Effects Scoped into the Detailed Assessment

12.21. As above the assessment will consider the effects during the construction and decommissioning phases only. The following receptors will be considered in the assessment:

- > Users of the A57;
- > Users of the A1133;
- > Users of the local road network;
- > Residents of Darlton, along the A57 corridor;
- > Residents of Dunham on Trent, along the A57 corridor;
- > Residents of Newton on Trent, along the A57 corridor;
- > Residents of Ragnall; and
- > Residents living alongside the local road network.

12.22. These will be confirmed once the construction traffic impact review has been undertaken.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

12.23. Data for use in the assessment will include the following desk top sources:

- > Active travel data from OS mapping, Lincolnshire CC PRow Interactive map, Nottinghamshire County Council PRow map and the Sustrans National Cycle Route (NCR) map;
- > The online accident statistics database Crashmap.co.uk;
- > Online public transport timetables for services operating on the study area roads;
- > Department for Transport (DfT) traffic count data for the study area network; and
- > Aerial photography, OS mapping and other map data sources.

12.24. Further traffic flow information will be obtained from new Automatic Traffic Count (ATC) surveys undertaken at various locations within the Study Area, to help determine overall traffic flows in the area and at sensitive locations.

12.25. The baseline traffic survey information obtained from the DfT or new traffic surveys will be factored using Low National Road Traffic Forecast (NRTF) Low growth assumptions to develop a future year baseline traffic flow for use in the assessment.

Approach to Assessment

12.26. The assessment would be undertaken in accordance with the Institute of Environmental Management and Assessment (IEMA) Environmental Assessment of Traffic and Movement (2023).

12.27. This guidance notes two rules to be used as a screening process to identify the appropriate extent of the assessment area and likelihood of impacts. These are:

- > Rule 1 - Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- > Rule 2 – Include highway links of high sensitivity where traffic flows have increased by 10% or more.

12.28. Where the predicted increase in traffic flow is lower than these thresholds, then the impact is considered insignificant and as such, no further assessments are required.

12.29. Where construction traffic flows meet or exceed these thresholds, the significance of traffic and transport effects (including any cumulative development) will be determined by assessing the sensitivity of receptors against the magnitude of change to categorise significance as Major, Moderate, Minor or Negligible (see Table 12-1).

12.30. The scope to the Transport Assessment will depend upon the anticipated number of construction trips. The approach will be agreed in consultation with the relevant authorities.

12.31. Where large scale High Voltage (HV) component loads are required for the electrical grid connection, these will be delivered as Abnormal Indivisible Loads (AIL). Detailed swept path analyses will be undertaken for the main constraint points on the route from the nearest suitable trunk road junction through to the proposed substation access junction to demonstrate that components can be delivered to Site and to identify any temporary road works which may be necessary. A Route Survey Report describing the route and the proposed operational management of the deliveries will be submitted in support of the application.

Construction and Decommissioning

12.32. The Institute of Environmental Management and Assessment (IEMA) Environmental Assessment of Traffic and Movement (2023) will be used to characterise the environmental traffic and transport effects (off-site effects) and the assessment of significance of major new developments. The guidelines are intended to complement professional judgement and the experience of trained assessors.

12.33. In terms of traffic and transport impacts, the receptors are the users of the roads within the study area and the locations through which those roads pass.

12.34. The sensitivity of receptors is detailed in the following summary table.

Table 12-1 Classification of Receptor Sensitivity

Sensitivity of Receptor	Road User Definition
High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.
Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures.
Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures.
Negligible	Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads and new strategic trunk road junctions capable of accommodating Abnormal Loads.

Sensitivity of Receptor	Criteria for Residents / Locations
High	Where a location is a large rural settlement containing a high number of community and public services and facilities.
Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Low	Where a location is a small rural settlement, few community or public facilities or services.

Sensitivity of Receptor	Criteria for Residents / Locations
Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.

12.35. The IEMA Guidelines identify the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development. The impacts and levels of magnitude are discussed below:

- > Severance – the IEMA Guidance advises that, “The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.” (Para 3.16). The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that “*the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.*” (Para 3.17).
- > Driver delay – the IEMA Guidelines note that these delays are only likely to be “*significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system*” (Para 3.20).
- > Pedestrian delay (incorporating delay to all non-motorised users) – the IEMA Guidance advises that “pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site.” (Para 3.24). Furthermore, the guidance advises that “*...it is not considered wise to set down definitive thresholds. Instead it is recommended that the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect.*” (Para 3.26).
- > Non-motorised user amenity – the IEMA Guidance advises that, “*The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law.*” (Para 3.30).

- > Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the guidelines. (Para 2.19). As such, this has been used to assess the potential impacts associated with construction activities around fear and intimidation on people in close proximity to the proposed development.
- > Road safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidance, those areas of collision clusters would be subject to detailed review.
- > Road safety audits – it would be proposed to undertake any necessary Road Safety Audits (RSA) post consent and it is considered that this can be secured via a planning condition.
- > Large loads – the movement of the AILs associated with the construction of the Proposed Development will be considered in full, within a separate route survey assessment, which identifies physical mitigation measures required to accommodate the predicted loads. Additional mitigation in terms of addressing potential impacts on sensitive receptors are included as standard within Section 11.7 Mitigation.

12.36. While not specifically identified, as more vulnerable road user, cyclists are considered in similar terms to pedestrians.

12.37. The significance of effects are determined using the following matrix in Table 12-2.

Table 12-2 Significance Criteria

		Magnitude of Change			
		High	Medium	Low	Negligible
Receptor Sensitivity	High	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible

Assumptions, Limitations and Uncertainties

12.38. The assessment of construction traffic will assume the use of standard construction techniques commensurate for the type of works being undertaken. The final techniques, plant selection and programme are expected to be determined by the appointed contractor, in consultation with relevant authorities prior to commencement of construction.

13. Air Quality

Introduction

- 13.1. This Chapter of the Scoping Report presents the scope of the environmental assessment for Air Quality. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.
- 13.2. The Proposed Development will lead to temporary emissions of dust from the construction, which could impact on local amenity, the health of local residents and sensitive ecological sites. During construction and operation there will also be emissions associated with increased road traffic movements, which could also affect health and ecological sites. The principal pollutants of concern from road traffic sources are nitrogen dioxide (NO₂), and particulate matter (PM₁₀ and PM_{2.5}).
- 13.3. Human health issues related to air quality will be considered in the Health Section of the Environmental Statement, with the proposed scope for Human Health found in Chapter 16.

Review of Policy, Legislation and Relevant Guidance

- 13.4. Legislation, planning policy and guidance relating to air quality, and pertinent to the Proposed Development comprises:

Legislation

- > EU Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe;
- > The Environmental Protection Act (1990);
- > Part IV of the Environment Act (1995);
- > The Clean Air Act (1993);
- > The Air Quality (England) Regulations (2000);
- > The Air Quality (England) (Amendment) Regulations (2002); and
- > The Air Quality Standards Regulations (2010).

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – specific reference to Part 5, Section 5.2 which relates to air quality and emissions;
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Section 5.2; and

- > National Planning Policy Framework (2023) – specific reference to Section 15: Conserving and Enhancing the Natural Environment.
- > The Environment Act 2021 (2021);
- > Environmental Improvement Plan (2023).
- > National Planning Policy Framework (2021);
- > Clean Air Strategy (2019);
- > Air Quality Strategy (2007);
- > Air Quality Strategy (2023);
- > The Environmental Targets (Fine Particulate Matter) (England) Regulations 2022
- > Reducing Emissions from Road Transport: Road to Zero Strategy (2017); and
- > National Air Quality Plan (2017)⁶⁴ and Supplement (2018).

Local Planning Policy

- > Newark and Sherwood District Council (2013), Local Development Framework, Allocations and Development Management, Development Plan Document - specifically Policy DM10
- > Central Lincolnshire Local Plan (2023) – specifically Policy S14 and Policy S53
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – specific reference to Policy DM10: Renewable and Low Carbon Energy.
- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023. Policy ST51: Renewable Energy Generation

National Guidance

- > Planning Practice Guidance (2023), Air Quality (2019)
- > Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM) Guidance: Land-Use Planning & Development Control: Planning for Air Quality (2017);
- > IAQM Guidance on the Assessment of Dust from Demolition and Construction (2016); and
- > Defra Local Air Quality Management Technical Guidance (TG(22)) (2022).

⁶⁴ Defra (2017) Air quality plan for nitrogen dioxide (NO₂) in the UK, Available: <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>.

Baseline Conditions

Approach to Collection of Baseline Data

- 13.5. For the purposes of the scoping report, air quality baseline conditions have been established using a number of approaches:
- > Industrial and waste management sources that may affect the area have been identified using Defra's Pollutant Release and Transfer Register⁶⁵;
 - > Information on existing air quality has been obtained by collating the results of monitoring carried out by three local authorities;
 - > Background concentrations have been defined using 2023 Defra's 2018-based background maps⁶⁶. These cover the whole of the UK on a 1x1 km grid and are intended to be representative of air quality conditions away from major roads or other significant sources of emissions; and
 - > Whether or not there are any exceedances of the annual mean limit value for NO₂ in the study area has been identified using the maps of roadside concentrations published by Defra⁶⁷ ⁶⁸. These are the maps used by the UK Government, together with the results from national Automatic Urban and Rural Network (AURN) monitoring sites that operate to the required data quality standards, to identify and report exceedances of the limit value. The national maps of roadside PM₁₀ and PM_{2.5} concentrations⁶⁸, which are available for the years 2009 to 2019, show no exceedances of the limit values anywhere in the UK in 2019.
- 13.6. With regards to the PM_{2.5} targets, in March 2023, the Department for Levelling Up, Housing and Communities (DLUHC, 2023) explained that the new PM_{2.5} targets will:
- “need to be integrated into the planning system, and in setting out planning guidance for local authorities and businesses, we will consider the specific characteristics of PM_{2.5}. The guidance will be forthcoming in due course, until then we expect local authorities to continue to assess local air quality impacts in accordance with existing guidance.”*
- 13.7. For the time being, therefore, no assessment is required, and indeed no robust assessment is possible, in relation to the new PM_{2.5} targets and they are not considered further.

⁶⁵ Defra (2023) UK Pollutant Release and Transfer Register, Available: <http://prtr.defra.gov.uk/map-search>.

⁶⁶ Defra (2023) Local Air Quality Management (LAQM) Support Website, Available: <http://laqm.defra.gov.uk/>.

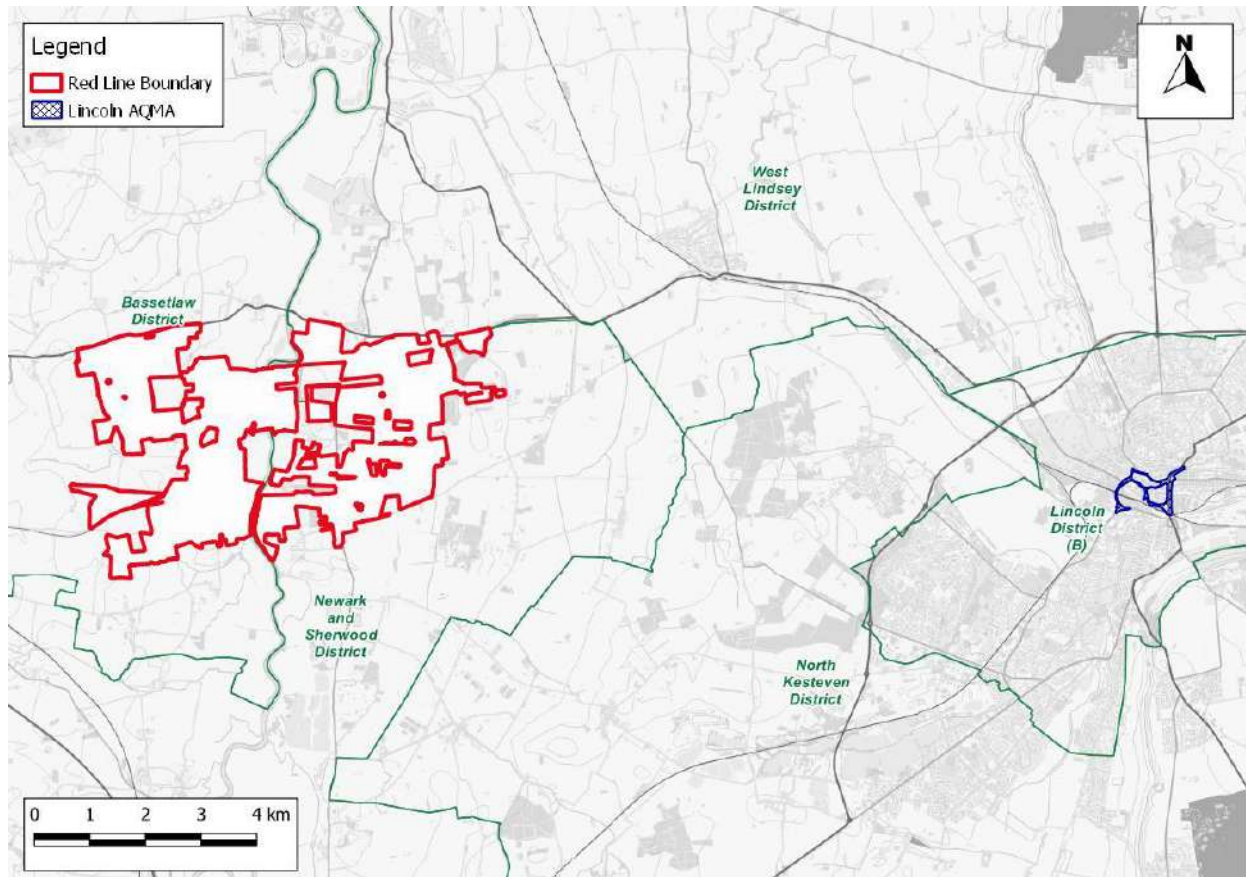
⁶⁷ Defra (2020) 2020 NO₂ projections data (2018 reference year), Available: <https://uk-air.defra.gov.uk/library/no2ten/2020-no2-pm-projections-from-2018-data>.

⁶⁸ Defra (2023) UK Ambient Air Quality Interactive Map, Available: <https://uk-air.defra.gov.uk/data/gis-mapping>.

Relevant Baseline Conditions

- 13.8. The Proposed Development falls partially within the administrative boundaries of Bassetlaw District Council (BDC), West Lindsey District Council (WLDC) and Newark and Sherwood District Council (NSDC). The nearest Air Quality Management Area (AQMA) to the Site is located in Lincoln city centre, approximately 11 km to the east, and the Proposed Development is not expected to affect air quality within this area. The location and setting of the Site are presented in Figure 13-1.

Figure 13-1: Site Location and Setting in Context of Air Quality

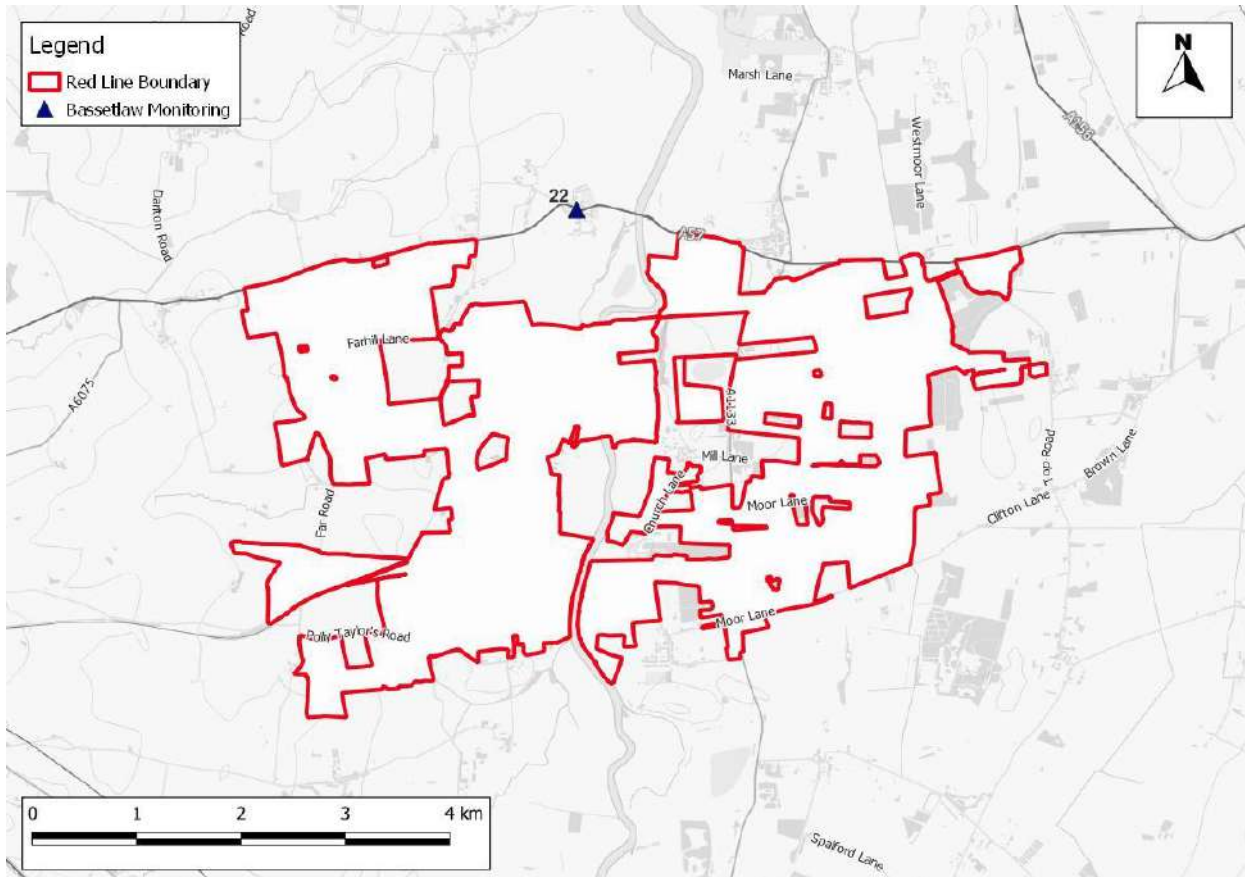


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- 13.9. No significant industrial sources have been identified that are likely to affect the Proposed Development, in terms of air quality.

13.10. BDC monitors air quality throughout its administrative boundary using a network of NO₂ diffusion tubes, of which one site (Site 22) is located on the A57 south of Dunham on Trent. The location of the monitor in relation to the Proposed Development is shown in Figure 13-2 and annual mean NO₂ results for 2015 to 2021 are shown in Table 13-1. Results have been taken from BDC's 2020 and 2022 Air Quality Annual Status Reports^{69 70}.

Figure 13-2: Air Quality Monitoring Location



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13.11. WLDC and NSDC also monitor air quality using diffusion tubes, although the monitoring sites nearest to the Proposed Development are located over 14 km to the north and 13 km to the west, respectively, so are not considered to be representative of conditions in the study area.

⁶⁹ Bassetlaw District Council (2020), 2020 Air Quality Annual Status Report, Available: <https://data.bassetlaw.gov.uk/air-quality-management.aspx>

⁷⁰ Bassetlaw District Council (2022), 2022 Air Quality Annual Status Report, Available: <https://data.bassetlaw.gov.uk/air-quality-management.aspx>

Table 13-1: Summary of Annual Mean NO₂ Monitoring (2015-2021) (µg/m³)

Site ID	Site Type	Location	2015	2016	2017	2018	2019	2020	2021
22	Roadside	Dunham, Little Styrrup 22	25.9	25.9	25.2	24.1	23.5	17.6	18.1
Objective			40						

- 13.12. As shown in Table 13-1, there have been no recorded exceedances of the annual mean NO₂ objective (of 40 µg/m³) at the nearby monitoring site since at least 2015, with measured concentrations well below the air quality objective for the protection of human health. Concentrations have therefore also remained well below 60 µg/m³, indicating that exceedances of the 1-hour mean NO₂ objective are unlikely to have occurred (according to methodology set out in Defra’s LAQM.TG(22) guidance^{Error! Bookmark not defined.}). There has been a slight decrease in concentrations observed since 2015, which is in line with trends observed nationally.
- 13.13. While 2020 and 2021 results have been presented for completeness, they will not be relied upon in any way as they are unlikely to be representative of ‘typical’ air quality conditions due to the impact of the COVID-19 pandemic on traffic volumes and thus pollutant concentrations.
- 13.14. No monitoring of PM₁₀ or PM_{2.5} concentrations is carried out by any of the nearby local authorities, but based on the rural location of the Site away from any major sources of emissions, the baseline pollutant concentrations are expected to be close to background levels.
- 13.15. There are no AURN monitoring sites⁷¹ within 1 km of the Site with which to identify exceedances of the annual mean NO₂ limit value. Defra’s roadside annual mean NO₂ concentrations, which are used to identify and report exceedances of the limit value, do not identify any exceedances within the study area in 2019. As such, there is considered to be no risk of a limit value exceedance in the vicinity of the Proposed Development by the time that it is operational.
- 13.16. Estimated background concentrations in the study area, derived from Defra’s 2018-based background maps⁶⁶, are set out in Table 13-2 and are all well below the objectives for all pollutants. A range of values is presented as the study area covers multiple 1x1 km grid squares. As these predictions were made using 2018 data, they do not include any allowance for changes in activity due to the COVID-19 pandemic; they are therefore expected to be pessimistic and overestimate background concentrations to the extent that they are affected by the pandemic.

⁷¹ Defra (2023) Defra AURN Archive, Available: <https://uk-air.defra.gov.uk/interactive-map?network=aurn>.

Table 13-2: Estimated Annual Mean Background Concentrations in 2019 ($\mu\text{g}/\text{m}^3$)

Year	NO ₂	PM ₁₀	PM _{2.5}
2019	8.2 – 10.8	15.9 – 17.4	8.7 – 9.2
Objective	40	40	20^a

^a The 20 $\mu\text{g}/\text{m}^3$ PM_{2.5} objective, which was to be met by 2020, is not in Regulations and there is no requirement for local authorities to meet it.

13.17. Air quality is generally expected to improve with time, for example due to more stringent emissions standards for motor vehicles. As such, the likely evolution of the baseline conditions if the Proposed Development comes forward with cumulative schemes, or if the Proposed Development did not come forward, will be considered.

Scope of Assessment

Assessment Criteria

- 13.18. There are no formal assessment criteria for the assessment of the effects from dust emissions. In the absence of formal criteria, the approach developed by the IAQM will be used.
- 13.19. The Government has established a set of air quality standards and objectives to protect human health, which will be used in the assessment of the effects of emissions from road traffic. The ‘standards’ are set as concentrations below which effects are unlikely even in sensitive population groups, or below which risks to public health would be exceedingly small. They are based purely upon the scientific and medical evidence of the effects of an individual pollutant. The ‘objectives’ set out the extent to which the Government expects the standards to be achieved by a certain date. They take account of economic efficiency, practicability, technical feasibility and timescale. The objectives for use by local authorities are prescribed within the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations (2002).
- 13.20. The UK-wide objectives for nitrogen dioxide and PM₁₀ were to have been achieved by 2005 and 2004 respectively, and continue to apply in all future years thereafter. Measurements across the UK have shown that the 1-hour nitrogen dioxide objective is unlikely to be exceeded at roadside locations where the annual mean concentration is below 60 $\mu\text{g}/\text{m}^3$. Measurements have also shown that the 24-hour mean PM₁₀ objective could be exceeded at roadside locations where the annual mean concentration is above 32 $\mu\text{g}/\text{m}^3$.
- 13.21. The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective. Defra explains where these objectives will apply in its LAQM.TG(22) guidance^{Error! Bookmark not defined.}. The annual mean objectives for NO₂ and PM₁₀ are considered to apply at the façades of residential properties, schools, hospitals etc.; they do not apply at hotels. The 24-hour mean objective for PM₁₀ is considered to apply at the same locations as the annual mean objective, as well as in gardens of residential properties and at hotels. The 1-hour mean objective for NO₂ applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations and pavements of busy shopping streets.

13.22. For PM_{2.5}, the objective set by Defra for local authorities is to work toward reducing concentrations without setting any specific numerical value. In the absence of a numerical objective, it is convention to assess local air quality impacts against the EU limit value of 20 µg/m³. The limit values for NO₂ and PM₁₀ are the same as the objectives.

Important Receptors Identified

13.23. As set out in the IAQM’s Guidance on the Assessment of Dust from Demolition and Construction^{Error! Bookmark not defined.} the construction dust risk assessment will consider the potential for impacts on sensitive receptors located within 350m of the Site boundary, and within 50m of the routes anticipated to be used by construction vehicles up to 500m from the Site exit(s). For the construction dust assessment, relevant receptors in the study area include residential properties (high sensitivity receptors) as well as places of work (medium sensitivity receptors).

13.24. For the assessment of impacts of airborne emissions from vehicles associated with the Proposed Development, existing sensitive receptors will be identified based on detailed maps, satellite imagery and plans of the Proposed Development. Existing receptors will include residential properties and schools in the study area. Receptors will be identified to represent a range of exposure, at worst-case locations with respect to air quality impacts. All receptors where the air quality objectives apply will be considered to be ‘high’ sensitivity receptors. It is not possible to detail specific receptors at this stage as information on the routing and volume of additional traffic is not yet available.

Likely Significant Effects Scoped Out from Detailed Assessment

13.25. Table 13-3 presents the elements which have been scoped out from the detailed assessment, as it is considered no likely significant effects will occur.

Table 13-3: Likely Significant Effects Scoped out from the Air Quality Detailed Assessment

Elements Scoped Out	Justification
Construction and Decommissioning Plant Emissions	Emissions from plant associated with construction and decommissioning will not be explicitly modelled or assessed, as the relevant guidance from the IAQM24 states that <i>“experience from assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) [...] suggests that they are unlikely to make a significant impact on local air quality and in the vast majority of cases they will not need to be quantitatively assessed”</i> . Significant effects as a result of NRMM emissions will thus be scoped out. However, suitable mitigation measures for site plant will be presented as part of the environmental measures based on advice presented in the IAQM guidance documents.

Operational Effects	The operation of the Proposed Development will not result in any direct emissions to air. There will be a small number of operational traffic movements associated with maintaining the solar farm, the number is likely to well below the screening thresholds for a detailed air quality assessment set out in the EPUK / IAQM guidance ²³ ; thus, the Proposed Development will likely not result in any significant effects during operation and has been scoped out.
Ecological Effects	As detailed in Chapter 6, there are no European sites within 200m of roads on which a detectable rise in traffic would be predicted during the construction and decommissioning phases. There are two SSSI within 200m of the A1133 (Spalford Warren SSSI and Besthorpe Warren SSSI), however these are south of the Site on a stretch of road that is unlikely to be a major construction and decommissioning traffic route given access from the A57 is proposed. Further, construction and decommissioning traffic can be discounted as the increase in traffic will be temporary and limited ensuring that the extent of the effect will be low, temporary and reversible. This justification equally applies to LWS present within the area. Given these reasoning the effects of changes in air quality on designated ecological sites have also been scoped out.

Likely Significant Effects Scoped into the Detailed Assessment

13.26. Potential air quality effects that will be considered in relation to the construction and operation of the Proposed Development include:

- > Impacts on dust soiling and PM₁₀ emissions during the enabling, construction and decommissioning of the Proposed Development, at existing sensitive receptors; and
- > Impacts of NO₂, PM₁₀ and PM_{2.5} emissions from vehicles associated with the enabling and construction, and decommissioning, of the Proposed Development during the peak year, at existing sensitive receptors.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

13.27. Further baseline pollutant concentrations in the peak year of construction at existing receptors will be predicted using the ADMS-Roads dispersion model, which will be used in the air quality assessment to contextualise the impacts of the Proposed Development and determine the significance of any effects. Details of the model inputs, assumptions and the verification method are set out below. Where assumptions are made, a realistic worst-case approach will be adopted.

Construction

- 13.28. The dispersion model ADMS-Roads will be used to quantify the impacts that road traffic emissions (associated with existing and development-generated road traffic) will have on air quality at existing receptor locations. Vehicle emissions will be derived using Defra's latest Emission Factor Toolkit (EFT) (v11.0).
- 13.29. The model will be used to predict annual mean concentrations of NO₂, PM₁₀ and PM_{2.5} at representative likely worst-case existing receptors, which will in turn also be used to assess the likelihood of exceedances of the 1-hour mean NO₂ objective and 24-hour mean PM₁₀ objective according to the methodology set out in LAQM.TG(22).
- 13.30. The assessment will be based on the likely worst-case option with respect to traffic generation for the assessment of the impacts of the Proposed Development on existing local air quality (i.e. the year of construction or decommissioning predicted to generate the greatest number of additional vehicle trips).
- 13.31. The scenarios that will be considered as part the assessment will include:
- > Current baseline scenario (the year 2019 or 2022 will be considered to correspond to the most recent year of data unaffected by the COVID pandemic);
 - > Peak year of construction – without the Proposed Development, but including traffic associated with relevant cumulative schemes, this being the future baseline; and
 - > Peak year of construction– with the Proposed Development and including traffic associated with relevant cumulative schemes, this being the assessment case.
- 13.32. An important element of the modelling study will be to verify the model output against measured results. This will be undertaken using the existing nearby diffusion tube monitor operated by BDC (located at the roadside of the A57 in Dunham on Trent), and an adjustment factor will be determined in line with the methodology set out in Defra's TG(22)^{Error! Bookmark not defined.} guidance document.
- 13.33. Meteorological data will be taken from either the Waddington or Scampton meteorological monitoring stations, which are the nearest and most representative meteorological sites to the Proposed Development. Meteorological data for 2019 or 2022 (depending on the baseline year) will be used in the dispersion model to match the latest year of suitable local monitoring data.
- 13.34. Background pollutant concentrations will be determined using data derived from the Defra background maps.
- 13.35. There is no official guidance in the UK in relation to development control on how to describe air quality impacts and effects, nor how to assess their significance. The approach developed jointly by EPUK and the IAQM^{Error! Bookmark not defined.} will therefore be used. This includes defining descriptors of the impacts at individual receptors, which take account of the percentage change in concentrations relative to the relevant air quality objective, rounded to the nearest whole number, and the absolute concentration relative to the objective. The overall significance of the air quality effects is then determined using professional judgement, giving consideration to various factors including the frequency, duration and magnitude of the predicted impacts, their relationship to appropriate air quality objectives and the high sensitivity of the receptors.

Decommissioning

13.36. Dependent on the availability of information relating to the decommissioning phase of the Proposed Development, an assessment of the decommissioning phase will follow the same approach as the above construction phase.

Assumptions, Limitations and Uncertainties

- 13.37. The road traffic emissions dispersion model used in the assessment is dependent upon the traffic data that have been input, which will have inherent uncertainties associated with them.
- 13.38. Predicting pollutant concentrations in a future year will always be subject to greater uncertainty. For obvious reasons, the model cannot be verified in the future, and it is necessary to rely on a series of projections provided by DfT and Defra as to what will happen to traffic volumes, background pollutant concentrations and vehicle emissions. Historically, Defra's EFT had a tendency to over-state emissions reductions into the future. However, analysis of the most recent versions of Defra's EFT carried out by AQC^{72 73}, suggest that, on balance, these versions are unlikely to over-state the rate at which NO_x emissions decline in the future at an 'average' site in the UK. In practice, the balance of evidence suggests that NO_x concentrations are most likely to decline more quickly in the future, on average, than predicted by the EFT, especially against a base year of 2016 or later. Using EFT v11.0 for future-year forecasts in this report thus provides a robust assessment, given that the model has been verified against measurements made in 2019.
- 13.39. Forecasts of future-year concentrations are usually based on measurements made during a recent year. They then take account of projected changes over time to factors such as the composition of the vehicle fleet and the uptake of other new technologies, as well as population increases etc. In early 2020, activity in the UK was disrupted by the Covid-19 pandemic. As a result, concentrations of traffic-related air pollutants fell appreciably⁷⁴. While the pandemic may cause long-lasting changes to travel activity patterns, it is reasonable to expect a return to more typical activity levels in the future. 2020 is thus likely to present as an atypically low pollution year for roadside pollutant concentrations, although recent analysis of 2021 data indicates that concentrations in that year were less affected⁷⁵.
- 13.40. There are then additional uncertainties, as models are required to simplify real-world conditions into a series of algorithms. At all stages of the assessment, a reasonable worst-case approach will be adopted to ensure the conclusions are robust.

⁷² AQC (2020) Performance of Defra's Emission Factor Toolkit 2013-2019, Available: <https://www.aqconsultants.co.uk/CMSPages/GetFile.aspx?guid=7fba769d-f1df-49c4-a2e7-f3dd6f316ec1>.

⁷³ AQC (2020) Comparison of EFT v10 with EFT v9, Available: <https://www.aqconsultants.co.uk/CMSPages/GetFile.aspx?guid=9d6b50e1-3897-46cf-90f1-3669c6814f1d>.

⁷⁴ Defra Air Quality Expert Group (2020) Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK- Rapid evidence review, Available: https://uk-air.defra.gov.uk/assets/documents/reports/cat09/2007010844_Estimation_of_Changes_in_Air_Pollution_During_COVID-19_outbreak_in_the_UK.pdf.

⁷⁵ AQC (2022) Trends in UK NO_x and NO₂ Concentrations through the COVID-19 Pandemic: January 2022

13.41. The following key assumptions will be made in the air quality assessment to facilitate a reasonable worst-case assessment of likely significant effects:

- > That the Waddington and Scampton meteorological monitoring stations appropriately represent conditions in the study area; and
- > That travel activity patterns in the future assessment years will return to historically-normal levels (i.e. pre-pandemic) with no long-lasting changes to travel behaviour.

14. Carbon and Climate Change

Introduction

- 14.1. This Chapter of the Scoping Report presents the scope of the environmental assessment for Carbon and Climate Change. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those carbon and climate change matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.
- 14.2. Within this Chapter, the term ‘carbon’ is used to describe all greenhouse gas (GHG) emissions, i.e. all emissions which might contribute to climate change, the predominant contributor of which is carbon dioxide (CO₂).

Review of Policy, Legislation and Relevant Guidance

- 14.3. Legislation, planning policy and guidance relating to climate change, and pertinent to the Proposed Development comprises:

Legislation

- > Climate Change Act 2008⁷⁶ and 2050 Target Amendment Order (2019); and
- > The Carbon Budget Order 2021.

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – specific reference to Section 4.8 which relates to climate change adaptation;
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023)⁷⁷ – specific reference to Part 5, Section 5.3 which relates to greenhouse gas emissions;
- > Draft National Policy Statement for Electricity Networks Infrastructure (EN- 5) (2023) – specific reference to paragraph 2.2.6; and
- > National Planning Policy Framework (2023) Section 14;

Local Planning Policy

- > Newark and Sherwood District Council (2013), Local Development Framework, Allocations and Development Management, Development Plan Document - specifically Policy DM4
- > Central Lincolnshire Local Plan (2023) – specifically Policy S11 Embodied Carbon.

⁷⁶ Her Majesty's Stationery Office (2008) The Climate Change Act 2008.

⁷⁷ Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf

- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – specific reference to Policy DM10: Renewable and Low Carbon Energy.
- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023. Policy ST51: Renewable Energy Generation and Policy ST50: Reducing Carbon Emissions, Climate Change Mitigation and Adaptation.

Guidance

- > Planning Practice Guidance (2023), Climate Change, published (12 June 2014, last updated 15 March 2019).
- > Institute of Environmental Management and Assessment (IEMA) EIA Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (2022);
- > IEMA (2020) EIA Guide to: Climate Change Resilience and Adaptation
- > Royal Institute of Chartered Surveyors (RICS) (2017) Whole Life Carbon Assessment for the Built Environment; and
- > PAS 2080:2023 Carbon Management in Buildings and Infrastructure.

Baseline Conditions

- 14.4. The baseline for the carbon and climate change assessment will be related to the current activities at the Site, which includes carbon emissions from farming activities. Where possible, carbon from these existing activities will be calculated. However, where information cannot be obtained to provide a worst-case carbon assessment, the baseline for carbon emissions will be assumed to be zero. This is a valid approach as detailed in the IEMA Guidance ^{Error! Bookmark not defined.} as it will result in a worst-case quantification of the net change in carbon emissions. Additionally, a comparison of the carbon emissions associated with the construction and operation of the Proposed Development will be made to the equivalent average lifecycle emissions associated with the baseline UK national grid electricity supply.
- 14.5. The assessment of climate resilience and adaptation will focus on the future climatic changes in metrological conditions. Information will be obtained from the Met Office climate projections for the UK (UKCP18); details contained in technical studies included in the ES (flood risk and drainage, air quality and noise and vibration) and from reliable data sources.

Environmental Measures

- 14.6. Given the nature of the Proposed Development, its main contribution to enhancing the environment is in aiding the UK's transition to a net zero electricity grid. Other minor contributions, such as reducing the carbon emissions associated with the construction and operation of the Proposed Development, will be detailed in the EIA.

Scope of Assessment

Important Receptors Identified

- 14.7. The assessment of effects on climate change will consider the release of carbon from activities associated with the Proposed Development. Carbon has the potential to affect climate change through, for example, an increase in global temperature.

- 14.8. The assessment of carbon will not include identification of sensitive receptors, as carbon emissions do not directly affect specific locations, but lead to indirect effects by contributing to climate change. Impacts on specific areas will not be included within this assessment, since the effects of carbon emissions will affect the global atmosphere, and therefore need to be considered in a total context, rather than on localised areas.
- 14.9. The assessment of climate resilience and adaptation will focus on the Proposed Development itself as the sensitive receptor.

Likely Significant Effects Scoped Out from Detailed Assessment

- 14.10. The carbon and climate change assessment will include an assessment of the effects of carbon emissions on climate, as well as the potential effects associated with the resilience and adaptation of the Proposed Development to future climate change.
- 14.11. As all carbon emissions have the potential to affect climate change it is not typical to attempt to distinguish effects for carbon emissions from construction and operational phases separately. The carbon assessment will therefore examine all carbon emissions associated with the construction and operation of the Proposed Development and the resultant effects on climate change.
- 14.12. The carbon assessment will include a detailed footprint of key construction and operational phase carbon emissions. The emissions sources included in the assessment are described in detail later in this Chapter. It is proposed to scope out some minor carbon emissions sources from the assessment. These sources will only make up a very small component of the total Proposed Development carbon footprint and their exclusion will therefore not materially affect the assessment. IEMA guidance acknowledges that emissions sources that combine to contribute less than 5% of a project's carbon emissions can typically be excluded from the assessment. The proposed exclusions for the carbon assessment are:
- > carbon emissions from the treatment and disposal of waste materials during both construction and operation. These will form a very small component of the carbon footprint of the Proposed Development and will be minimised through standard best practice including the implementation of Site Waste Management Plans;
 - > carbon emissions associated with water use (including water treatment and supply (pumping)). The Proposed Development (during construction or operation) will not have a substantial potable water consumption and therefore these emissions are expected to result in very small contributions to the total carbon footprint; and
 - > carbon emissions from decommissioning of the Proposed Development at the end of its operational life are scoped out. Decommissioning is, for the purposes of this assessment considered to be at least 45 years in the future, by which time the UK Government has committed to a net zero economy (to occur by 2050). It is likely in 45 years there will be new technology and recycling facilities. The emissions associated with decommissioning of the Proposed Development are therefore anticipated to be net zero even though the mechanisms to achieve this are not yet clearly defined.
- 14.13. Exclusion of these sources from the carbon footprint will not prevent these emissions sources being considered in the environmental measures included for the Proposed Development, in line with IEMA guidance.

Likely Significant Effects Scoped into the Detailed Assessment

14.14. The potential carbon and climate change effects associated with the Proposed Development that will be assessed in the ES, are:

- > effects of carbon emissions during construction and operation of the Proposed Development on climate change; and
- > effects associated with the resilience and adaptation of the Proposed Development to future climate change.

14.15. In terms of the carbon emissions assessment, the following key emissions sources associated with the Proposed Development will be included in the assessment:

- > embodied carbon in construction materials used to construct the Proposed Development;
- > carbon emissions from construction transport;
- > carbon emissions from construction phase electricity and fuel consumption;
- > carbon emissions from operational transport including road traffic;
- > carbon emissions from the operational phase energy consumption and generation; and
- > carbon emissions from repair, maintenance and replacement of components of the Proposed Development during its lifetime; and
- > carbon emissions from the operational phase energy consumption and emissions saved as a result of clean energy generated by the Proposed Development and transported to the Grid thereby supporting the greening of the UK's energy supply.

Methodology proposed to Undertake Detailed Assessment

Carbon Assessment

14.16. The carbon assessment will utilise the following approaches:

- > The embodied carbon from construction will be calculated to account for carbon emissions arising from the manufacture and production of construction materials. The assessment of embodied carbon covers “cradle to gate” emissions (i.e. carbon emissions from the extraction of raw materials through to finished construction products). Embodied carbon emissions will be calculated using a range of sources including University of Bath Inventory of Carbon and Energy, product Environmental Performance Declarations, and published lifecycle assessment reports and research where relevant;

- > Carbon emissions from electricity and fuel use during construction will be estimated based on predicted construction phase electricity consumption and fuel usage, using carbon emissions factors published by the Department for Energy Security & Net Zero (DESNZ)⁷⁸;
- > Carbon emissions from road transport (during both construction and operation) will be calculated using carbon factors for transport modes derived from DfT's Webtag tool⁷⁹;
- > Carbon emissions associated with the repair, maintenance and replacement of components of the Proposed Development during its lifetime will be calculated using the same data and resources used to calculate embodied carbon, taking account of the anticipated lifetime and replacement frequency of key components of the Proposed Development including PV panels, inverters, transformers, structures, cables and Battery Energy Storage Systems (BESS); and
- > Carbon emissions savings from the electricity generated by the Proposed Development will be calculated through comparison to the current carbon intensity of fossil fuel power generation (Combined Cycle Gas Turbines – CCGT). This comparison is relevant as the electricity generated by the Proposed Development will replace energy from fossil fuel combustion as part of the UK's transition to Net Zero. Carbon emissions factors for CCGT will be obtained from the latest Government UK energy fuel mix disclosure tables.

14.17. Where possible, the net increase in carbon emissions during operation will be calculated by comparison to the existing, baseline emissions.

Assessment of Significance

14.18. The approach to defining likely significant effects will be carried out in three steps, in accordance with the 2022 IEMA guidelines on assessing greenhouse gas emissions and evaluating their significance:

- > The first step is to compare the Proposed Development's carbon emissions in the opening year to the baseline carbon emissions to determine whether there is a net increase or decrease in carbon emissions as a result of the Proposed Development;
- > The second step is to compare the calculated change in emissions to local and regional carbon emissions for context; and
- > The third step applies expert judgment on the significance of those emissions taking into account the changes in emissions, their contribution to relevant carbon budgets, their consistency with relevant policy, and an evaluation of the environmental measures proposed to avoid, reduce and compensate carbon emissions.

⁷⁸ Department for Energy Security & Net Zero (2023) Greenhouse gas emissions factors for company reporting 2023. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1166236/ghg-conversion-factors-2023-condensed-set-update.xlsx

⁷⁹ Department for Transport (2023) TAG data book. Available: <https://assets.publishing.service.gov.uk/media/646f8c844a892b000c746ba4/tag-data-book-v1.21-may-2023-v1.0.xlsm>

- 14.19. The assessment will be undertaken in line with the IEMA guidelines, taking account of all relevant national, regional and local policies relating to carbon emissions and climate change. The level of significance will be taken using the criteria as defined in the IEMA guidelines in combination with professional judgement.
- 14.20. In relation to carbon mitigation, the approach will be to follow best practice principles to avoid and reduce carbon emissions in order to minimise the carbon impacts of the Proposed Development as far as is commercially and technically viable.

Climate Resilience and Adaptation Assessment

- 14.21. The assessment of the resilience and adaptation of the Proposed Development to future changes in climate will be undertaken in accordance with the methodology described in IEMA guidance.
- 14.22. The assessment will draw on technical input from a number of other technical assessments such as flood risk and drainage, air quality, and noise and vibration.
- 14.23. The assessment will analyse Met Office climate projections for the UK (UKCP18) to identify likely future changes in local climate and will set out the measures incorporated into the design of the Proposed Development that will ensure the Proposed Development is resilient to future climate risks such as increased extreme weather events and warmer summer temperatures.

Assumptions, Limitations and Uncertainties

Carbon Assessment

- 14.24. It is necessary to make a number of assumptions when undertaking a GHG assessment; assumptions made will generally seek to reflect a realistic worst-case scenario. Key assumptions include:
- > Embodied carbon emissions will be based on the latest design at the point of submission of the PEIR and subsequent ES, and will use the latest available embodied carbon data and resources to estimate the embodied carbon associated with the Proposed Development;
 - > The calculation of construction transport emissions will make a number of high level assumptions about the type and the origin and destination of these vehicles, including imports of components to the UK. To overcome uncertainty, assumptions will be designed to overestimate rather than underestimate emissions where necessary;
 - > The calculation of lifetime electricity generated by the Proposed Development will rely on assumptions regarding the likely performance degradation of PV panels during their lifetime, to ensure the total lifetime electricity generation is not overestimated; and
 - > Emissions for repair, maintenance and replacement of the Proposed Development during its lifetime will be based on current carbon emissions factors and will therefore not account for future decarbonisation in the manufacturing sector, making the assessment worst-case.

Climate Resilience and Adaptation Assessment

- 14.25. The assessment will provide a broad indication of the potential impacts of climate change on the Proposed Development based on a qualitative assessment and professional judgement using knowledge of similar schemes. The UKCP18 projections are the most up-to-date projections of climate change for the UK.
- 14.26. UKCP18 provides probabilistic projections of future climate for a range of emissions scenarios. Future GHGs emissions, and resulting pathway, are uncertain. A precautionary approach, consistent with IEMA guidance will therefore be adopted here by selecting a high emissions scenario (RCP8.5).
- 14.27. Any further research, analysis or decision-making should take account of the accuracies and uncertainties associated with climate projections. Any future decision-making based on this analysis should consider the most up-to-date projections and range of literature, evidence and research available at the time.
- 14.28. The embedded adaptation measures will be based on information provided in the Project Description. The determination of significance will be undertaken under the assumption that industry design standards will be adhered to where detailed design information is unavailable.

15. Noise and Vibration

Introduction

- 15.1. This Chapter of the Scoping Report presents the scope of the environmental assessment for Noise and Vibration. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those noise and vibration matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.

Review of Policy, Legislation and Relevant Guidance

- 15.2. Legislation, planning policy and guidance relating to noise and vibration, and pertinent to the Proposed Development comprises:

Legislation

- > Environmental Protection Act, 1990;
- > Control of Pollution Act, 1974.

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1), in particular section 5.11, Noise.
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Section 5.12
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) – specific reference to paragraph 3.10.153
- > The National Planning Policy Framework (2023) - in particular paragraph 174 e) (in relation to preventing unacceptable levels of noise) and paragraph 185 (in relation to protection of tranquil areas).
- > The Noise Policy Statement for England, 2010.

Local Planning Policy

- > Newark and Sherwood District Council (2013), Local Development Framework, Allocations and Development Management, Development Plan Document - specifically Policy DM4
- > Central Lincolnshire Local Plan (2023) – specifically Policy S14, Renewable Energy.
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – specific reference to Policy DM10: Renewable and Low Carbon Energy.

- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023 - in particular Policy ST51, Renewable Energy Generation and Policy 48, Protecting Amenity.

National Guidance

- > Planning Practice Guidance (2023), Noise ('PPG', 2019).
- > British Standard BS 4142, Methods for rating and assessing industrial and commercial sound, 2014 + 2019 Amendments;
- > British Standard BS 5228, Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration, 2009 + 2014 Amendments;
- > British Standard BS 7445, Description and measurement of environmental noise, Guide to quantities and procedures, 2003;
- > BS 6472, Guide to evaluation of human exposure to vibration in buildings, Part 1, Vibration sources other than blasting, 2008;
- > BS 7385, Evaluation and measurement for vibration in buildings – Guide to damage levels from groundborne vibration, 1993;
- > British Standard BS 8233, Guidance on sound insulation and noise reduction for buildings, 2014;
- > Calculation of Road Traffic Noise, Department of Transport, Welsh Office, 1988;
- > Design Manual for Roads and Bridges, Sustainability and Environment Appraisal, LA 111, Noise and Vibration, 2020.

Baseline Conditions

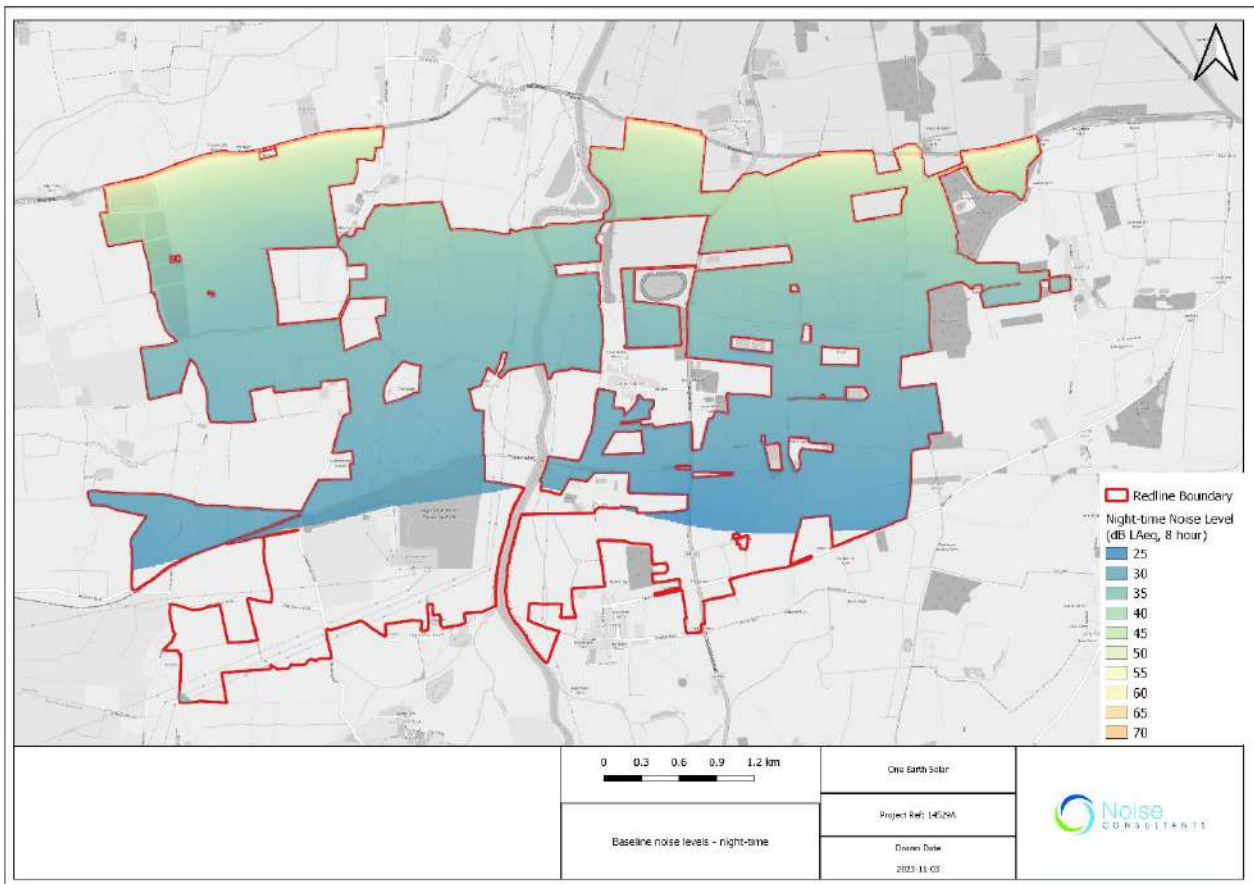
Approach to Collection of Baseline Data

- 15.3. For the purposes of the scoping report, baseline noise levels have been established by reference to strategic noise mapping for the local area. This data is available online through the Extrium website portal (<http://www.extrium.co.uk/noiseviewer.html>) and provides information in relation to the likely levels of noise from roads and railways, as well as Noise Important Areas.

Relevant Baseline Conditions

- 15.4. As shown in Figure 15-1, from the initial review of currently available information, existing noise sources in the vicinity of the Site are likely to be related to infrequent agricultural activity and transport sources. Baseline noise levels are therefore likely to be low, particularly during the night.

Figure 15-1: Strategic Noise Mapping - Baseline Noise Levels during Night-Time



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- 15.5. The main existing sources of noise that are likely to affect the Site and surrounding area are the A57, immediately adjacent to the northern Site boundary, the A1 approximately 8km to the west from the centre of Site and the East Coast Main Line, approximately 3 km to the western boundary of the Site. It is likely that there is also some noise from the existing High Marnham 275 kV substation and the associated electricity grid infrastructure, however this source is not included in the strategic noise mapping data and cannot be readily quantified without site-specific noise surveys.
- 15.6. Without the Proposed Development, future baseline ambient noise levels are likely to experience a gradual increase over time, primarily due to growth in road traffic. On low-speed roads (e.g., <30mph), changes in car technology may partially offset some of the expected noise level increases that arise from aforementioned traffic growth. However, noise generated from tyre-road interaction dominates on higher speed roads and therefore, expected growth in road traffic on major roads (i.e., the A1 and A57) is likely to lead to a slight, but not significant increase in ambient (L_{Aeq}) noise levels regardless of changes in technology. Importantly, the assessment methodology for some aspects of the Proposed Development relies upon the quantification of background (L_{A90}) sound levels. Background sound levels at existing receptors around the Site are not considered likely to experience material change in the future baseline compared to existing.

Environmental Measures

- 15.7. Since the project will not be altering the existing road or rail network, or the existing High Marnham substation, the main existing sources of noise in the local area will be unaffected and therefore there will be little opportunity for enhancements to the existing noise environment due to the Proposed Development.
- 15.8. Where possible, noise sources within the Proposed Development will be located away from sensitive noise receptors and appropriate noise attenuation will be included within the technical design of equipment.

Scope of Assessment

Important Receptors Identified

- 15.9. Residential receptors are of greatest importance in relation to the noise and vibration assessment. As detailed in Chapter 2, there are several villages in the vicinity of the Proposed Development, including Ragnall, Newton on Trent, Thorney, North Clifton, South Clifton, Normanton on Trent, Skegby and Fledborough. In addition, there are individual residential properties located at various points around the Site. All of these villages and individual properties are considered to be sensitive receptors in noise terms.
- 15.10. There are also a small number of non-residential receptors that may be considered sensitive in certain circumstances, such as places of worship (e.g. St George and the Martyr North and South Clifton Church and St Gregory's Church, Fledborough), and schools (e.g. North Clifton Primary School and St Matthews Church of England Primary School, Normanton on Trent). These non-residential receptors will be included in the assessment on a case-by-case basis, once further details of likely traffic routing and locations of potentially noise generating plant are known.
- 15.11. Currently, details of future noise sensitive receptors (i.e. those that are currently proposed, or extant approved but not built/occupied) are limited. Where relevant and necessary, these receptors will be included in the detailed assessment.

Likely Significant Effects Scoped Out from Detailed Assessment

- 15.12. Table 15-1 presents the elements which have been scoped out from the detailed assessment, as it is considered no likely significant effects will occur.

Table 15-1: Likely Significant Effects Scoped out from the Noise and Vibration Detailed Assessment

Elements Scoped Out	Justification
On Site Construction and Decommissioning Traffic	Experience suggests that there will not be significant levels of vibration generated at sensitive receptor locations due to construction and decommissioning traffic movements. For haul roads within the Site, the Construction Environmental Management Plan and Decommissioning Environmental Management Plan will set out the measures and maintenance plans to ensure these roads are well-maintained and will not be a source of vibration from construction and decommissioning traffic. It is therefore proposed that the effects of vibration from construction and decommissioning traffic within the Site is scoped out of the detailed assessment.
Operational Traffic and Cable Routes	It is anticipated that only minimal numbers of road traffic movements would be generated by the Site once it is in operation (see Chapter 12 for further details). As such, it is proposed that noise and vibration from operational road traffic are scoped out of the detailed assessment. Similarly, no noise or vibration will be generated by cable routes within the Site during operation, therefore it is proposed that noise and vibration associated with cable routes be scoped out of the detailed assessment.
Solar PV Arrays	Solar PV arrays do not make use of any plant or equipment that generates significant vibration levels during operation. As such, vibration from the operation of plant and equipment within the Site is proposed to be scoped out of the detailed assessment.

Likely Significant Effects Scoped into the Detailed Assessment

- 15.13. Traffic movements to and from the Site during the construction phase have the potential to result in likely significant effects at sensitive receptors, depending on the proximity of construction traffic routes to receptors and the volume of vehicle movements required during construction. Consequently, the likely effects of construction traffic noise will be scoped into the detailed assessment.
- 15.14. Construction activities within the Site have the potential to generate likely significant noise and vibration effects at nearby sensitive receptors, dependant on the precise nature and location of the construction work required. As such, the effects of both noise and vibration generated during construction activities are proposed to be scoped into the detailed assessment. This will include the assessment of noise and vibration generated by all construction activities, including construction of the proposed solar farm, construction of any required ancillary equipment such as substation equipment, battery storage equipment, construction of cable routes and Site access roads.

15.15. Whilst the solar PV arrays are not a noise emission source when in operation, there is the potential for adverse noise impacts to be generated by ancillary equipment such as substations and battery storage equipment. The effect of operational noise from the Proposed Development is proposed to be scoped into the detailed assessment.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

15.16. A baseline noise survey will be undertaken to characterise the existing ambient noise environment. This will include unattended measurements of the existing ambient noise levels at locations representative of the noise sensitive receptors, together with additional attended sample measurements as required. The monitoring locations will be discussed and agreed where possible with representatives of Bassetlaw, Newark and Sherwood and Central Lincolnshire Local Authorities prior to the survey taking place, however the monitoring locations will be subject to variation depending on local site conditions.

15.17. It is currently anticipated that up to seven monitoring locations will be required in order to adequately capture baseline noise conditions in the vicinity of the entirety of the the Site. The baseline noise survey will be undertaken in accordance with BS 7445:2003. Unattended measurements will be undertaken for a period of 4-7 days, inclusive of typical weekday and weekend periods. Monitoring locations will include positions that are representative of baseline conditions at noise sensitive receptor positions that have the potential to experience noise from fixed plant and equipment associated with the Proposed Development. Currently, these areas could include Newton on Trent, Thorney, North Clifton, South Clifton, Fledborough, Normanton on Trent, Skegby and Ragnall.

Construction

15.18. The definition of appropriate assessment criterion and noise metrics for the purpose of identifying likely significant effects will take into account pertinent national policies, standards and guidance, as described previously in this report.

15.19. Construction noise predictions will be carried out in accordance with guidance contained in BS 5228-1:2009+A1:2014, which will also be used to inform assessment and significance criterion. Calculations will be informed by indicative plant lists, working methods and proposed phasing plans. The determination of effect thresholds for the construction noise assessment is based upon the methodologies presented within Annex E of BS 5228-1:2009+A1:2014 'ABC Method', as summarised in Table 15-2.

Table 15-2 Construction Noise (Fixed and Mobile Plant) – ‘ABC Method’ Noise Thresholds

Noise Source	Receptor	Period	Threshold value, in decibels (dB LAeq,T)		
			Category A	Category B	Category C
Construction Noise	Residential	Daytime	65 dB LAeq,12h	70 dB LAeq,12h	75 dB LAeq,12h
	Residential	Evening	55 dB LAeq,4h	60 dB LAeq,4h	65 dB LAeq,4h
	Residential	Night	45 dB LAeq,8hr	50 dB LAeq,8hr	55 dB LAeq,8hr

Clarifications and notes:

Daytime: Weekdays (0700-1900hrs) and Saturdays (0700-1300hrs)

Evening: Weekdays (1900-2300hrs), Saturdays (1300-2300hrs), Sundays and Bank Holidays (0700-2300hrs)

Night-time: Weekdays, Weekends and Bank Holidays (2300-0700hrs)

*Rounded to the nearest 5 dB

- 15.20. The Category A noise thresholds are assumed to align with the Lowest Observed Adverse Effect Level (LOAEL) as they are the lowest threshold in the ‘ABC Method’ criteria.
- 15.21. The Category C noise thresholds are assumed to align with a Significant Observed Adverse Effect Level (SOAEL) and is an approach consistent with other major UK infrastructure projects.
- 15.22. The daytime Category C (SOAEL) threshold of 75 dB LAeq,12hr is taken from the Committee on the Problem of Noise: Noise report (Wilson, 1963) and was set to avoid interference with normal speech indoors.
- 15.23. The evening Category C (SOAEL) is set at 10 dB lower than the day-time criteria, based upon advice presented within the Department of the Environment Advisory Leaflet 72 – Noise Control on Building Sites (AL 72, 1976).
- 15.24. The night-time Category C (SOAEL) of 55 dB LAeq,8hr is consistent with advice presented within the WHO Night Noise Guidelines for Europe (WHO NNG, 2009).
- 15.25. The Unacceptable Adverse Effect Level (UAEL) thresholds are based upon the BS 5228-1:2009+A1:2014 requirements for temporary rehousing, associated with construction activities of 10 or more days of working in any 15-consecutive days, or for 40 or more days in any six consecutive months, and set at 10 dB above the SOAEL.
- 15.26. Where proposed scheme related noise exposures are shown to be lower than the LOAEL values, a likely significant effect will not be deemed to occur at residential receptors.
- 15.27. Development related noise exposures which fall between LOAEL and SOAEL have the potential to constitute a likely significant effect, subject to additional considerations, namely:
- > The level of noise exposure;

- > The change in the noise exposure as a result of the Proposed Development; and
- > The population experiencing such change and exposure to noise as a result of the Proposed Development.

Noise Exposure Classifications

15.28. Table 15-3 provides noise level categories between the LOAEL and UAEL thresholds that are proposed to be used for the assessment of construction noise.

Table 15-3: Noise Level Categories

Noise Level	Construction Noise Daytime	Evening	Night-time
Very Low	<65 dB L _{Aeq, 12h}	<55 dB L _{Aeq, 4h}	<45 dB L _{Aeq, 8h}
LOAEL			
Low	66-68 dB L _{Aeq, 12h}	56-58 dB L _{Aeq, 4h}	46-48 dB L _{Aeq, 8h}
Medium	69-71 dB L _{Aeq, 12h}	59-61 dB L _{Aeq, 4h}	49-51 dB L _{Aeq, 8h}
High	72-74 dB L _{Aeq, 12h}	62-64 dB L _{Aeq, 4h}	52-54 dB L _{Aeq, 8h}
SOAEL			
Very high	>75 dB L _{Aeq, 12h}	>65 dB L _{Aeq, 4h}	>55 dB L _{Aeq, 8h}
UAEL			
Unacceptable	>85 dB L _{Aeq, 12h}	>75 dB L _{Aeq, 4h}	>65 dB L _{Aeq, 8h}

Magnitude of Change in Noise Exposure From Construction Plant

15.29. The magnitude of change in noise exposure is not proposed to be considered as part of the construction noise assessment given there are no permanent activities associated with construction phase.

Construction Vibration

15.30. The consideration of construction ground-borne vibration effects, such as those associated with high-impact activities, shall be considered using criteria advocated in BS 5228-2:2009+A1:2014, and other vibration standards and guidance referenced in this Standard (e.g. BS 6472-1:2008 and BS 7385-2:1993).

- 15.31. The effect of human exposure to vibration from sources other than blasting is covered in BS 6472:2008. The standard provides guidance for predicting human response to vibration in buildings over the frequency range of 0.5 Hz to 80 Hz. It presents frequency-weighting curves for humans exposed to whole-body vibration, advice on measurement methods and methods for assessing continuous, intermittent and impulsive vibrations.
- 15.32. BS 6472:2008 uses the vibration dose value (VDV $\text{ms}^{-1.75}$) to determine the effect of vibration on human receptors within the buildings, as “[p]resent knowledge shows that this type of vibration is best evaluated with the vibration dose value (VDV).” As noted in BS 5228-2:2009+A1:2014, for construction it is considered more appropriate to consider effects of vibration levels in terms of Peak Particle Velocity (PPV mms^{-1}).
- 15.33. The use of the PPV metric is also consistent with the guidance within BS 7385:1993, which presents assessment criteria to be applied for the likelihood of cosmetic damage to buildings.
- 15.34. Table 15-4 provides presents a summary of the assessment criteria that are proposed to be adopted as the basis for the construction vibration assessment, given in terms of human response and derived based on guidance within BS 5228-2:2009+A1:2014 and BS 7385:1993.

Table 15-4 Vibration Limits for Human Response and Building (Cosmetic) Damage

Vibration Limit (PPV mms^{-1})	Effect	Magnitude of Impact
< 0.14	Vibration unlikely to be perceptible	None
0.14	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration	Negligible
0.30	Vibration might be just perceptible in residential environments	Minor
1.00	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given the residents	Moderate
7.50	Guide value for cosmetic damage of residential buildings where dynamic loading may lead to resonance	Significant
10.00	Vibration is likely to be intolerable for any more than a very brief exposure to these levels in most building environments	Very Significant

15.35. A likely significant effect from construction vibration is proposed to be deemed to occur at a residential receptor where there is an exceedance of a magnitude of impact of 1.00 mms⁻¹ PPV during the daytime, or 0.30 mms⁻¹ PPV during the night-time periods.

Construction Road Traffic Noise

15.36. The calculation of changes in road traffic flows on the local road network during the construction noise phase will use the procedures described in the Department of Transport's 'Calculation of Road Traffic Noise' (CRTN, 1988) and presented in terms of Basic Noise Level (BNL). The results will be assessed by reference to significance criteria advised in Highways England 'LA 111 Noise and vibration' (LA111, 2020). The assessment criteria proposed to be used in the construction traffic assessment are summarised in Table 15-5.

Table 15-5: Thresholds of Potential Effect Criteria (outdoor, free-field noise levels unless otherwise stated)

Noise Source	Period	LOAEL	SOAEL	UAEL
Operational and Construction Road Traffic	Daytime	55 dB LA _{10,18h} (façade)	68 dB LA _{10,18h} (façade)	71 dB LA _{eq,12h}
	Night-time	40 dB L _{night, outside}	55 dB L _{night, outside}	66 dB LA _{eq,4h}

Noise Exposure Classifications

15.37. Table 15-6 provides noise level categories between the LOAEL and UAEL thresholds.

Table 15-6: Noise Level Categories

Noise Level	Construction Road Traffic	
	Daytime	Night-time
Very Low	<55 dB LA _{10,18h} (façade)	<40 dB L _{night, outside}
LOAEL		
Low	55-59 dB LA _{10,18h} (façade)	40-45 dB L _{night, outside}
Medium	60-63 dB LA _{10,18h} (façade)	46-49 dB L _{night, outside}
High	64-67 dB LA _{10,18h} (façade)	50-54 dB L _{night, outside}
SOAEL		
Very high	>=68 dB LA _{10,18h} (façade)	>=55 dB L _{night, outside}
UAEL		
Unacceptable	>=71 dB LA _{eq,16h}	>=66 dB LA _{eq,8h}

Magnitude of Change in Noise Exposure From Construction Road Traffic Noise

- 15.38. A beneficial change is deemed to occur where there is a reduction in noise level, and an adverse change is deemed to occur where there is an increase.
- 15.39. Potential impacts associated with road traffic during the construction phase will be short-term. Proposed assessment criteria for the change in road traffic noise level for the short-term are derived from methodologies advocated in LA 111, as summarised in Table 15-7.

Table 15-7: Change in Noise Level Categories

Noise Change Category	Short-term Change in Road Traffic Noise (dB $L_{A10,18hr}$, or L_{night})
Negligible	<1 dB
Low	1 – 2.9 dB
Medium	3 – 4.9 dB
High	5 – 10 dB
Very High	>10 dB

Decommissioning

- 15.40. Dependent on the availability of information relating to the decommissioning phase of the Proposed Development, an assessment of the decommissioning phase will follow the same approach as the above construction phase.

Operation

- 15.41. The assessment of operational noise will be undertaken in line with national policies, namely the Noise Policy Statement for England (NPSE, 2010), taking into account relevant policies, standards and guidance set out above.
- 15.42. Operational noise at the identified sensitive receptors will be assessed against criterion developed using methodologies advocated in BS 4142, 2019. The BS 4142, 2019 methodology assesses the likely effects of sound on people and premises used for residential purposes, and provides an indication of the likely magnitude of impact. The BS 4142, 2019 magnitude of impacts, including where there is an indication of ‘significant adverse impact’ has been aligned with the effect levels in NPSE (2010), namely the SOAEL, which is the effect level above which significant adverse effects on health and quality of life occur.
- 15.43. For residential receptors during the daytime and night-time periods, the SOAEL threshold is set at 10 dB greater than the background sound level, when determined in accordance with the BS 4142, 2019 assessment procedure. When this threshold is exceeded it indicates a likely significant effect in EIA terms is likely to occur, subject to factors relating to context.
- 15.44. The LOAEL threshold is exceeded where the rating level is equal to or exceeds the background sound level. Table 15-8 summarises the threshold levels relating to operational sound.

Table 15-8: Operational Noise – BS 4142 (2019) LOAEL and SOAEL Criteria

Period	LOAEL	SOAEL
Daytime* (0700-2300hrs)	Equal to background sound level, $L_{A90,T}$ (with consideration of context)	Background sound level, $L_{A90,T} + 10$ dB (with consideration of context)
Night-time (2300-0700hrs)	Equal to background sound level, $L_{A90,T}$ (with consideration of context)	Background sound level, $L_{A90,T} + 10$ dB (with consideration of context)

*where necessary, consideration of the evening period (1900-2300) will be included

15.45. In instances where the predicted rating levels are between the LOAEL and the SOAEL, thresholds can require some additional quantitative and qualitative considerations. Consideration must be given to the context within which the effect occurs in addition to employing professional judgement. These considerations can include:

- > The magnitude of the effect;
- > The change in magnitude of the effect;
- > The type of effect, including its intermittency;
- > The existing ambient environment;
- > How effective the measures employed to mitigate the effect are, including best practicable means (BPM); and
- > The duration of the effect.

Assumptions, Limitations and Uncertainties

15.46. At this stage of the project, limitations and uncertainties related to noise are due to details of precise design of the Proposed Development, the quantities, locations and specifications of potentially noise generating plant and equipment (both during construction and operation) being currently unavailable. As the design develops, this information will become available, however it is likely that further uncertainties and limitations will be identified as more information becomes available. These will be identified in the ES wherever relevant.

16. Human Health

Introduction

- 16.1. This Chapter of the Scoping Report presents the scope of the environmental Cassessment for Health. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those health matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.

Review of Policy, Legislation and Relevant Guidance

- 16.2. Legislation, planning policy and guidance relating to health, and pertinent to the Proposed Development comprises:

Legislation

- > The Planning Act 2008 - Introduced the DCO system for NSIPs and sets out provisions for EIA; and
- > The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 – Section 5(2) requires EIAs to identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on human health.

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1) (2011) – Section 4.13 sets out the assessment principles for health.
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – Section 4.3 sets out the assessment principles for health.
- > National Policy Statement for Renewable Energy EN-3 (2011) – The NPS provides the primary basis for decisions on renewable energy DCO applications.
- > Draft National Policy Statement for Renewable Energy EN-3 (2023) – Section 3.10 provides the primary basis for decisions on solar photovoltaic DCO applications.
- > National Planning Policy Framework (2023) – Paragraph 92c states that decisions should aim to enable and support healthy lifestyles, especially where this would address identified local health and well-being needs. Paragraph 93b states that decisions should take into account and support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community.

Local Planning Policy

- > Newark and Sherwood District Council (2013), Local Development Framework, Allocations and Development Management, Development Plan Document – specifically Policy DM4.

- > Newark and Sherwood District Council (2019), Amended Core Strategy Development Plan – Sets the strategic policies for guiding development in the district up to 2033
- > Central Lincolnshire Local Plan (2023) – specifically Policy S54
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – specifically Policy DM10
- > Draft Bassetlaw Local Plan 2020 – 2038 Main Modifications (2023) – in particular Section 9 and Policy ST44.

National Guidance

- > Planning Practice Guidance (2023) – Provides further guidance on promoting health and safe communities and mentions health impact assessments as a useful tool to use where there are expected to be significant impacts.
- > IEMA Determining Significance for Human Health In Environmental Impact Assessment (2022) – Provides guidance on consideration of health as a topic within an EIA.

Local Guidance

- > Central Lincolnshire Health Impact Assessment for Planning Applications Guidance Note (2023) – Provides guidance on the on the implementation of Policy S54 in the Central Lincolnshire Local Plan.

Baseline Conditions

Approach to Collection of Baseline Data

- 16.3. For the purposes of the scoping report, baseline health conditions have been established by referencing public health data for Newark and Sherwood, Bassetlaw and West Lindsey districts by the Office for Health Improvement and Disparities (OHID). Reference is also made to the joint health and wellbeing strategies for Nottinghamshire (i.e. Bassetlaw and Newark and Sherwood) and for Lincolnshire (i.e. West Lindsey).

Relevant Baseline Conditions

- 16.4. As discussed in Chapter 2, the Site is predominantly agricultural land with the River Trent running north-south through the centre. The nearest residential communities are Dunham, Fledborough, North Clifton, Ragnall, Newton on Trent, Thorney, South Clifton, High Marnham, Low Marnham and Normanton on Trent. It also falls within the district boundaries of Newark and Sherwood, Bassetlaw and West Lindsey.
- 16.5. Relevant health indicators for the local authorities and England as a comparator are set out in Table 16-1 below using the latest OHID public health data. It shows that life expectancy in Bassetlaw is significantly lower in Bassetlaw than England, whilst life expectancy in West Lindsey is slightly higher. Particular issues include circulatory diseases in West Lindsey, childhood obesity in Bassetlaw and self-harm in Newark and Sherwood.

Table 16-1 Health Profile of Local Authorities and England

Indicator	Bassetlaw	Newark and Sherwood	West Lindsey	England
Male life expectancy (years)	78.8	79.7	79.7	79.5
Female life expectancy (years)	82.1	82.8	83.5	83.2
All deaths from circulatory diseases (SMR ⁸⁰)	103.1	98.4	109.2	100.0
All deaths from respiratory diseases (SMR)	101.0	97.3	83.5	100.0
Emergency hospital admissions for intentional self-harm (SAR)	98.0	104.7	71.3	100.0
Percentage of people who reported having a limiting long term illness or disability	18.5	20.3	19.9	17.6
Reception: Prevalence of obesity	11.0	10.1	10.9	9.9
Year 6: Prevalence of obesity	24.2	20.5	18.8	21.6

⁸⁰ Standardised Mortality Ratio (SMR) and Standardised Admission Ratio (SAR) are statistical measures to compare the mortality and admission rates in a specific population to a standard population. England has an SMR and SAR of 100, indicating that the observed number of deaths is exactly what would be expected based on the standard population. A ratio greater than 100 suggests that the observed rate in the study population is higher than expected, while a ratio less than 100 suggests lower rates than expected.

- 16.6. The administrative areas of Bassetlaw and Newark and Sherwood are covered by the Nottinghamshire Joint Health and Wellbeing Strategy 2022-2026. Following detailed research and community consultation across Nottinghamshire, it sets out the factors which are having the greatest impact on people's health and wellbeing, and which account for some of the biggest variations or inequalities. The key challenges and areas of focus are identified as (i) child health, (ii) mental health, (iii) good food, (iv) homelessness, (v) tobacco, (vi) reducing alcohol, (vii) domestic abuse, (viii) healthy weight) and (ix) air quality.
- 16.7. West Lindsey is covered by the Joint Health and Wellbeing Strategy for Lincolnshire (2023). The priorities and areas which were highlighted as being the most important health and wellbeing issues facing the county are (i) mental health and emotional wellbeing – children & young people, (ii) mental health – adults, (iii) carers, (iv) physical activity, (v) housing and health, (vi) healthy weight and (vii) dementia.

Environmental Measures

- 16.8. Consideration of health effects will be factored into the design process from the outset. This approach will prioritise the provision of inherent design features which embed enhancements into the Proposed Development, rather than solely mitigating adverse impacts. Although currently at an early stage of design, there may be opportunities to provide publicly accessible green spaces and permissive paths which can be used for recreation and physical activity, particularly along the River Trent. There will be opportunities for new hedge and tree planting, as well as wider biodiversity enhancements which can also have positive health effects.
- 16.9. There is an urgent and quantifiable need for the deployment of renewable energy generation and the UK Government has committed to a net zero economy to occur by 2050. At a global level the Proposed Development will assist in adapting to climate change, and reverse the decline of our natural environment, thereby leading the world to a greener, more sustainable future for future generations.

Scope of Assessment

Important Receptors Identified

- 16.10. An important receptor to be considered in the assessment will be the vulnerable or priority groups identified through the baseline analysis, as well as the general population in the aforementioned impact areas as a comparator. The Wales Health Impact Assessment Support Unit is the most recent and comprehensive document that provides a non-exhaustive list of suggested vulnerable groups who may be more disadvantaged, including:
- > Age related groups: Children and young people, Older people;
 - > Income related groups: People on low income, Economically inactive, Unemployed/workless, People who are unable to work due to ill health;
 - > Groups who suffer discrimination or other social disadvantage: People with physical or learning disabilities/difficulties, Refugee groups, People seeking asylum, Travellers, Single parent families, Lesbian and gay and transgender people, Black and minority ethnic groups, Religious groups;

- > Geographical groups: People living in areas known to exhibit poor economic and/or health indicators, People living in isolated/over-populated areas, People unable to access services and facilities.

16.11. These groups will be considered sensitive receptors for the purpose of the assessment.

16.12. The assessment will also draw on receptors identified in the technical assessments of other ES chapters as appropriate.

Likely Significant Effects Scoped Out from Detailed Assessment

16.13. Health is the result of a complex interaction of a wide range of different determinants, from an individual’s genetic make-up, to lifestyles and behaviours, and the communities, local economy, built and natural environments to global ecosystem trends. Table 5.1 of the Institute of Environmental Management and Assessment (IEMA) Guide to: Effective Scoping of Human Health in Environmental Impact Assessment (2022) includes a non-exhaustive list of wider determinants of health associated with the WHO definition.

16.14. Solar farms such as the Proposed Development are designed, operated and maintained safely, and are not known to be linked with or represent a serious risk to public health. Many of the key determinants of human health will not be applicable in this case, or will be assessed throughout other chapters, namely Noise and Vibration, Landscape and Visual, Air Quality, Land and Soils, Socio-Economics, Transport and Access, Climate Change and Hydrology and Hydrogeology chapters. With this considered, the wider determinants used by IEMA and the Office for Health Improvement and Disparities, which are considered should be scoped out from detailed assessment are listed in Table 16-2.

Table 16-2 Consideration of Wider Determinants of Health to be Scoped Out

Categories	Wider determinants of health	Consideration and discussion
Health related behaviours	Risk taking behaviours	During all phases, all people based on the Site will be professional workers and all contractors and operators on site will have strict health and safety protocols enforced. These policies and practices can cover issues including alcohol, cigarettes, non-prescribed drugs, problem gambling and communicable illness.
	Diet and nutrition (including access to healthy affordable food)	The proposal will result in the temporary long-term reduction in agricultural land. As the Site represents less than 0.0001% of the UK’s Utilised Agricultural Area ⁸¹ it is unlikely to significantly affect the availability and affordability of food. However, some of the Site may constitute as Best and Most Versatile Agricultural Land, and any likely

⁸¹ Defra (2022) Agriculture in the United Kingdom

		significant effects of the Proposed Development on agricultural land will be assessed within the Land and Soils Chapter.
Social environment	Housing and access to good quality affordable housing	The proposals will not result in the loss or provision of any dwellings, with the vast majority of the workforce are expected to already be residents of the East Midlands region. No significant or widespread effects on housing availability and affordability are expected.
	Relocation	The Proposed Development does not involve any population displacement or relocation and will not require compulsory purchase of homes or community facilities.
	Community safety	<p>All contractors and operators on site will enforce strict health and safety protocols and working practices to minimise injury risk for both the workforce and the general public, as well as policies on modern slavery and discrimination. Due to the potential for electrical hazards as well as the high value of equipment, the Site will be secured with fencing and monitoring systems to prevent unauthorised access and ensure safety. Risks and associated proposed mitigation will be reported in the ES where appropriate.</p> <p>If any surface works are required to access routes during the construction phase, these can be resurfaced to a high standard to minimise injury risk through a legal agreement. Safe working practices will be secured through a Construction Environmental Management Plan (CEMP) (an outline CEMP will be submitted as part of the DCO application.</p> <p>The potential for widespread actual or perceived crime that could affect population health is unlikely.</p>

Community cohesion, social participation, interaction and support

The Proposed Development will not directly affect indoor or outdoor community assets and meeting places, for voluntary, social, cultural or spiritual participation. The preparation of the Development Consent Order application will be supported and informed by an extensive programme of community engagement which will seek feedback from all sections of the community and enable all to voice their comments.

The community response to visual landscape change is discussed under 'Community identity, culture, resilience and influence' determinant in Table 16-3.

Community severance and community engagement

The Proposed Development is unlikely to significantly affect how people in surrounding communities know or trust their neighbours.

The existing communities will remain connected to others through physical access route and digital connectivity, with access to community facilities considered under the 'Access and connections to local public and key services and facilities' determinant in Table 16-3.

There may be psychological severance with some settlements experiencing a sense of enclosure by surrounding development. The Landscape and Visual chapter will assess the impact from these settlements with mitigation measures secured to soften views and minimise effects. The community response to visual landscape change is discussed under 'community identity, culture, resilience and influence' determinant in Table 16-3.

Public participation can improve the development of a development's design and associated detailed environmental assessment, thereby increasing the total welfare (including anxieties) of different interest groups in a community and enabling infrastructure which is more acceptable to communities. Mental wellbeing will be considered in the Human Health ES chapter and the preparation of the DCO application will be supported and informed by an extensive programme of community engagement.

Economic environment	Regeneration	The Proposed Development does not involve the demolition or rebuilding of any deprived neighbourhoods.
	Employment and income	It is not expected to significantly affect family structures, roles or relationships, by operating appropriate equal employment policies. The supply chain would also be expected to operate appropriate policies related to equality and health and safety, for both workers and the general population. Working conditions can be appropriately managed through health and safety policies and industry best-practice. As such, these issues would be scoped out.
	Education and training	As there would be no change in population, there is unlikely to be any significant health impact on schools and educational providers, and these issues would be scoped out.
	Connections to jobs	The vast majority of the workforce is expected to currently reside in the East Midlands region, with travel modes for the expectant workforce to be assessed in the Transport and Access chapter. However, this matter may be scoped into the Human Health chapter if the Transport and Access chapter indicates a significant impact.
	Tourism and leisure industries	The Proposed Development is not expected to have any significant effects on the tourism sector and existing leisure developments (see Chapter 17).
Bio-physical environment	Water quality or availability	The Hydrology and Hydrogeology chapter will assess how the Proposed Development affects water resources. The project would adopt standard best practice to minimise pollution risk issues. However, the effect on the health of vulnerable groups may be scoped into the Human Health chapter if the Hydrology and Hydrogeology chapter indicates significant effects to human health.

	<p>Land quality and use</p>	<p>The Proposed Development will involve limited excavation works during the construction phase. The operational phase will temporarily take agricultural land out of use and remain fallow for the long-term. The Land and Soils chapter will assess how the proposals will affect land quality and if it indicates significant effects to human health, then this matter may be scoped into the Health chapter.</p>
	<p>Air quality</p>	<p>With the implementation of a Construction Environmental Management Plan there will be no significant dust or traffic emissions during the operational phase which would affect air quality. As such, health effects should be scoped out during this phase.</p>
	<p>Radiation</p>	<p>Long-standing exposure limit and health protection guidelines for electric and magnetic fields (EMF), have been developed by the International Commission on Non-Ionizing Radiation Protection and have a high safety margin. The Proposed Development will comply with these guidelines.</p>
<p>Institutional and built environment</p>	<p>Health and social care services</p>	<p>The proposals will not result in the loss or provision of any dwellings and associated population. The vast majority of the workforce are expected to already be residents of the East Midlands region with existing access to healthcare and social care services.</p>
	<p>Quality of built environment and natural environment</p>	<p>The location of the Site is within a rural and semi-rural setting, although the electricity generated by the Proposed Development will predominantly be used to temporarily power the built environment. The landscape and visual impacts on the natural environment will be considered in the Landscape and Visual chapter, with mitigation measures secured to minimise impacts. The community response to visual landscape change is assessed under the 'Community identity, culture, resilience and influence' determinant in Table 16.3.</p>

Likely Significant Effects Scoped into the Detailed Assessment

16.15. The potential effects on wider determinants of health used by IEMA and the Office for Health Improvement and Disparities, which are considered should be scoped in for detailed assessment are listed in Table 16-3.

Table 16-3 Consideration of Wider Determinants of Health to be Scoped In

Categories	Wider determinants of health	Consideration and discussion
Health related behaviours	Physical activity (including opportunities for access by walking and cycling)	<p>Construction works may temporarily disrupt use of public rights of way, and therefore opportunities for physical activity. Any potential physical impacts will be assessed in the Transport and Access chapter with mitigation measures secured to minimise disruption. The Landscape and Visual chapter will also consider the impact on landscape amenity and suggested mitigation which could minimise adverse impacts on how these recreational routes are enjoyed and behavioural use. The Health chapter will assess the effect of any changes to the public rights of way on the ability for the receptors to undertake physical activity during the construction phase, and the Health chapter will cross-reference to the Transport and Access and the Landscape and Visual chapters where appropriate.</p> <p>During operation the Proposed Development will not reduce any land used for physical activity.</p>
Social environment	Access and connections to local public and key services and facilities	<p>Any potential temporary disruptions to access routes during the construction phase will be assessed in the Transport and Access chapter and the ES will cross-reference where appropriate. The Health chapter will assess the impact in health terms of any changes to how vulnerable groups access and connect to local services during the construction phase.</p> <p>During operation the Proposed Development will not directly reduce any land used for or access to local public and key services and facilities.</p>

Access and connections to the natural environment, open space, leisure and play

Any potential temporary disruptions to access routes during the construction phase will be assessed in the Transport and Access chapter and cross-referenced where appropriate. The Health chapter will assess the impact in health terms of any changes to how vulnerable groups access and connect to the natural environment, open space, leisure and play opportunities.

During operation the Proposed Development will not directly reduce any land used for or access to open space, leisure and play. Whilst long-term access and connections to the natural environment will be maintained, the impact on landscape amenity and associated enjoyment will be considered in the Landscape and Visual chapter with mitigation measures secured to minimise impacts. The final design may also include additional areas and recreation routes with public access along the River Trent.

Transport modes, access and connections, as well as links between communities

Construction works may temporarily disrupt use of public rights of way and roads through cable laying or movements by heavy goods vehicles. Any potential disturbance and safety impacts will be assessed in the Transport and Access chapter and the Health chapter will cross-reference where appropriate. The Health chapter will assess the effect in health terms of any changes to how vulnerable groups access and connect to other settlements and communities.

	<p>Community identity, culture, resilience and influence</p>	<p>The Proposed Development will not result in any demographic changes which would strongly influence on community identity, nor will it result in long-term changes to lighting, overshadowing and reflections; and the attractiveness of public spaces and buildings. The key change will be the visual landscape of the area, which will be considered in the Landscape and Visual chapter with mitigation measures secured to minimise impacts. The Health chapter will cross-reference to the Landscape and Visual chapter where appropriate. Another key issue is the sense of control within the community and how this can affect anxieties. The Health chapter will assess the impact on mental wellbeing of the receptors, and the preparation of the Development Consent Order application will be informed by an extensive programme of community engagement.</p>
<p>Economic environment</p>	<p>Education and training</p>	<p>Through all phases of the Proposed Development, there will be opportunities to improve educational and skills attainment of the workforce, which may be targeted at vulnerable or priority groups. The Proposed Development also presents opportunities to educate the general public about renewable energy generation by holding open days and information display boards around the Site. The Health chapter will assess the effect of education and training opportunities on the health of vulnerable groups.</p>
	<p>Employment and income</p>	<p>The Proposed Development will provide numerous direct and indirect opportunities for employment and higher incomes, which can potentially be particularly beneficial for some vulnerable or priority groups. This would be during all phases of development and outlined in the Socio-Economics chapter, albeit the greatest impacts would be expected during construction. The Health chapter will cross-reference to the Socio-Economics chapter where appropriate. The Health chapter will assess the effect of improving employment opportunities and income on the health of vulnerable groups.</p>

Local business activity

The Proposed Development could support the diversification of agricultural land and growth of rural businesses by providing an additional source of steady earnings which can help stabilise incomes during lower yields or market fluctuations. In addition to supporting a more resilient financial situation, a diversified income can also encourage farmers to invest in more sustainable agricultural practices. Other local businesses may also benefit during the construction and operational phases by supplying materials and services. The Socio-Economics chapter will assess the economic effects of the Proposed Development, and the Health chapter will assess the effect in health terms of any changes in business activity. This matter may be scoped out of the Health chapter if the Socio-Economics chapter indicates no significant change in local business activity. The Health chapter will cross-reference to the Socio-Economics chapter where appropriate.

Bio-physical environment	Climate change mitigation and adaption	<p>The Climate Change chapter will assess how the Proposed Development responds to the challenges of climate change which will affect current and future global populations. The Health chapter will cross-reference to the Climate Change chapter where appropriate. Embodied carbon and other emissions which can alter the climate are not expected to be of a scale to have a health impact during the construction phase. During the operational phase the renewable energy generated will assist in transitioning towards net zero. The Health chapter will assess how the contribution towards net zero targets affects the physical and mental health of receptors during the operational phase.</p>
	Air quality	<p>There would be localised dust and construction traffic emissions during the construction phase. The Air Quality chapter will assess how the Proposed Development will affect local air pollution, including opportunities to contribute to maintaining a good standard of air quality and setting out mitigation measures. The Health chapter will assess the effect of emissions on health of the identified receptors during the construction phase, and will cross-reference to the Air Quality chapter where appropriate.</p>

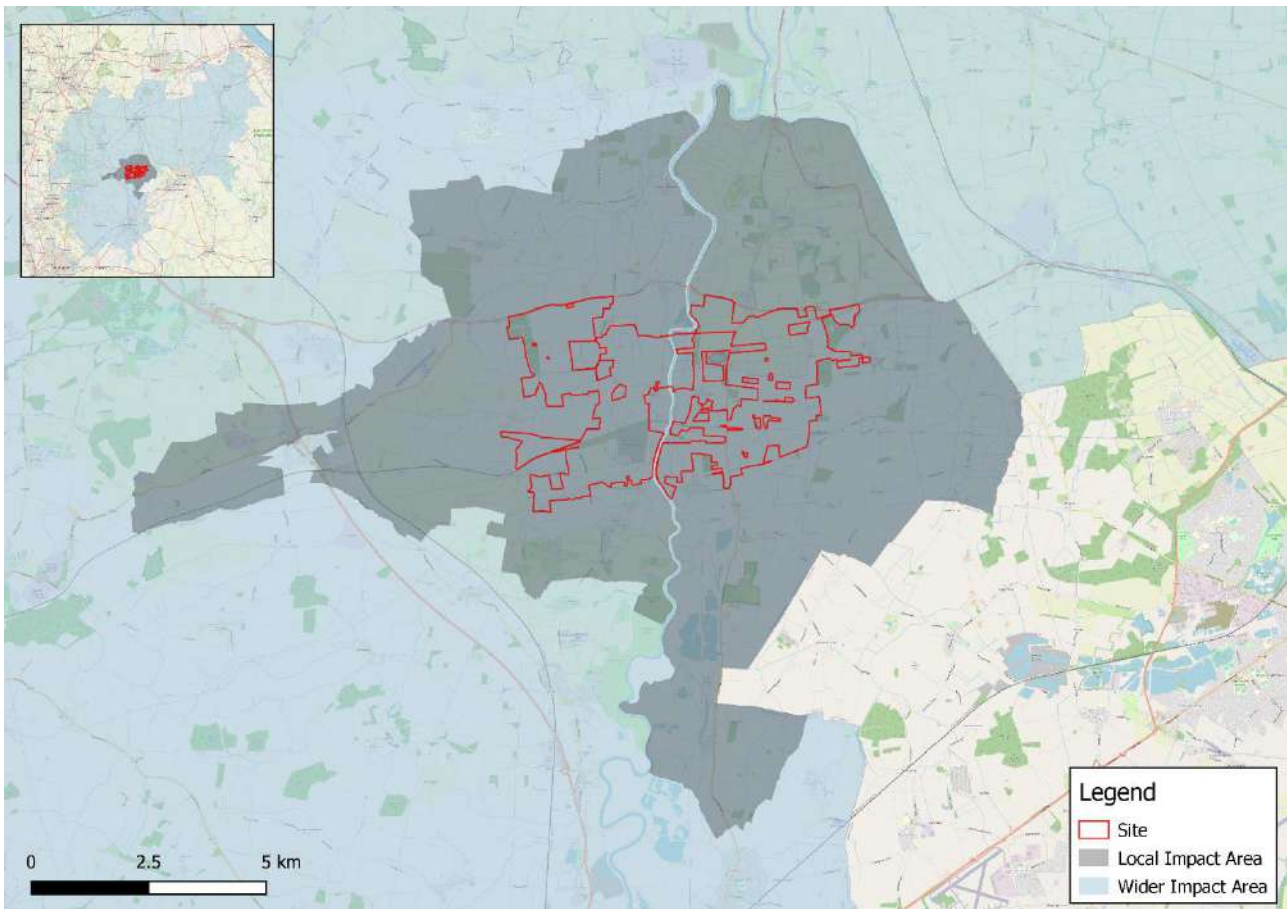
	<p>Noise and vibration</p>	<p>The Noise and Vibration chapter will assess how the Proposed Development affects the existing sound environment and associated impacts. The Health chapter will assess the effect of noise and vibration on health of the identified receptors (including mental wellbeing), and will cross-reference to the Noise and Vibration chapter where appropriate.</p>
	<p>Radiation</p>	<p>Fears of a causal link between EMFs and cancers and other diseases or that they disrupt the operation of pacemakers can generate community anxieties. Impacts on mental wellbeing will be scoped into the Health chapter, and the community engagement process will include non-technical information to explain how the balance of scientific evidence suggests EMFs are safe.</p>
<p>Institutional and built environment</p>	<p>Wider societal infrastructure and resource</p>	<p>The project will contribute towards a clean and resilient electricity infrastructure; to generate the energy which society depends on for good population health. A reliable supply of renewable electricity is required in relation to numerous societal factors such as food production and safety, thermal comfort, healthcare, education, income generation and socialising. As will be outlined throughout the ES, it could provide significant contributions in terms of economic development, climate change mitigation; and protection or enhancement of the natural environment (e.g. biodiversity, access to natural spaces and habitats). The Health chapter will assess the effect in health terms of the project's contribution towards wider societal infrastructure and will cross-reference to other ES chapters where appropriate.</p>
	<p>Health and social care services</p>	<p>There would be a larger workforce on site during the construction phase. Whilst the vast majority of are expected to already be residents of the East Midlands region with existing access to healthcare, some may want to temporarily register with local GP facilities. As such, the Health chapter will assess the effect on GP availability within the Trent Care, IMP, Newark and Retford & Villages Primary Care Networks during the construction phase.</p>

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

- 16.16. The detailed assessment in the Health Chapter will first establish a baseline position of the health profile of the local population, local priorities and strategies, socio-economic and environmental conditions and infrastructure. This will draw upon the other ES chapters and include GIS mapping as appropriate.
- 16.17. The best-known definition of health was produced by the World Health Organisation (WHO) as “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”.
- 16.18. When analysing baseline health conditions and assessing the effects on health (including mental wellbeing and health inequalities), the geographical scope of the assessment must be clearly defined. It is likely that the most significant effects will predominantly be felt close to the Site, particularly those concerning social infrastructure. Spatial characteristics, walking distances, socio-economic characteristics and the neighbourhood character area all indicate that the strongest functional relationships are most likely to be within the Site’s immediate surrounding area or a distance of 800m (equivalent to a 10-minute walk). The four Lower Layer Super Output Areas where the Site is located (Bassetlaw 015D, Bassetlaw 015F, Newark and Sherwood 004C, West Lindsey 007C) are to form the ‘Local Impact Area’ for the assessment as this area represents the most appropriate statistical fit.
- 16.19. It is acknowledged that some of the Proposed Development effects will be spread over a broader geographical area, for this reason, the wider local authority administrative areas of Bassetlaw, Newark and Sherwood and West Lindsey will be used as the Wider Impact Area. Figure 16-1 presents the areas of local and wider impacts considered in the assessment.

Figure 16-1 Local and Wider Impact Areas



Note: Redline shows the approximate site location

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16.20. Published health data within the public domain will be collated from sources such as the Office for Health Improvement and Disparities (OHID), Office for National Statistics (ONS), the relevant local authorities, the NHS and other recognised sources or through community engagement and liaising with key stakeholders such as Public Health teams within the local authorities.

16.21. The baseline health profile will focus on relevant physical and mental health indicators, socio-economic and labour market conditions, provision of community infrastructure, as well as the location of nearby hospitals and the capacity of GP facilities. It will also consider feedback relating to health and wellbeing matters received through the statutory and non-statutory community engagement process. This process of collating and reviewing relevant baseline data will enable vulnerable or “priority groups” to be identified.

16.22. Whilst it is not anticipated that further baseline data will need to be collected, future planned provision of community infrastructure will be checked to inform the baseline assessment.

Construction, Operation and Decommissioning

16.23. The methodology for the detailed assessment is set out below and will be the same for all phases of the Proposed Development.

- 16.24. The detailed assessment will examine the potential effects of the Proposed Development on health outcomes on the identified receptors using an assessment criteria matrix based on the wider determinants and assessment criteria set out in the NHS HUDU's Rapid Health Impact Assessment Tool; WHIASU's Health Impact Assessment - A Practical Guide; the NMWIADU's Mental Wellbeing Impact Assessment Toolkit and Central Lincolnshire's Health Impact Assessment for Planning Applications Guidance Note (2023). Only the criteria relevant to the wider determinants considered to be scoped in from Table 16.3 above will be assessed. Both direct and indirect effects will be considered across the construction and operation phases of the Proposed Development.
- 16.25. Where an effect is identified, the likely duration, location and significance will be highlighted. The health effects will be assessed in the context of the baseline position, as well as the nature and context of the effect, taking account of the sensitivity of the identified receptor (i.e. the existing population and identified vulnerable/ priority groups).
- 16.26. The sensitivity of receptors will be considered on a scale of very low sensitivity (very high capacity to adapt), low sensitivity (easily adapt to change), moderate sensitivity (limited capacity to adapt) and high sensitivity (do not easily adapt to change). In identifying the sensitivity, factors including the capacity to accept or respond to change and the local position, local needs and vulnerable/ priority groups will be taken into account.
- 16.27. The impacts of the Proposed Development will be identified as 'beneficial', 'neutral' or 'adverse' and defined as follows:
- > Beneficial - A positive and/or advantageous impact to a minor, moderate or major magnitude;
 - > Neutral - No obvious significant effect;
 - > Adverse - A negative and/or disadvantageous/ detrimental impact to a minor, moderate or major magnitude.
- 16.28. In instances where effects are identified, the following definitions of significance will be applied:
- > Major - the Development could be expected to have a substantial impact, either positive or negative, on health. This effect is considered to be 'significant';
 - > Moderate - the Development could be expected to have notable impact, either positive or negative, on health. This effect is considered to be 'significant';
 - > Minor – the Development could be expected to have a barely perceptible impact, either positive or negative, on health. This effect is considered to be 'not significant';
 - > Negligible – the Development could be expected to have no discernible impact, either positive or negative, on health. This effect is considered to be 'not significant'.
- 16.29. The impact significance matrix set out in Table 16-4 will be used to determine the significance of an effect. This impact significance matrix aligns with the IEMA Guide to: Determining Significance For Human Health In Environmental Impact Assessment (2022).

Table 16-4 Magnitude and Sensitivity

		Sensitivity			
		High	Moderate	Low	Very Low
Magnitude	Major	Major (Significant)	Major – Moderate (Significant)	Moderate - Minor (Significant)	Minor - Negligible
	Moderate	Major – Moderate (Significant)	Moderate (Significant)	Minor	Minor - Negligible
	Minor	Moderate - Minor (Significant)	Minor	Minor	Negligible
	Negligible	Minor - Negligible	Minor - Negligible	Negligible	Negligible

16.30. Due to the nature of the Proposed Development all impacts are likely to be temporary unless stated otherwise. In terms of temporary impacts, the duration can be determined as follows:

- > Short term - less than 5 years;
- > Medium term - 5-15 years; or
- > Long term - more than 15 years.

16.31. Where an impact is identified, enhancement and mitigation measures are recommended to either enhance or secure a positive impact or mitigate against a negative impact. Mitigation measures can include planning or non-planning measures and actions. Monitoring of effects will be proposed where appropriate.

16.32. The assessment will then determine the in-combination (intra-project) effects through further analysis. All identified effects (excluding negligible effects) will be collated for each receptor to produce a list of relevant determinants of health and their level of effect. This will provide a narrative of likely interactions and describe the need for any further mitigation necessary.

16.33. The assessment will also determine cumulative (inter-project) effects. A list of relevant reasonably foreseeable cumulative projects will be provided for each determinant of health. It will provide a combined level of effect to reflect the likely implications for public health. The priority will be the identification of likely significant effects and describing any further mitigation necessary.

Figure 16-2 Summary of Overall Methodology



Assumptions, Limitations and Uncertainties

16.34. It should be noted that the boundaries of the aforementioned impact areas may be adjusted for certain receptors depending on:

- > The availability of data (e.g. OHID public health data is not available for LSOAs and therefore data from the relevant electoral wards of Torksey, Collingham and Tuxford & Trent will be utilised);
- > To align with other technical assessments within the EIA and DCO application (e.g. Air Quality Assessment or the Noise and Vibration Assessment); or
- > Where it would more appropriate to review alternative boundaries (e.g. capacity of GP facilities may be expanded to nearby Primary Care Networks).

16.35. The identified impact areas and scale will be highlighted throughout the assessment, along with the relevant data sources, assumptions and limitations. The latest available data will be used; however, it should be noted that many data sources are frequently updated and could be subject to change from the time of drafting or during the Development Consent Order process.

17. Socio-Economics

Introduction

- 17.1. This Chapter of the Scoping Report presents the scope of the environmental assessment for Socio-Economics. Specifically, the Chapter presents the policy and legislative context, the approach to collecting baseline data and then an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out the scope of assessment including, with justification, those socio-economic matters that are proposed to be scoped out and in for detailed assessment and concludes by outlining the method that will be used to undertake the detailed assessment.

Review of Policy, Legislation and Relevant Guidance

- 17.2. Legislation, planning policy and guidance relating to socio-economics, and pertinent to the Proposed Development comprises:

National Planning Policy

- > Overarching National Policy Statement for Energy (EN-1)– specific reference to Section 5.12, which relates to Socio-Economics
- > Draft Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Section 5.13;
- > Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) – specific reference to paragraph 3.10.60
- > National Planning Policy Framework (NPPF) (2023) – specific reference to Section 6: Building a strong, competitive economy, Section 12: Achieving well designed places and Section 15: Conserving and enhancing the natural environment;

Local Planning Policy

- > Central Lincolnshire Local Plan (2023) – specifically Policies S10: Supporting a Circular Economy, S5: Development in the Countryside; and Policy S28: Spatial Strategy for Employment
- > Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies – specific reference to Policy DM10: Renewable & Low Carbon Energy.
- > Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023 specific reference to Policy DST51: Renewable Energy Generation.

National Guidance

- > HM Treasury (2022) The Green Book: Central Government Guidance on Appraisal and Evaluation.
- > Institute of Environmental Management and Assessment (2015) Environmental Impact Assessment Guide to Shaping Quality Development.

Baseline Conditions

Approach to Collection of Baseline Data

- 17.3. The potentially likely significant effects of the Proposed Development will be assessed against a relevant baseline scenario, taking into account social and economic conditions at different spatial levels. Those used in the baseline set out below are:
- > Site (where relevant data are available);
 - > Lower-Layer Super Output Area (LSOA);
 - > District;
 - > Region; and
 - > National.
- 17.4. Baseline conditions have been determined for a range of key indicators and measures, namely:
- > Demographics;
 - > Labour market;
 - > Local economy;
 - > Housing;
 - > Deprivation;
 - > Agricultural land classification and supply; and
 - > Education and Skills.
- 17.5. A range of sources has been used to establish the existing socio-economic conditions within the study area:
- > 2011 and 2021 Census Data⁸²;
 - > Labour Force Survey⁸³;
 - > Annual Population Survey⁸⁴;

⁸² Office for National Statistics (2011) 2011 Census. Available:
<https://www.ons.gov.uk/census/2011census/2011censusdata>

⁸³ Office for National Statistics (2022) Labour Force Survey. Available:
<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/annualpopulationsurveyapsqmi>

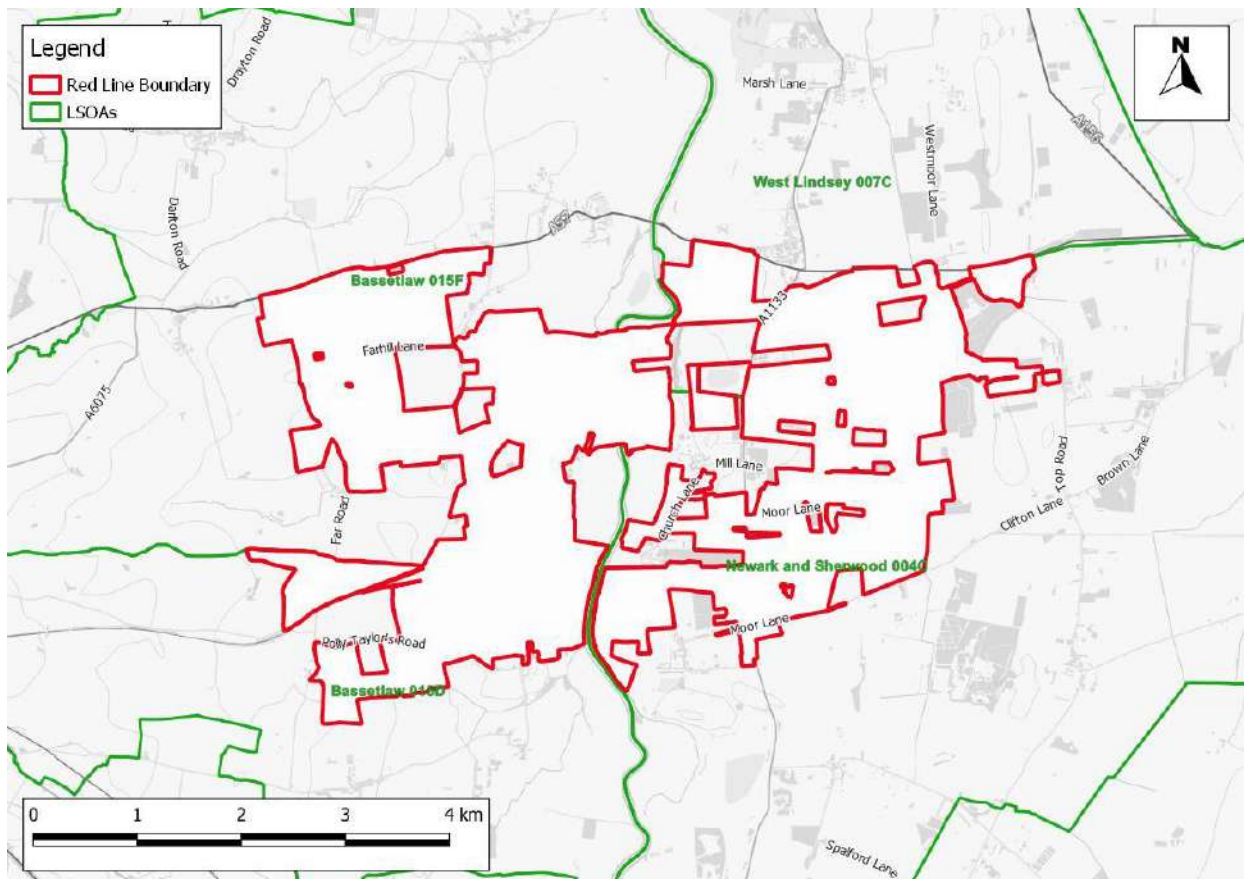
⁸⁴ Office for National Statistics (2022) Annual Population Survey. Available:
<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/annualpopulationsurveyapsqmi>

- > Business Register and Employment Survey⁸⁵;
- > Office for National Statistics Nomis⁸⁶; and
- > Agricultural Land Classification⁸⁷.

Relevant Baseline Conditions

17.6. As discussed in Chapter 2, the Site is located to the east and west of the River Trent, extending broadly to the A57 in the north, South Clifton to the south, Skegby to the west and Thorney to the east. It spans two counties, Nottinghamshire and Lincolnshire, and three local authority districts: Bassetlaw, Newark and Sherwood, and West Lindsey. It also spans four LSOAs: E01028037, E01028039, E01026409 and E01028317 (presented in Figure 17.1), hereafter referred to collectively as the ‘local area’. The Site is currently predominantly used for agriculture.

Figure 17-1: Site Location and LSOA Boundaries



⁸⁵ Office for National Statistics (2022) Business Register and Employment Survey. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/annualpopulationsurveysqmi>

⁸⁶ Office for National Statistics (2023) Nomis. Available: <https://www.nomisweb.co.uk/>

⁸⁷ Ministry of Agriculture, Fisheries and Food (1988) Agricultural Land Classification of England and Wales. Available: <https://www.data.gov.uk/dataset/c002ceea-d650-4408-b302-939e9b88eb0b/agricultural-land-classification-alc-grades-post-1988-survey-polygons>

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- 17.7. The population of Bassetlaw was 118,400 in 2021, having increased (by 4.8%) from 113,000 in 2011. Over the same period, the population of Newark and Sherwood increased (by 7.3%) from 115,000 to 123,400, and the population of West Lindsey increased (by 4.6%) from 136,700 to 143,000. In 2011, the combined population of the local area was 5,631, of which 83.4% were aged 16 or older, compared to 64.3% in the East Midlands and 64.7% in Great Britain.
- 17.8. Bassetlaw is the 129th most deprived out of the 316 national boroughs with 12% of the local population being income deprived. Newark and Sherwood is the 155th most deprived with 10.9% and West Lindsey is the 56th with 16.2%.
- 17.9. Gross Value Added (GVA) per head in Bassetlaw in 2019 (the most recent year for which data are available) was £19,969, compared to £21,068 in Newark and Sherwood, and £15,907 in West Lindsey. These are all lower than the UK average in 2019 of £27,001.
- 17.10. In 2021, 31.2% of working age residents in Bassetlaw had a degree level qualification or higher (National Vocational Qualification (NVQ) Level 4+), significantly lower than the East Midlands average (35.7%) and Great Britain average (43.6%). The figure for Newark and Sherwood was 32.5% and for West Lindsey was 24.4%. Similarly, the proportion of residents in Bassetlaw with no qualifications was 9.3%, which is significantly higher than the average for the East Midlands (7.5%) and Great Britain (6.6%). The respective figures for Newark and Sherwood, West Lindsey and the local area are 12.2%, 18.8% and 19.9%.
- 17.11. The industries which employ the most people in Bassetlaw are manufacturing (18.4% of jobs), motoring (16.3%) and healthcare (14.3%). These industrial groups are also prominent in Newark and Sherwood with 12.2% of jobs in manufacturing, 14.3% in motoring, 12.2% in healthcare and also 12.2% in hospitality. For West Lindsey, the figures are 18.2% in motoring, 18.2% in hospitality, 11.4% in health and 10.2% in manufacturing. For the local area, the industries with the largest workforces in 2011 were motoring (15.4%) healthcare (12.7%) and manufacturing (10.2%).
- 17.12. Electricity, Gas, Steam and Air Conditioning Supply provided only 1.6% of the employment in the local area in 2011. This was higher than the rates for both the East Midlands (0.8%) and Great Britain (0.4%). In total, approximately 2,861 people were employed in the local area in 2011.
- 17.13. In 2011, according to the Annual Population Survey, the unemployment rates (i.e. number of people aged 16 and over who are economically inactive) in Bassetlaw, Newark and Sherwood and West Lindsey were 8.8%, 6.4% and 8.5%, respectively. By January 2021, these had decreased to 3.6%, 4.7% and 4.2%, respectively.
- 17.14. In 2021, the rate of working age residents was 60.5% in Bassetlaw, 60.4% in Newark and Sherwood and 54.8% in West Lindsey, compared to the East Midlands average of 62.3% and Great Britain average of 62.9%.

- 17.15. In the local area, in 2011 there were 2,494 residential properties of which 97.3% were houses and only 2.7% were flats or other types (such as caravans). In Bassetlaw, Newark and Sherwood and West Lindsey, 92.4%, 91.2% and 93.8% of dwellings were houses, respectively. In the UK as a whole, 77.0% of residential properties were houses, 22.6% were flats and 0.4% were other types.
- 17.16. There are a number of Public Rights of Way (PRoW) which pass through or close to the Site. A 650 m section of bridleway crosses the Site close to the easternmost extent of the Site and to the west of Carr Wood; a 1.1 km section of bridleway crosses the Site towards its westernmost extent, to the south west of Ragnall; and several other bridleways follow the routes of minor roads through or alongside the Site. Numerous footpaths pass through the site, most notably along both the eastern and western banks of the River Trent, around Bubble Dyke to the north of North Clifton and to the south of Ragnall. A route on the National Cycle Network, which follows the route of the disused Lancashire, Derbyshire and East Coast Railway, passes from east to west across the Site, crossing the River Trent at the Fledborough Viaduct and following the northern site boundary of the former High Marnham Power Station.

Environment Measures

- 17.17. The Proposed Development has the potential to significantly affect the local area in a beneficial way, initially through the consideration of good design principles to ensure that any benefits are maximised. These beneficial effects may be either temporary, for example during the construction and decommissioning phases of the Proposed Development, or permanent during operation.
- 17.18. Opportunities to enhance beneficial socio-economic effects may include:
- > A temporary increase in employment opportunities for relevant construction and decommissioning trades and associated supply chains;
 - > The diversification of revenue for landowners;
 - > The optimisation of land use, with potential dual use of land for both the Proposed Development and agriculture; and
 - > An increase in renewable energy production and resultant contributions towards both achieving net zero targets and energy security.

Scope of Assessment

Important Receptors Identified

- 17.19. The assessment will primarily focus on the effects on people in the local authority areas of Bassetlaw, Newark and Sherwood, and West Lindsey, as well as the local area within which the Proposed Development is located. Where relevant, however, baseline data and potential effects at regional and national levels will also be provided. Whilst people are ultimately the receptors to any effects, how they are impacted will be assessed as well as the scale of any impacts and the spatial scale at which the impacts are most relevant.

Likely Significant Effects Scoped Out from Detailed Assessment

17.20. The effects of the Proposed Development on school places will not be assessed as the operational phase is not expected to result in a permanent increase in local population; thus, the demand for school places should not be affected.

Likely Significant Effects Scoped into the Detailed Assessment

17.21. Potential socio-economic effects that will be considered in relation to the construction, decommissioning and operational phases of the Proposed Development include:

- > impacts of temporary employment during the construction phase of the Proposed Development on the local workforce;
- > impacts of a permanent increase in economic activity during the operational phase of the Proposed Development, including the impacts of dual land use and income diversification on the landowners;
- > impacts of permanent employment during the operational phase of the Proposed Development, including consideration of changes to any existing employment on-site (e.g. agricultural), on the local workforce;
- > impacts of temporary use of local accommodation by construction workers using short-term accommodation, on the owners and other visitors to the local area;
- > impacts of permanent loss of, or temporary changes to, local amenity on local users, including displacement of PRowS, community and recreational facilities, visual impacts and local character; and
- > impacts of temporary or permanent changes of land use within the Site and any resultant impacts, such as the displacement of agricultural land uses and employment on the local economy.

Methodology proposed to Undertake Detailed Assessment

Further Baseline Data

17.22. A review of relevant national, regional and local policies will be carried out to identify the key issues relevant to the Proposed Development.

17.23. In addition to the baseline conditions set out above, the assessment of effects will determine baseline conditions for social infrastructure (including healthcare and other public services).

17.24. Data may be used at the ward or county level. Where the 'Zone of Influence' of the Proposed Development differs from these spatial levels, as is often the case when considering the impact on social infrastructure, other metrics such as proximity, travel distances and/or defined planning areas may be more appropriate and will be considered in the baseline scenario.

Construction, Decommissioning and Operation

17.25. The assessment of effects will consider the following in relation to the impacts of the Proposed Development on baseline conditions:

- > The likely scale and duration of impacts of the Proposed Development and any relevant Cumulative Schemes (the approach to cumulative schemes is detailed in Chapter 5); and
 - > The sensitivity of the sensitive receptors to the impacts.
- 17.26. Based on the information available on the baseline conditions, sensitivity of the area and magnitude of any socio-economic impacts, and in the context of local and national policies, professional judgement will be used to evaluate the significance of potential socio-economic effects. There is no published guidance to define the significance of socio-economics effects, but it is recognised that effects are categorised based upon the relationship between the magnitude of effect and the sensitivity of the receptors in question, in line with published Environmental Impact Assessment (EIA) guidance.
- 17.27. The assessment will aim to quantify effects where possible, although where this is not possible some effects will be assessed qualitatively. Effects are defined as follows:
- > Beneficial classifications of effect indicate an advantageous or positive effect on the defined receptors within the study area;
 - > Negligible classifications of effect indicate no perceived effects on the defined receptors within the Study Area;
 - > Adverse classifications of effect indicate a disadvantageous or negative effect on the defined receptors within the Study Area; and
 - > No effect classifications indicate that there are no changes to baseline conditions.
- 17.28. The receptors in the study area for each potential effect will be defined according to the appropriate spatial scale, which may differ for each potential effect. It may be relevant to assess the significance of certain effects at multiple spatial scales (e.g. both locally and regionally).
- 17.29. Based on consideration of the above, where an effect is assessed as being adverse or beneficial, the scale of the effect will be categorised using the following criteria:
- > Minor: the Proposed Development will cause a minor change in existing baseline conditions in terms of absolute and/or a small number of receptors will be affected;
 - > Moderate: the Proposed Development will cause a noticeable change in existing baseline conditions and/or a moderate number of receptors will be affected; and
 - > Major: the Proposed Development will cause a large change in existing baseline conditions and/or the majority of receptors will be affected.
- 17.30. Effects which are found to be moderate or major, whether adverse or beneficial, will be considered to be 'significant'.

Assumptions, Limitations and Uncertainties

There will be a number of assumptions, limitations and uncertainties associated with the assessment of likely significant effects. Where relevant, good practice guidance and professional judgment will be used to ensure a reasonable worst-case approach is adopted.

18. Environmental Topics Scoped Out

- 18.1. There are a number of environmental aspects which, it is proposed, are scoped out of the detailed assessment that will be presented in the ES. This because it is considered that there can be no significant effects occurring to any receptor as a result of these aspects. In accordance with PINS Advice Note Seven, Table 18-1 sets out each of the aspects that it is proposed are scoped out from detailed assessment, with justification provided on why this is considered to be the case.

Table 18-1: Technical Aspects Scoped Out

Technical Aspect	Justification
Glint and Glare	<p>The solar PV modules are designed to absorb as much of the sunlight that illuminates them as is possible, rather than reflecting sunlight. Any light reflecting from them results in the loss of energy output and therefore makes them less efficient. As a result, they are dark in colour, have anti-reflective coatings and are manufactured with low-iron, ultra-clear glass with specialised coatings and textures that enable maximum absorption. The metal frames are also treated with specialised coatings to minimise reflection.</p> <p>In addition, the Proposed Development Design Principles have been devised to further ensure that the potential for glint and glare effects do not occur. This includes imposing appropriate separation distances from the new infrastructure to any sensitive receptor, and the introduction of new landscaping that will act as a screen, ensuring that local sensitive receptors, in particular residential properties but not limited to these, cannot view the new infrastructure.</p> <p>Detailed geometric analysis will be undertaken using a bespoke glint and glare model to ensure that any reflected sunlight that does still occur from the solar PV modules, despite all the measures implemented, will be directed away from locations that will make it noticeable to any sensitive receptors. The results of the geometric analysis will influence the design and layout of the Proposed Development to reduce the potential for glint and glare occurring to sensitive receptors within the locality.</p>

For all these reasons it is considered that there will be no significant effects from glint and glare. However it is acknowledged the National Policy Statement EN-3 states in Section 2.52.4: “Solar PV panels are designed to absorb, not reflect, irradiation. However, the Secretary of State should assess the potential impact on glint and glare on nearby homes and motorists”. It is therefore proposed a detailed stand-alone Glint and Glare assessment report will be included as a technical appendix to the ES, and details will be provided in the PEIR. A description of the relevant design measures and safety considerations related specifically to Glint and Glare will also be included within the Proposed Development description chapter of the ES.

Risk of Major Accidents and Disasters

‘Accidents’ are considered to be an occurrence resulting from uncontrolled events in the course of construction and operation of a development (e.g. major emission, fire or explosion). ‘Disasters’ are considered to be naturally occurring extreme weather events or ground related hazard events (e.g. subsidence, landslide, earthquake).

Given the nature and type of development, it is considered that the Proposed Development is unlikely to result in any type of major accident/ disaster. There is a strict legislative framework that governs construction activities so as to ensure risks are clearly managed to an acceptable level. A variety of guidance, including to ensure pollution prevention, also exists. Bearing all these in mind, a Construction Environmental Management Plan will be produced, to be submitted to PINS for approval prior to construction commencing, that will detail the measures that will be implemented to ensure that major accidents are avoided.

The Proposed Development will be designed and operated in accordance with all legislative requirements that relate to this type of facility. As discussed in Chapter 3, a management plan for battery safety will be prepared and submitted with the DCO Application. This Plan will detail the regulatory guidance reviewed and how these will be responded to, so as to ensure that all safety concerns around the BESS element of the Proposed Development are addressed in so far as is reasonably practicable.

During operation, safety processes will be reviewed, and if required, updated to ensure that the operations do not increase the risk or result in a major accident.

The location of the Site is outside of an area where natural disasters have historically occurred. It is not an area at high risk from major earthquakes or subsidence, or because of the Site's flat nature, likely to suffer from landslides. Parts of the Site do flood albeit the Proposed Development, including the way it is constructed and operated, is being designed so as to withstand any flooding should it occur.

Furthermore, the infrastructure associated with solar is considered of low susceptibility to the impact of natural disasters. There is limited potential for a disaster occurring at a solar farm to create a hazardous pollution risk, with limited need for hazardous substances in solar farm operation. It is battery storage where the highest risk of such occurs, but with good design and simple measures implemented, the risk of such will be managed.

As a result, it is considered that there can be no significant effect as a result of a natural disaster and as such it is scoped out of detailed assessment.

Waste

Waste will inevitably be generated as a consequence of the enabling and construction works for the Proposed Development. However, waste strategies including extensive commitments to reduce the generation of waste and to divert waste from landfill will be considered and set out in the ES. Furthermore, a Site Waste Management Plan (SWMP) will be prepared for the enabling and construction works. This will ensure that construction waste arisings will be effectively controlled, and that good Site management practice will be implemented to minimise the generation of waste and maximise the reuse or recycling of waste materials that arise from the construction where practicable.

Once operational, very limited waste and only associated with maintenance operations is expected to be produced by the Proposed Development.

As a result it is not proposed that a Chapter specifically related to the assessment of waste will be provided. However, the product of waste and its transportation from the Site will be considered within the relevant ES chapters including, in particular, that for traffic and transport.

Wind Microclimate

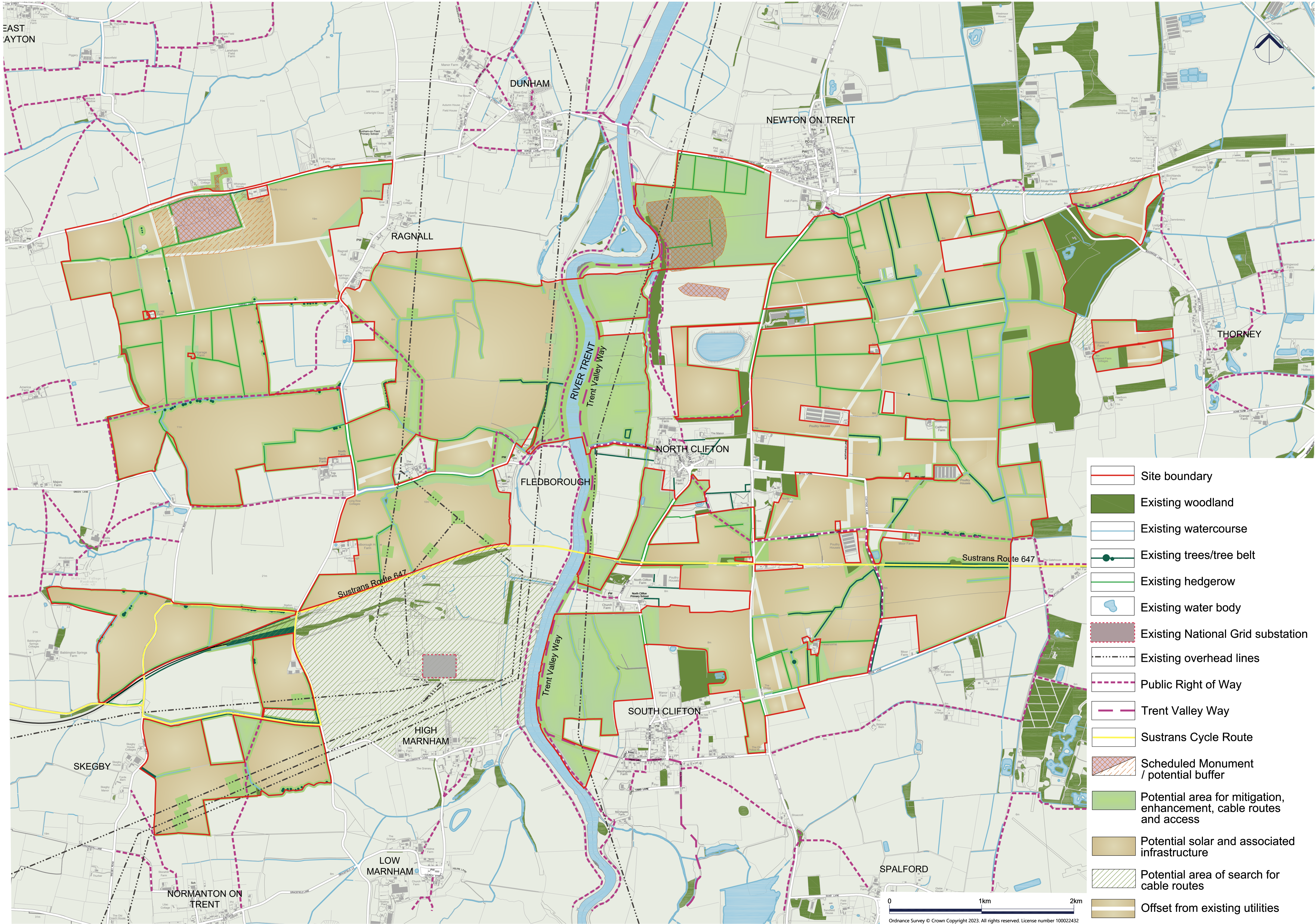
It is proposed to 'scope out' Wind Microclimate from detailed assessment. The potential for likely significant effects in relation to Wind Microclimate is generally assessed in respect of the Lawson Comfort Criteria to determine the differing level of impact on assessed locations. The generation of significant Wind Microclimate effects is typically associated with taller developments in highly urbanised environments.

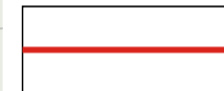








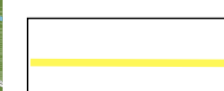
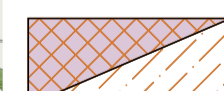



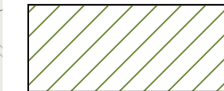

Given the low-rise nature of the Proposed Development, the off-site wind conditions are likely to remain broadly similar, and as a result the construction and operation of the Proposed Development is unlikely to generate any pedestrian comfort on the PRowS or safety exceedances due to the alteration of on-site wind conditions. As such no technical assessment of Wind Microclimate is considered necessary in respect of the Proposed Development and this aspect is scoped out of the EIA.

Appendices

Appendix A	195
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Appendix A



-  Site boundary
-  Existing woodland
-  Existing watercourse
-  Existing trees/tree belt
-  Existing hedgerow
-  Existing water body
-  Existing National Grid substation
-  Existing overhead lines
-  Public Right of Way
-  Trent Valley Way
-  Sustrans Cycle Route
-  Scheduled Monument / potential buffer
-  Potential area for mitigation, enhancement, cable routes and access
-  Potential solar and associated infrastructure
-  Potential area of search for cable routes
-  Offset from existing utilities



one earth
solar farm



SCOPING OPINION:

Proposed One Earth Solar Farm

Case Reference: EN010159

Adopted by the Planning Inspectorate (on behalf of the Secretary of State) pursuant to Regulation 10 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

22 December 2023



TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	OVERARCHING COMMENTS	3
2.1	Description of the Proposed Development	3
2.2	EIA Methodology and Scope of Assessment	9
3.	ENVIRONMENTAL ASPECT COMMENTS	15
3.1	Biodiversity.....	15
3.2	Hydrology and Hydrogeology.....	20
3.3	Land and Soils.....	23
3.4	Buried Heritage	26
3.5	Cultural Heritage	28
3.6	Landscape and Visual	32
3.7	Transport and Access	36
3.8	Air Quality	38
3.9	Carbon and Climate Change	40
3.10	Noise and Vibration.....	43
3.11	Human Health.....	47
3.12	Socio-Economics	52
3.13	Environmental Topics Scoped Out	55

APPENDIX 1: CONSULTATION BODIES FORMALLY CONSULTED

APPENDIX 2: RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

1. INTRODUCTION

- 1.0.1 On 13 November 2023, the Planning Inspectorate (the Inspectorate) received an application for a Scoping Opinion from One Earth Solar Farm Ltd (the Applicant) under Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) for the proposed One Earth Solar Farm (the Proposed Development). The Applicant notified the Secretary of State (SoS) under Regulation 8(1)(b) of those regulations that they propose to provide an Environmental Statement (ES) in respect of the Proposed Development and by virtue of Regulation 6(2)(a), the Proposed Development is 'EIA development'.
- 1.0.2 The Applicant provided the necessary information to inform a request under EIA Regulation 10(3) in the form of a Scoping Report, available from:
<http://infrastructure.planninginspectorate.gov.uk/document/EN010159-000005>
- 1.0.3 This document is the Scoping Opinion (the Opinion) adopted by the Inspectorate on behalf of the SoS. This Opinion is made on the basis of the information provided in the Scoping Report, reflecting the Proposed Development as currently described by the Applicant. This Opinion should be read in conjunction with the Applicant's Scoping Report.
- 1.0.4 The Inspectorate has set out in the following sections of this Opinion where it has/ has not agreed to scope out certain aspects/ matters on the basis of the information provided as part of the Scoping Report. The Inspectorate is content that the receipt of this Scoping Opinion should not prevent the Applicant from subsequently agreeing with the relevant consultation bodies to scope such aspects/ matters out of the ES, where further evidence has been provided to justify this approach. However, in order to demonstrate that the aspects/ matters have been appropriately addressed, the ES should explain the reasoning for scoping them out and justify the approach taken.
- 1.0.5 Before adopting this Opinion, the Inspectorate has consulted the 'consultation bodies' listed in Appendix 1 in accordance with EIA Regulation 10(6). A list of those consultation bodies who replied within the statutory timeframe (along with copies of their comments) is provided in Appendix 2. These comments have been taken into account in the preparation of this Opinion.
- 1.0.6 The Inspectorate has published a series of advice notes on the National Infrastructure Planning website, including [Advice Note 7: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping \(AN7\)](#). AN7 and its annexes provide guidance on EIA processes during the pre-application stages and advice to support applicants in the preparation of their ES.
- 1.0.7 Applicants should have particular regard to the standing advice in AN7, alongside other advice notes on the Planning Act 2008 (PA2008) process, available from:

<https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

- 1.0.8 This Opinion should not be construed as implying that the Inspectorate agrees with the information or comments provided by the Applicant in their request for an opinion from the Inspectorate. In particular, comments from the Inspectorate in this Opinion are without prejudice to any later decisions taken (e.g. on formal submission of the application) that any development identified by the Applicant is necessarily to be treated as part of a Nationally Significant Infrastructure Project (NSIP) or Associated Development or development that does not require development consent.

2. OVERARCHING COMMENTS

2.1 Description of the Proposed Development

(Scoping Report Chapter 3)

ID	Ref	Description	Inspectorate's comments
2.1.1	Paragraphs 2.24 to 2.28 and Appendix A	Existing utilities	<p>Paragraphs 2.24 to 2.28 describe the existing utilities within the Proposed Development site, although it is stated in paragraph 2.28 that utilities searches are ongoing and will inform the design of the Proposed Development. Appendix A of the Scoping Report shows offset distances from existing utilities.</p> <p>The ES should explain the findings of the utility searches, identify any impacts and, where applicable, signpost to where any required mitigation measures are secured.</p>
2.1.2	Paragraphs 2.8, 2.9, 3.29, and 7.39	River Trent cable crossing	<p>Paragraph 3.29 states that cabling will be required to cross the River Trent however the method of cabling is not provided. The ES should detail the crossing method and ensure this is assessed throughout. Where flexibility is sought, the ES should consider the appropriate worst-case scenario within each of the aspect assessments. The Applicant's attention is drawn to ID 2.2.1 below regarding flexibility.</p> <p>Paragraph 7.39 highlights that any cable routing under or over the River Trent Main Channel may require environmental permits from the Environment Agency. As noted in the Scoping Report the redline boundary of the Proposed Development crosses the River Trent at a point where it is tidal. The Applicant should therefore also consider whether a Deemed Marine Line (DML) will be required to be included within the Development Consent Order (DCO) to allow for any works within the tidal reaches of the River Trent. The Applicant should consult with the Marine Management Organisation (MMO) in this</p>

ID	Ref	Description	Inspectorate's comments
			regard. The Applicant's attention is drawn to the consultation response from the MMO (Appendix 2 of this Opinion).
2.1.3	Paragraphs 3.9 to 3.11	Panel types	It is noted that at this stage two panel types are being considered: fixed south-facing and tracker panels. Paragraph 3.10 states that further detail regarding the panel mounting structures will inform the DCO but it is unclear whether the decision regarding the panel type would be made prior to application submission, or whether flexibility would be sought within the DCO. It is assumed that the maximum height of the panels of 3.8m (as stated in paragraph 3.11) includes the height of tracker panels at maximum tilt, however this is not specified. The Applicant's attention is drawn to ID 2.2.1 regarding flexibility.
2.1.4	Paragraph 3.17	Switchgear	The type of switchgear proposed is not stated in the Scoping Report. The ES should provide detail on the type of switchgear proposed. The Proposed Development should avoid the use of sulphur hexafluoride (SF6)-reliant assets wherever possible. Where this is not possible evidence and reasoning should be provided regarding the alternatives considered. Where SF6 is unavoidable the ES should include commitments to monitor and control fugitive emissions of this pollutant.
2.1.5	Paragraphs 3.21 and 3.22	Battery Energy Storage System (BESS)	Paragraph 3.21 implies that multiple BESSs would be employed across the site and paragraph 3.22 provides the typical dimensions of a containerised battery unit. Although it is noted (in paragraph 3.21) that the locations of the BESS are not yet confirmed, the ES should state the anticipated number of BESS units and their anticipated location(s) within the site, assuming a worst-case scenario where there is uncertainty.

ID	Ref	Description	Inspectorate's comments
2.1.6	Paragraph 3.23	Substations	<p>It is stated that the number of substations is currently unknown and will be informed by technical and environmental aspects. The ES should explain how the final position has been reached, demonstrating how environmental effects have influenced the decisions made. The Applicant's attention is drawn to ID 2.2.1 below regarding flexibility.</p>
2.1.7	Paragraphs 3.25 to 3.30	Cabling	<p>A description of the cabling, including the export cable to connect the Proposed Development to the Point of Connection at High Marnham substation, is included within paragraphs 3.25 to 3.30. It is stated (in paragraph 3.27) that the exact method of cabling is not yet determined although open-cut or horizontal directional drilling would be used. It is stated that both low and higher voltage onsite cabling would be used and that higher voltage cables would likely be laid underground in trenches in accordance with British standards. Appendix A shows the potential search area for cable routes to connect the Proposed Development to the High Marnham substation although the specific cable route is not yet determined, and it is not clear whether this export cable would be buried or overhead, although it is noted that the final cable route would be provided within the DCO application.</p> <p>The ES should clarify the cabling method/ methods and ensure this is appropriately assessed within the ES. The Applicant's attention is drawn to ID 2.2.1 regarding flexibility.</p> <p>The ES should also specify the voltage of each of the cables required. In line with relevant guidance (DECC Power Lines: Demonstrating compliance with EMF public exposure guidelines, A Voluntary Code of Practice 2012), cables above 132kV have potential to cause electro-magnetic field (EMF) effects. The Inspectorate considers that the ES should demonstrate the design measures taken to avoid the potential</p>

ID	Ref	Description	Inspectorate's comments
			for EMF effects on receptors from the cable and substation infrastructure.
2.1.8	Paragraphs 3.25 to 3.30	Land use of cable route	The Scoping Report has not provided information on current land uses along the proposed cable route and whether these uses can be continued during operation should this be the chosen option. The ES should consider the need for jointing and inspection pits which may limit subsequent land use.
2.1.9	Paragraph 3.36 and Figure 3-6	Access points	<p>Paragraph 3.36 states that the primary points of access during operation would be from the A57 and A1133 however Figure 3-6 shows indicative primary access points also from Main Street, Far Road/ Crabtree Lane and Polly Taylor's Road.</p> <p>The ES should be consistent in identifying the proposed points of access and justify their selection. Effort should be made to agree these with relevant consultation bodies.</p>
2.1.10	Paragraph 3.44	Construction compounds and haul roads	The Scoping Report notes that construction compounds and temporary haul roads are proposed on-site. The ES should indicate where these would be located and what is proposed in these locations during the construction and decommissioning phases to inform the assessment of effects.
2.1.11	Paragraphs 3.49 and 12.31	Abnormal loads	<p>The Scoping Report states that Abnormal Individual Loads (AIL) may be required for the transportation of large components during construction.</p> <p>The Inspectorate recommends the consideration of water-borne or rail transportation over road transport where feasible, in line with the Overarching NPS for Energy (EN-1). The Applicant's attention is drawn to the consultation response from the Canal and River Trust (Appendix 2 of this Opinion) in this regard.</p>

ID	Ref	Description	Inspectorate's comments
2.1.12	Paragraphs 3.53 and 3.54	Management plans	Paragraphs 3.53 and 3.54 describe the operational phase including the proposed maintenance activities. No reference is made to an operational phase environmental management plan, although it is noted that a Soils Resource Management Plan, Landscape and Ecological Management Plan (LEMP), and battery safety plan are proposed. The ES should be clear on what management plans would be in place during which phases of the Proposed Development and how these are secured within the DCO.
2.1.13	Paragraph 3.54	Maintenance	<p>The Scoping Report states that during operation minor maintenance works would take place. The stated definition of maintenance is: <i>"inspect, repair, adjust, alter, remove, refurbish, reconstruct, replace and improve any part of, but not remove, reconstruct or replace the whole of the solar infrastructure (including the BESS)"</i>.</p> <p>Noting that a time-limited consent is not being sought, the ES should ensure that the operational phase has been appropriately assessed to such an extent that the comprehensive replacement of panels and associated infrastructure has been considered, for example in relation to traffic movements and waste generation. The ES should also seek to define limits to the scale of maintenance works, for example the maximum number of panels replaced over a given period, so that any assumptions that underpin traffic predictions and the assessment of effects are clear, and potential effects can be fully understood.</p>
2.1.14	All figures	Site boundary	Appendix A shows the potential search area for cable routes to connect the Proposed Development to the High Marnham substation. On Appendix A it appears that this area is outside of the 'site boundary'. Figures 2-4, 10-1, and 10-2 also exclude this area from the site boundary whilst all other figures within the Scoping Report include it. There is therefore inconsistency across the figures within

ID	Ref	Description	Inspectorate's comments
			<p>the Scoping Report and it is unclear whether the scope proposed takes into account the area for the proposed cable route.</p> <p>The ES should ensure that the site boundary is consistent across all figures as well as with the application plans. Any assessment (including baseline surveys) should be based on the entirety of the site boundary. Where flexibility is sought in the final cable route the Applicant should ensure that the baseline is adequate to ensure that a worse-case scenario is assessed. The Applicant should make efforts to agree the scope of baseline surveys with the relevant consultation bodies. Where it is agreed that surveys are not required to support the submission of the DCO but may be required to ensure that subsequent micro-siting avoids adverse effects, then the mechanism for securing such investigations should be clearly identified.</p>

2.2 EIA Methodology and Scope of Assessment

(Scoping Report Chapter 5)

ID	Ref	Description	Inspectorate's comments
2.2.1	Paragraphs 5.2 and 5.3	Flexibility	<p>The Inspectorate notes the Applicant's intention to utilise the 'Rochdale Envelope' approach regarding the design and layout of the Proposed Development.</p> <p>The Inspectorate expects that, at the point an application is made, the description of the Proposed Development is sufficiently detailed to include the design, size (including heights), capacity, technology, and locations of the different elements of the Proposed Development. This should include the footprint and heights (and depths) of the structures (relevant to existing ground levels), as well as land-use requirements for all elements and phases of the Proposed Development. The project description should be supported (as necessary) by figures, cross-sections, and drawings which should be clearly and appropriately referenced.</p> <p>Where flexibility is sought, the ES should clearly set out and justify the maximum design parameters that would apply for each option assessed and how these have been used to inform an adequate assessment in the ES, recognising that this may differ depending on the assessment being undertaken, although the Inspectorate notes the Applicant's intention to assess a reasonable worst-case scenario (as stated in paragraph 5.3). The Applicant should make every attempt to narrow the range of options and explain clearly in the ES which elements of the Proposed Development are yet to be finalised and provide relevant justification.</p>

ID	Ref	Description	Inspectorate's comments
2.2.2	Paragraph 5.4	Alternatives	<p>The Scoping Report states that alternatives and design constraints will be described within a separate chapter of the ES to demonstrate how environmental considerations have been taken into account in the Proposed Development design. No further information on the content of this chapter is provided within the Scoping Report.</p> <p>The ES should explain the factors which have influenced site selection and design. For example, the ES should explain how the design evolution of the Proposed Development has ensured that preference has been made for poorer quality agricultural land instead of Best and Most Versatile (BMV) agricultural land.</p>
2.2.3	Paragraph 5.16	Study areas/ Zone of Influence (ZOI)	<p>Paragraph 5.16 states that study areas have been defined individually for each aspect chapter taking into account the geographic scope of the potential impacts. Although it is stated that the proposed study areas are described within chapters 6 to 17 of the Scoping Report, some of the chapters (for example, Hydrology and Hydrogeology and Land and Soils) do not describe the study areas.</p> <p>The ES should clearly set out how study areas have been defined for all aspects, along with a justification for the approach, including references to consultation responses. The Inspectorate agrees that the study areas/ ZOI should be based on the potential for likely significant effects to occur rather than an arbitrary distance as proposed in paragraph 5.16. The study areas and receptors should be depicted on corresponding figures to aid understanding.</p>
2.2.4	Paragraph 5.21	Assessment years	<p>It is stated that the ES will assess the operational Proposed Development "<i>for the first full year of operation and the year considered to be when maximum environmental effects occur</i>". It is unclear whether this represents the same year. The ES should clearly describe the assessment years proposed and provide justification that these represent a worst-case scenario.</p>

ID	Ref	Description	Inspectorate's comments
2.2.5	Paragraph 5.22	Operational lifespan	<p>The Scoping Report states (in paragraph 5.22) that an operational lifespan of 45 years is proposed to be assessed however it is stated (in paragraph 3.55) that that the operational life of the Proposed Development would not be specified, and the Applicant is not seeking a time-limited consent, noting that this is dependent on whether any effects would justify the time period of the consent being limited.</p> <p>Paragraph 5.22 states that <i>"this is a realistic timeframe based on current practices and will be used as an approximate to assess the likely significant effects from the decommissioning phase"</i>. The ES should provide further justification on how an assessment of 45 years operational lifespan is appropriate considering there is potential for the Proposed Development to operate beyond this time.</p> <p>The Applicant should ensure that the approach to assessment is consistent with the consent being sought. If it is determined that the consent sought is not proposed to be time-limited, the ES should assess effects for the operational phase as permanent to ensure a worst-case scenario is assessed. The assessment of the operational phase should also consider the potential for the components to be replaced to extend the lifespan of the Proposed Development; the Applicant's attention is drawn to ID 2.1.13 in this regard.</p>
2.2.6	Paragraph 5.32	Cumulative assessment	<p>The Scoping Report states that only projects within 5km will be assessed within the cumulative assessment. The ES should fully justify this search area with reference to relevant guidance and the likely extent of impacts. Effort should be made to agree the methodology for each aspect assessment, including the developments selected, with the relevant consultation bodies and provide evidence of this within the application documents.</p> <p>The Applicant should also consider an iterative cumulative assessment which considers additional schemes as they come forward. The Applicant's attention is drawn to the Inspectorate's</p>

ID	Ref	Description	Inspectorate's comments
			'Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects' in this regard.
2.2.7	Paragraph 5.35	Interactive effects	It is stated (in paragraph 5.35) that " <i>interactive effects will be dealt with either in the relevant technical aspect Chapter...or where they have the potential to affect human health, then within the Health Chapter</i> ". Where interactive effects are relevant to multiple aspect chapters, the ES should use cross-references between chapters where appropriate.
2.2.8	Paragraph 5.37	Transboundary	<p>The Inspectorate on behalf of the SoS has considered the Proposed Development and concludes that the Proposed Development is unlikely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State. In reaching this conclusion the Inspectorate has identified and considered the Proposed Development's likely impacts including consideration of potential pathways and the extent, magnitude, probability, duration, frequency and reversibility of the impacts.</p> <p>The Inspectorate considers that the likelihood of transboundary effects resulting from the Proposed Development is so low that it does not warrant the issue of a detailed transboundary screening. However, this position will remain under review and will have regard to any new or materially different information coming to light which may alter that decision.</p> <p>Note: The SoS' duty under Regulation 32 of the 2017 EIA Regulations continues throughout the application process.</p> <p>The Inspectorate's screening of transboundary issues is based on the relevant considerations specified in the Annex to its Advice Note Twelve, available on our website at http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/</p>

ID	Ref	Description	Inspectorate's comments
2.2.9	Paragraph 5.44	Scoping table	This paragraph states that each aspect chapter of the ES will set out how the methodology responds to the Scoping Opinion. The Inspectorate recommends the use of a table demonstrating how the matters raised in the Scoping Opinion have been addressed in the ES and/ or associated documents is provided. It is also recommended that a table is provided in the ES to set out key changes in parameters/ options of the Proposed Development presented in the Scoping Report to those presented in the ES.
2.2.10	Chapters 7 and 9 and paragraph 17.30	Assumptions, limitations, and uncertainties	Assumptions, limitations, and uncertainties are not listed in chapters 7 and 9 of the Scoping Report. Chapter 17 (specifically paragraph 17.30) states that there " <i>will be a number of assumptions, limitations, and uncertainties associated with the assessment of likely significant effects</i> " however these are not listed in the Scoping Report. The ES should fully describe any assumptions, limitations, and uncertainties for each assessment. Where none are made then this should be clearly stated in the respective ES chapter(s).
2.2.11	N/A	Duration of effects	<p>The duration of effects is not defined within the EIA methodology chapter of the Scoping Report (Chapter 5). The duration of effects appears to differ across aspect chapters, for example paragraph 11.54 states that for landscape and visual effects, 'short term' effects are considered to be two years or less, 'medium term' effects are considered to be between two and five years, and 'long-term' effects are considered to be more than five years. Paragraph 16.30 states that for human health less than five years, five to fifteen years, and more than fifteen years are used to describe the same terms respectively.</p> <p>Durations should be determined with reference to relevant guidance and where possible should be applied consistently across topics to</p>

ID	Ref	Description	Inspectorate's comments
			allow comparisons and an understanding of concurrent effects. Where adopted definitions differ, justification should be provided.
2.2.12	N/A	Professional judgement	The Scoping Report refers to the use of professional judgement. The ES should clearly identify where professional judgement has been relied upon to determine the level of significance of effects. Any use of professional judgement to assess significance should be fully justified within the ES.

3. ENVIRONMENTAL ASPECT COMMENTS

3.1 Biodiversity

(Scoping Report Chapter 6)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.1.1	Paragraphs 6.10, 6.34, and 6.36	European and Nationally designated sites	<p>Paragraph 6.34 lists the ecological features requiring detailed assessment however European or Nationally designated sites are not listed. Also, no reference is made to impacts on designated sites within paragraph 6.36 which states the matters scoped in to detailed assessment. It is therefore unclear whether effects on these sites are proposed to be scoped out.</p> <p>Paragraph 6.15 states that no European sites are located within 10km of the site boundary and the closest Site of Special Scientific Interest (SSSI) is located approximately 1.9km away. This is inconsistent with paragraph 2.11 which states that the nearest SSSI is 5km to the southeast of the site. It is therefore unclear whether there are any other SSSIs which have the potential to be affected; Table 6-2 refers to Spalford Warren SSSI and Besthorpe Warren SSSI – please see ID 3.1.2 below.</p> <p>The Inspectorate recommends that ZOI are shown on a figure or figures; the Applicant's attention is drawn to ID 2.2.3 above in this regard. In the absence of further information, such as all designated sites for which an impact pathway exists and the designated features of these sites, the Inspectorate does not agree to scope out this matter at this time. The ES should include an assessment of all European and Nationally designated sites for which an impact pathway exists, including hydrological connectivity and where the site boundary may provide foraging resource of qualifying features of sites. The ES should list all the European, National, and Local</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			designated sites within the selected study areas as has been done for Local Wildlife Sites (LWSs) in paragraph 6.16 of the Scoping Report.
3.1.2	Table 6-2	Emissions from plant and traffic serving the site – construction and decommissioning	<p>The Applicant proposes to scope out emissions from construction and decommissioning plant and traffic due to there being no European designated sites within 200m of any roads on which traffic serving the site would lead to a detectable increase in traffic. The Scoping Report also states that during construction and decommissioning the increase in traffic will be temporary and limited, so the extent of any effect will be low, temporary, and reversible.</p> <p>Paragraph 3.45 of the Scoping Report states that the construction site access points and routes are not yet determined however access to the eastern portion of the site will be via the A1133. Table 6-2 notes that there are two SSSIs within 200m of the A1133, but it is stated that this is "<i>unlikely to be a major construction traffic route</i>". There is therefore inconsistency within the Scoping Report as to whether the A1133 will be used for construction traffic routing. The Applicant's attention is drawn to ID 2.1.9 in this regard.</p> <p>Considering the lack of certainty regarding the traffic routing during construction/ decommissioning, and the number of vehicles required during these phases not being provided, the Inspectorate is not in a position to scope this matter out at this stage. The ES should include an assessment of this matter, or the information required to demonstrate the absence of a likely significant effect.</p>
3.1.3	Table 6-2	EMF	EMF effects on ecological features are proposed to be scoped out as the cabling proposed is already existent in many other infrastructure projects across the country and there is no evidence that these have affected ecological features. It is stated that soil heating from cables

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p>could occur, but this would be limited to between 1m and 1.5m from the cable.</p> <p>Cabling depths are not provided within the Scoping Report nor is it explicitly stated that cabling would be buried, despite the wording within Table 6-2 suggesting this. Paragraph 3.26 states that the method of onsite cabling, which includes the cable crossing the River Trent, is not yet known.</p> <p>In the absence of further information, such as details on the final cabling method and route, the Inspectorate is not in a position to scope this matter out at this stage. The ES should consider the potential for EMF effects to occur to ecological receptors including those within the River Trent. The ES should also clarify the cabling method required to cross the River Trent and describe any design measures in place which would limit the potential for EMF effects. The Applicant's attention is drawn to the consultation response from the Environment Agency (Appendix 2 of this Opinion) in this regard.</p>
3.1.4	Paragraph 6.44	Ecological features	<p>The Scoping Report states that detailed assessment of ecological features will be scoped out where no potential for significant effects is identified following the implementation of embedded mitigation measures.</p> <p>Where mitigation measures are relied upon for avoiding what would otherwise be likely significant effects these effects should be reported within the ES along with the proposed mitigation measures and the mechanism by which they are proposed to be secured.</p>

ID	Ref	Description	Inspectorate's comments
3.1.5	Table 6-1 and Appendix A	Trees	<p>Table 6-1 identifies a ZOI of 0.5km for veteran trees and Appendix A shows the location of existing trees within the Proposed Development site boundary although the status of these trees is not provided.</p> <p>The ES should clearly identify whether there are any veteran trees, ancient trees/ woodland, and/ or trees subject to a Tree Preservation Order within the site boundary. The ES should assess likely significant effects on these and describe any measures in place to mitigate potential likely significant effects on trees, such as suitable buffer zones including root protection zones.</p>
3.1.6	Paragraphs 6.5 to 6.14	Ecological surveys	<p>Paragraph 6.5 states that a range of ecology surveys have been completed, are ongoing, or are planned and these are described in paragraphs 6.6 to 6.14.</p> <p>The Applicant should seek agreement from relevant consultation bodies regarding the scale, extent, and timing of these surveys to ensure the ecological baseline is robust. Evidence of this consultation should be provided within the application documents.</p> <p>The ES should also describe any assumptions, limitations, and uncertainties associated with the surveys.</p>
3.1.7	N/A	Figures	<p>The Scoping Report does not include a figure showing the designated sites within the vicinity of the Proposed Development site. The Applicant is recommended to include figures within the ES to facilitate understanding of the baseline conditions in respect to ecological sites.</p>
3.1.8	N/A	Confidential annexes	<p>Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information,</p>

ID	Ref	Description	Inspectorate's comments
			should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.

3.2 Hydrology and Hydrogeology

(Scoping Report Chapter 7)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.2.1	Table 7-1	Foul Water	<p>The Applicant proposes to scope out an assessment of the impacts of an increase in foul water flows on the capacity of the surrounding Anglian Water and Severn Trent network and the wastewater treatment works. The reasoning provided is that the Proposed Development would utilise existing foul water infrastructure or would use welfare facilities which are unconnected to the mains.</p> <p>The Inspectorate notes the consultation response from Anglian Water (Appendix 2 of this Opinion) which welcomes the <i>"non-inclusion of provisions in the draft Development Consent Order (DCO) which would allow for a right of connection to the public sewer"</i>.</p> <p>Considering the nature of the Proposed Development the Inspectorate is content to scope this matter out subject to the ES confirming the method of disposal for foul water and demonstrating this would not result in a likely significant effect, particularly with regard to existing capacity of wastewater treatment facilities either from existing infrastructure or if unconnected from the mains. The ES should also demonstrate agreement with the relevant consultation bodies.</p>
3.2.2	Table 7-1	Construction and decommissioning	<p>The Applicant proposes to scope out an assessment of effects associated with construction and decommissioning activities namely potential impacts associated with localised flood risk from earthworks, silt laden runoff, chemical spillages, and cement and concrete dust. It is stated that construction and decommissioning activities would be controlled via measures within a Construction Environmental Management Plan (CEMP), which would include a Construction Surface Water Management Plan, and Decommissioning</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p>Environmental Management Plan (DEMP). It is also stated that a temporary drainage system may also be implemented for construction.</p> <p>Considering the reliance on mitigation measures, which are as yet unspecified, the Inspectorate does not agree to scope an assessment of these matters out. The ES should provide an assessment of these matters as well as further details on the specific mitigation measures required to avoid likely significant effects.</p>

ID	Ref	Description	Inspectorate's comments
3.2.3	Paragraph 7.23	Mitigation – offsets	<p>The Scoping Report states that suitable offsets will be provided to ensure that ecological corridors are maintained and access for maintenance works is provided. Information on the offsets proposed should be provided in the ES along with details on how this is secured within the DCO. The offset distances should be agreed with relevant consultation bodies where possible.</p>
3.2.4	Paragraph 7.28	Water quality	<p>The Scoping Report states that a detailed assessment of effects of the Proposed Development on the quality and quantity of surface water runoff will be undertaken. It is stated that a sustainable drainage system (SuDS) would be implemented to ensure that the quantity and quality of runoff will match the greenfield scenario.</p> <p>The ES should fully describe the SuDS and measures in place to limit impacts on water quality, including potential leakage from the BESS and firewater, as well as any chemicals required to clean PV panels should these be proposed.</p>

ID	Ref	Description	Inspectorate's comments
3.2.5	Paragraph 7.28	Water Framework Directive (WFD) assessment	<p>The Scoping Report states that should the ES show that there will be no significant effects and the works would not cause or contribute to the deterioration of the status of the existing watercourses or jeopardise the watercourses achieving good status, a WFD assessment would not be undertaken in support of the application.</p> <p>The Inspectorate is of the opinion that further information is required detailing why a full assessment is not required, such as a Stage 1 WFD Screening assessment. The Applicant should agree the conclusions of the WFD assessment with the Environment Agency and provide evidence of this within the application documents.</p> <p>The Applicant's attention is drawn to the Inspectorate's 'Advice Note Eighteen: The Water Framework Directive' as well as the consultation response from the Environment Agency (Appendix 2 of this Opinion) in this regard. The ES should explain the relationship between the Proposed Development and any relevant water bodies in relation to the current relevant River Basin Management Plan.</p>
3.2.6	N/A	Methodology – significance	<p>The methodology for determining the significance of effects has not been explained in this chapter of the Scoping Report.</p> <p>The ES will need to set out how any likely significant effects have been determined, by fully explaining how the baseline has informed the assessment and the method used for determining likely significant effects based on the impacts from the Proposed Development and the sensitivity of receptors considered in the assessment. Any use of professional judgement to assess significance should be fully justified within the ES.</p>

3.3 Land and Soils

(Scoping Report Chapter 8)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.3.1	Table 8-1	Physical damage to the soil – operation	<p>The Applicant proposes to scope out physical damage to soil during operation on the basis that there is likely to be limited trafficking and disturbance of soil during the operational phase of the Proposed Development and risk of soil damage is unlikely to occur.</p> <p>Considering the characteristics of the Proposed Development the Inspectorate agrees that damage to soil is unlikely to occur during operation. Therefore, this matter can be scoped out subject to further details on the operational phase, including type and number of vehicles required for on-site maintenance, including potential replacement of panels to extend the operational lifespan, being provided within the ES to justify this.</p>
3.3.2	Table 8-1	Land and groundwater contamination – construction and decommissioning	<p>The Applicant proposes to scope out land and groundwater contamination for all phases on the basis that the site has historically been used for agricultural purposes. The Applicant considers that measures set out in the CEMP would ensure that no likely significant effects will occur from existing contamination during groundworks in the construction phase.</p> <p>The Inspectorate is not content to scope this matter out. Previous agricultural usage does not mean that existing contamination does not exist on-site. The Scoping Report makes no reference to a Preliminary Risk Assessment (PRA) and so it is not clear whether this would be conducted to determine the risks relating to contamination. As such, there remains a risk that burial pits, fuel/ oil or agrichemical spills, or areas of waste burial may be present. The ES should be supported by the findings of a PRA and where land contamination is</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			identified, the ES should assess significant effects where they are likely to occur.
3.3.3	Table 8-1	Land and groundwater contamination – operation	Considering the characteristics of the operational phase of the Proposed Development, the Inspectorate is content that land and groundwater contamination is unlikely to result in significant effects and therefore this matter can be scoped out of further assessment. However, the ES should describe any measures in place to reduce the potential for contamination during operation, such as measures to prevent discharge, leakage, or fire from the BESS and any chemicals required for washing of PV panels if proposed.

ID	Ref	Description	Inspectorate's comments
3.3.4	Paragraphs 8.9 and 8.15 and Figure 8-1	Baseline surveys	<p>The ES should clearly identify the area of BMV land across the Proposed Development site. This should be provided per grade and should also differentiate between subgrades 3a and 3b.</p> <p>Auger measurements taken to inform the Agricultural Land Classification (ALC) survey by the Applicant should ensure that a sufficient number of augers are used across the site to accurately inform the assessment in line with relevant guidance and/ or standards. The Inspectorate advises that the ES should consider Natural England's Technical Information Note (TIN)049 or justify why they consider their surveying methodology approach is sufficient in the ES.</p>
3.3.5	Paragraphs 8.14 and 8.18, Table	Determination of significant effects – agricultural land	Paragraph 8.14 of the Scoping Report states that any agricultural land loss from the Proposed Development would be temporary and paragraph 8.18 states that potential significant adverse effects are

ID	Ref	Description	Inspectorate's comments
	8-3, and Table 8-4		<p>considered where there is a permanent loss of over 20 ha or more of BMV agricultural land.</p> <p>Considering a time-limited consent is not being sought, and the operational lifespan is assumed to be 45 years, the Inspectorate is of the opinion that the operational phase cannot reasonably be considered temporary. On this basis the Applicant should assess the impact of the Proposed Development on the effective loss of agricultural land for the duration of the Proposed Development's lifetime including construction, operation, and decommissioning. The Applicant's attention is drawn to ID 2.2.5 above.</p> <p>The ES should demonstrate whether the proposal allows for continued agricultural use and/ or can be co-located with other functions to maximise the efficiency of land use. The ES should also demonstrate how any retained agricultural land will be available for future productive use and consider the potential economic effects of any changes in land use patterns resulting from the Proposed Development and this should be cross-referenced with the Socio-Economics chapter of the ES. The Applicant should define the assessment criteria in line with relevant guidance and/ or agreement from relevant consultation bodies.</p>
3.3.6	N/A	Minerals	<p>As stated in Lincolnshire County Council's consultation response (Appendix 2 of this Opinion), parts of the site are located within a Minerals Safeguarding Area. This is not referenced within the Scoping Report. The ES should assess the likely significant effects of the Proposed Development on the sterilisation of important mineral resources. The Applicant should seek agreement from the Minerals Planning Authority regarding the approach to assessment of this matter.</p>

3.4 Buried Heritage

(Scoping Report Chapter 9)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.4.1	Table 9-1 and paragraph 9.23	Operational phase	The Applicant proposes to scope out an assessment of the operational phase on the basis that below ground work would not occur during operation. The Inspectorate is content with this approach considering any significant effects on buried assets would occur during construction.

ID	Ref	Description	Inspectorate's comments
3.4.2	Paragraph 9.24	Decommissioning	<p>The Scoping Report states that it is unlikely that decommissioning would impact on buried archaeological assets. It is unclear on what basis this conclusion has been made. The Inspectorate considers that the potential for decommissioning stage effects should be assessed, for example, the ES should consider the potential for harm due to removal of piles and any future requirement for deep ploughing.</p> <p>It is also noted that a DEMP will include measures to ensure no likely significant effects occur and this will be secured via DCO requirement. The Inspectorate would expect to see an outline DEMP as part of the application documents.</p>
3.4.3	Paragraph 9.21	Field investigations	<p>It is noted that physical assessment, namely trial trenching and/ or geophysical survey, is proposed for areas of higher archaeological potential.</p> <p>The Applicant should ensure the baseline is sufficiently robust to represent the existing environmental conditions of the entire site. The Applicant should make efforts to seek agreement from relevant</p>

ID	Ref	Description	Inspectorate's comments
			consultation bodies regarding the extent, nature, and timing of field investigations and provide evidence of this within the application documents. The Applicant's attention is drawn to ID 2.1.14 above in this regard.

3.5 Cultural Heritage

(Scoping Report Chapter 10)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.5.1	Paragraph 10.21	The Cross in St Peter and St Paul's Churchyard, the Scheduled Monument at Kettlethorpe	<p>The Applicant proposes to scope out impacts to this Scheduled Monument on the basis that the visual and perceptual separation from the site means this asset is unlikely to be affected.</p> <p>The Applicant's attention is drawn to the consultation response from Historic England (Appendix 2 of this Opinion) which advises that this asset is considered together with the closely associated Church. In the absence of agreement with Historic England and the relevant Local Planning Authorities (LPAs), the Inspectorate does not agree to scope this matter out at this stage. However, should this be subsequently agreed with the relevant consultation bodies, and evidence of this is provided within the application documents, this matter can be scoped out.</p>
3.5.2	Paragraph 10.21	Grade II listed buildings outside of the 1km study area	<p>The Applicant proposes to scope out impacts to these assets due to the nature of these assets being predominantly farm buildings where the contribution of their immediate rural settings would not be affected due to distance from the Proposed Development site.</p> <p>No further information is provided regarding the specific heritage assets to be scoped out, their heritage settings, and their location in relation to the Proposed Development site. On this basis the Inspectorate is not content to scope out an assessment of this matter at this stage. The ES should include an assessment of this matter, or the information required to demonstrate the absence of a likely significant effect such as agreement from relevant consultation bodies. The Applicant's attention is drawn to the consultation</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			response from Historic England (Appendix 2 of this Opinion) in this regard.
3.5.3	Paragraph 10.21	Heritage assets where their setting predominantly comprises their respective villages	<p>The Applicant proposes to scope out impacts on heritage assets (Grade II listed assets and non-designated heritage assets) for which their setting comprises their respective village, namely assets within Thorney, Normanton on Trent, Darlton, and Dunham-on-Trent.</p> <p>No further explanation is provided as to why the heritage settings of these assets would not be impacted by the Proposed Development. It is noted, in paragraph 10.22, that effects of construction activities (for example increases in noise, dust and traffic movements) on the tranquillity of character/ setting of a heritage asset have the potential to result in significant effects and are therefore proposed to be scoped in. It is unclear why the approach stated in paragraph 10.22 does not apply for these specific assets.</p> <p>In the absence of further information, such as the specific assets proposed to be scoped out and justification on how the settings of these assets would not be affected, the Inspectorate does not agree to scope this matter out at this stage and the ES should include an assessment of these matters. For the assessment of setting, the study area should be agreed with the relevant stakeholders and informed by the visual analysis.</p>
3.5.4	Paragraph 10.21	All heritage assets in Newton-on-Trent and Kettlethorpe	<p>The Applicant proposes to scope out these assets on the basis that the A57 Dunham Road separates the Proposed Development site from these assets. The location of these assets is shown on Figure 10-1.</p> <p>Considering the proximity of these assets to the site boundary, and within the defined 1km study area, as well as the fact that setting of a heritage asset should consider more than just intervisibility, the Inspectorate does not agree to scope this matter from further</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			assessment. The Applicant's attention is drawn to consultation responses from Lincolnshire County Council and West Lindsey District Council (Appendix 2 of this Opinion) in this regard.
3.5.5	Paragraph 10.21	Heritage assets where power infrastructure is already present in their wider settings	<p>The Applicant proposes to scope out an assessment of these assets on the basis that power infrastructure is already very present in their wider settings and the addition of solar panels and cable routes is unlikely to materially affect their heritage significance. The specific assets proposed to be scoped out are not provided although it is noted that this would include all heritage assets in Low Marnham. It is stated that heritage assets within High Marnham are in closer proximity to power infrastructure but <i>"it is because of that proximity that the potential changing nature of this infrastructure...may materially affect their settings"</i> as such assets in High Marnham are proposed to be scoped in for further assessment.</p> <p>Based on the information provided it is unclear whether the Proposed Development has the potential to materially affect the settings of heritage assets in Low Marnham as well as High Marnham. As such, the Inspectorate is not in a position to scope this matter out at this stage. The ES should include an assessment of this matter, or the information required to demonstrate the absence of a likely significant effect, such as agreement from relevant consultation bodies. The Applicant's attention is drawn to the consultation response from Historic England (Appendix 2 of this Opinion) regarding this matter.</p>

ID	Ref	Description	Inspectorate's comments
3.5.6	Paragraphs 10.18 and 10.19	Heritage receptors	The Scoping Report identifies (in paragraphs 10.18 and 10.19) designated and non-designated heritage assets which have the potential to be affected by the Proposed Development.

ID	Ref	Description	Inspectorate's comments
			<p>As noted in the consultation response from the Canal and River Trust (Appendix 2 of this Opinion), Fledborough Viaduct is identified (in paragraph 10.14) as a non-designated heritage asset within the study area but is not listed in paragraph 10.19 as a non-designated heritage asset which is likely to be affected by the Proposed Development. Paragraph 10.22 states that this asset is proposed to be scoped in for detailed assessment. There is therefore inconsistency across the Scoping Report.</p> <p>The Applicant should seek to agree the heritage assets for inclusion and exclusion within the assessment with the relevant consultation bodies and provided evidence of this consultation within the application documents.</p>
3.5.7	Paragraph 10.26	Zone of Theoretical Visibility (ZTV)	<p>It is stated that a ZTV, used as part of the Landscape and Visual Impact Assessment (LVIA), will be used to inform the cultural heritage assessment. This ZTV should be based on the worst-case scenario of the Proposed Development, for example the maximum height of tracker panels and infrastructure components such as BESS, substations, and any overhead lines. Where there are elements of the Proposed Development with different heights, the Applicant should consider using multiple ZTVs to assess the potential visibility for all components of the Proposed Development.</p>

3.6 Landscape and Visual

(Scoping Report Chapter 11)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.6.1	Table 11-2	National and Local landscape designations	<p>The Applicant proposes to scope out an assessment of National and Local landscape designations on the basis that there are no such designations across, or close to, the Proposed Development site. It is not clear what "close to" is defined as in this context and no figure is provided showing the location of the nearest designations. However, the Inspectorate is content to scope this matter out subject to this being substantiated with evidence in the ES, such as through a ZTV.</p>
3.6.2	Table 11-2	Lighting – construction and decommissioning	<p>The Applicant proposes to scope out an assessment of lighting effects for the construction and decommissioning phases. The reasoning provided is that any lighting during construction and decommissioning would be directional, temporary, only used during working hours, and would be designed to minimise light spill "in so far as it is reasonably practicable". This is proposed to be set out in a CEMP and DEMP.</p> <p>No further detail is provided on the proposed lighting strategy during construction/ decommissioning or the receptors which could be affected. As such the Inspectorate does not agree to scope out this matter. The ES should clearly explain the lighting strategy proposed and the measures in place to avoid or limit lighting impacts on human and ecological receptors.</p> <p>Furthermore, the proposed working hours are not specified within the Scoping Report. The extent of any lighting during construction/ decommissioning to occur during and beyond the daylight hours is therefore unclear. Accordingly, the ES should provide an assessment of lighting effects during construction and decommissioning, including</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			a night-time assessment, or the information required to demonstrate the absence of a likely significant effect.
3.6.3	Table 11-2	Lighting – operation	<p>The Scoping Report states that during operation lighting would be motion-triggered or turned on manually during emergencies. Paragraph 3.33 states that the Proposed Development would not be permanently lit however the substation and BESS compounds will be "<i>lit when manned</i>" or used in an emergency. It is noted that a quantitative lighting assessment is proposed to be scoped out, but the effect of lighting will be considered "<i>as part of the Proposed Development, rather than a standalone assessment</i>". It is therefore unclear whether an assessment of lighting effects is proposed to be scoped out or not.</p> <p>For the avoidance of doubt, the Inspectorate is content that a standalone quantitative assessment of operational lighting can be scoped out of further assessment provided that any potential effects, including those relating to intermittent lighting sources such as motion-activated security lighting, are assessed within other aspect chapters of the ES such as LVIA and ecology. The ES should signpost any control measures to ensure that lighting would only be used for emergency usage and motion-triggered. Clarification should be provided as to what the phrase "<i>when manned</i>" means in terms of frequency of usage and whether there is potential for the Proposed Development to be permanently lit should a member of staff be present. This should be appropriately described within the Lighting Strategy.</p>

ID	Ref	Description	Inspectorate's comments
3.6.4	Paragraphs 11.7, 11.47 and 11.48	Study area	<p>The Scoping Report states that a study area of 2km has been selected based on the local topography and view distances to the Proposed Development. However, paragraph 11.47 implies that the ZTV mapping is yet to be undertaken and paragraph 11.48 states that viewpoints are subject to agreement with the LPAs. It is unclear on what basis this study area has been selected however it is noted (in paragraph 11.54) that the extent of the study area is also subject to agreement from the LPAs.</p> <p>Figures showing the extent of visibility are not provided within the Scoping Report. Considering the ZTV is yet to be conducted, the Inspectorate considers it is premature to limit the study area to 2km. The ES should fully justify the study area selected based on the potential for significant effects to occur, such as through a ZTV study and/ or fieldwork. The ZTV should be based on the maximum extent of infrastructure components; the Applicant's attention is drawn to ID 3.5.7. The Applicant should make efforts to agree the LVIA study area with the relevant consultees and provide evidence of this within the ES.</p>
3.6.5	Table 11-1	Receptors navigating the River Trent	<p>Table 11-1 lists landscape and visual receptors. Transient receptors such as people travelling on the Public Rights of Way (PRoW) network and local road network are listed however no consideration is given to receptors navigating the River Trent. Although it is noted that receptors will be agreed through consultation with the LPAs, the ES should consider the potential for significant effects on users of the River Trent. The Applicant's attention is drawn to the consultation response from the Canal and River Trust (Appendix 2 of this Opinion) in this regard.</p>
3.6.6	Table 11-2	Demolition Environmental Management Plan	<p>It is assumed that the reference within Table 11-2 to a Demolition Environmental Management Plan is a typographical error and should be the Decommissioning Environmental Management Plan. However,</p>

ID	Ref	Description	Inspectorate's comments
			<p>should this not be the case the ES should clarify the contents of the Demolition Environmental Management Plan and how this relates to the other management plans. The Applicant's attention is drawn to ID 2.1.12.</p>
3.6.7	Paragraph 11.54	Glint and Glare	<p>It is noted that a separate glint and glare assessment is proposed to be undertaken and the potential for glint and glare impacts to contribute to landscape and visual effects will be considered.</p> <p>The Inspectorate is content with this approach provided any significant effects resulting from glint and glare are reported within the ES, such as within the landscape and visual aspect chapter. The Applicant should seek agreement from the relevant consultation bodies regarding the receptors to be considered within the glint and glare assessment, such as considering potential impacts on boaters, gliders using Darlton Gliding Club, Gamston Airport, as well as residential properties and road users.</p>

3.7 Transport and Access

(Scoping Report Chapter 12)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.7.1	Paragraphs 12.4 and 12.20	Operational phase	<p>The Scoping Report states that during operation there will be a limited number of transport trips, associated with maintenance of solar arrays and the BESS, and as such an assessment of the operational phase is not proposed. It is stated (in paragraph 12.20) that traffic associated with this phase will be insufficient to trigger the 30% threshold for assessment set out in the Institute of Environmental Management and Assessment (IEMA) guidance 'Environmental Assessment of Traffic and Movement' (2023). Specific numbers and types of traffic anticipated for the operational phase are not provided within the Scoping Report. It is unclear whether this takes into account traffic movements associated with the comprehensive replacement of panels to extend the operational lifespan since a time-limited consent is not being sought.</p> <p>The Inspectorate is content to scope this matter out subject to the ES confirming the operational vehicle types and numbers (with reference to thresholds within guidance), as well as proposed access/ transport routes, to justify this position, including from the replacement of infrastructure components during operation; the Applicant's attention is drawn to ID 2.2.5 above in this regard.</p> <p>The assessment should also consider whether there are any highway links of high sensitivity where traffic flows would increase by 10%, in line with the approach set out within the IEMA guidance and stated in paragraph 12.27 of the Scoping Report.</p>

ID	Ref	Description	Inspectorate's comments
3.7.2	Paragraph 12.18	Public Rights of Way (PRoW)	<p>Appendix A shows PRoW within and adjacent to the site boundary. Paragraph 3.40 states that PRoW within the site boundary would be retained and incorporated into the design of the Proposed Development although these may be closed or diverted on a temporary basis.</p> <p>Users of PRoW are not listed as an important receptor within paragraph 12.18. The ES should clarify the PRoW which are to be diverted/ closed during construction and assess the potential for likely significant effects to occur from access to these routes by users of the PRoW network, noting that landscape and visual impacts on PRoW users are to be considered in the Landscape and Visual chapter (as stated in paragraph 11.56).</p>
3.7.3	Paragraph 12.21	Receptors navigating the River Trent	<p>The Scoping Report lists the receptors which are likely to be affected by the Proposed Development. Boat users navigating along the River Trent are not listed here.</p> <p>Considering the proximity of the Proposed Development to the River Trent, and the requirement to cross the river, the method of which is not stated in the Scoping Report, the ES should assess the potential for likely significant effects in terms of access to occur on boat users where these are likely to occur. The Applicant's attention is drawn to the consultation response from the Canal and River Trust (Appendix 2 of this Opinion) in this regard.</p>

3.8 Air Quality

(Scoping Report Chapter 13)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.8.1	Table 13-3	Construction and decommissioning plant emissions	<p>The Applicant proposes to scope out an assessment of emissions from plant associated with construction and decommissioning as significant effects are not likely to occur. It is stated that this is in line with Institute of Air Quality Management (IAQM) guidance (namely 'Guidance on the assessment of dust from demolition and construction' (2023)) and suitable mitigation measures for site plant from this guidance would also be implemented.</p> <p>This guidance states that consideration should be given to the number of plant and their operating hours and locations to assess whether a significant effect is likely to occur. Details of the plant proposed and the location of construction activities, or the location of sensitive receptors are not provided within the Scoping Report. On this basis, the Inspectorate does not agree that this matter can be scoped out at this stage. An assessment of effects should be included unless robust justification is provided to demonstrate that such machinery would not give rise to significant air quality effects.</p>
3.8.2	Table 13-3	Operational phase	<p>The Applicant proposes to scope out an assessment of the operational phase. It is stated that "<i>the operation of the Proposed Development will not result in any direction emissions to air</i>". The basis of this statement is not clear considering it is noted that some traffic movements are required during operation.</p> <p>Considering the characteristics of the Proposed Development, the Inspectorate is content that operational traffic is unlikely to exceed thresholds of relevant guidance (namely Environmental Protection UK (EPUK)/ Institute of Air Quality Management (IAQM) guidance: 'Land-</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			Use Planning & Development Control: Planning for Air Quality (2017)') requiring detailed assessment and therefore this matter can be scoped out. Nevertheless, the ES should clarify the number and type of traffic movements required during operation to the justify this, including movements associated with any replacement of infrastructure components during operation. The ES should justify any assumptions made.
3.8.3	Table 13-3	Ecological effects – construction and decommissioning	<p>The Applicant proposes to scope out an assessment of ecological effects. The reasoning provided is that there are no European sites within 200m of roads on which a detectable rise in traffic is predicted for construction and decommissioning and although there are two SSSIs within 200m of the A1133, any effects would be temporary in nature. It is stated that the same applies to LWSs.</p> <p>The number and type of vehicle movements are not stated in the Scoping Report and the construction access routes are not yet confirmed, as noted in ID 2.1.9 and 3.1.2. However, considering the characteristics of the Proposed Development the Inspectorate is content to scope this matter out subject to the number and type of vehicle movements and proposed transport routes relative to the SSSIs and LWSs being provided to demonstrate that any significant effects are not likely to occur, along with any construction/ decommissioning control measures being set out within the CEMP / DEMP.</p>

ID	Ref	Description	Inspectorate's comments
3.8.4	N/A	N/A	N/A

3.9 Carbon and Climate Change

(Scoping Report Chapter 14)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.9.1	Paragraph 14.12	Carbon emissions that form a very small component of the carbon footprint of the Proposed Development – construction and operation	<p>The Applicant proposes to scope out an assessment of carbon emissions which contribute a very small component of the Proposed Development's total carbon footprint, namely the treatment and disposal of waste materials and water use. The Scoping Report states that these emissions would together contribute less than 5% of the total carbon footprint of the Proposed Development and in line with IEMA Guidance (2022) these can be excluded from the assessment.</p> <p>On the basis that together these emissions would contribute very minimally to the Proposed Development's carbon emissions, and this is in line with relevant guidance, the Inspectorate agrees that this matter can be scoped out. However, the ES should provide sufficient information to justify this, such as the emissions of these components, by type and quantity, to demonstrate that relevant thresholds for assessment are not exceeded.</p>
3.9.2	Paragraph 14.12	Carbon emissions from decommissioning	<p>The Applicant proposes to scope out an assessment of the decommissioning phase on the basis that at the point of decommissioning, which is assumed to be at least 45 years in the future, the UK would have reached net zero and therefore it is likely that there will be new technology and recycling facilities in place which would mean decommissioning would be net zero.</p> <p>The ES should provide an assessment of greenhouse gas (GHG) emissions for the lifetime of the Proposed Development including decommissioning. As such, the Inspectorate does not agree that this matter can be scoped out.</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p>The ES should clearly set out how impacts to/ from climate change are to be assessed for the decommissioning phase. Where future decarbonisation in the manufacturing sector is proposed to be taken into account, the ES should clearly explain where guidance has been used to determine that this is an acceptable approach, justify the relevant projection scenario, and identify any limitations or uncertainties associated with such future projections. Where uncertainty remains, the Applicant should consider whether it would be more appropriate to conduct the assessment based on current carbon emissions to assess a worst-case scenario, as has been proposed for the assessment of emissions for repair, maintenance, and replacement of the Proposed Development during its lifetime, as stated in paragraph 14.24.</p> <p>The Inspectorate would expect to see a DEMP, agreed with the LPAs, secured through the inclusion of an outline DEMP or similar with the application.</p>

ID	Ref	Description	Inspectorate's comments
3.9.3	Paragraph 14.2	Emissions	<p>It is stated that that the term 'carbon' is used to describe all GHG emissions. The ES should clarify which specific GHG emissions would be produced by the Proposed Development. Schedule 4 of the EIA Regulations states that an ES should provide an estimate of the type and quantity of emissions. This should include consideration of SF6 emissions. The Applicant's attention is drawn to ID 2.1.4 in this regard.</p>
3.9.4	Paragraph 14.20	Mitigation	<p>It is stated that "<i>best practice principles</i>" will be used to avoid and reduce carbon emissions. Any relevant mitigation measures identified</p>

ID	Ref	Description	Inspectorate's comments
			from the assessment should be clearly described in the ES and secured through the DCO.
3.9.5	N/A	In-combination assessment	The Scoping Report makes no reference to an in-combination climate change impact assessment. The ES should assess the potential for climate change to exacerbate likely significant effects associated with the Proposed Development.

3.10 Noise and Vibration

(Scoping Report Chapter 15)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.10.1	Table 15-1	On-site construction and decommissioning traffic vibration	<p>The Applicant proposes to scope out an assessment of vibration effects from on-site construction and decommissioning traffic. The Scoping Report states that "<i>experience suggests</i>" that construction and decommissioning traffic movements will not generate significant levels of vibration at the locations of sensitive receptors, however there are no apparent surveys/ evidence to substantiate this. The number and type of construction/ decommissioning vehicles proposed are not provided within the Scoping Report nor is a figure showing the location of sensitive receptors and proposed on-site haul routes. The Applicant's attention is drawn to ID 2.1.9 and ID 2.1.10.</p> <p>In the absence of further information, the Inspectorate is not in a position to scope this matter out at this stage. Accordingly, the ES should include an assessment of this matter, or the information required to demonstrate the absence of a likely significant effect, such as providing evidence that the type and number of vehicles would not exceed relevant thresholds in guidance requiring detailed assessment.</p>
3.10.2	Table 15-1	Operational traffic	<p>The Applicant proposes to scope out noise and vibration from operational traffic as very minimal road traffic would be generated by the site during operation.</p> <p>Considering the characteristics of the Proposed Development the Inspectorate agrees that this matter can be scoped out of further assessment provided that the ES confirms the anticipated type and number of vehicle trips likely to be generated during operation, as well as the proposed access routes to justify this, including</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p>movements associated with any replacement of infrastructure components during operation.</p>
3.10.3	Table 15-1	Cable routes	<p>The Applicant proposes to scope out noise and vibration from cable routes as no noise or vibration will be generated by cable routes within the site during operation.</p> <p>The Inspectorate agrees this matter can be scoped out of the assessment as once operational the cables are unlikely to be a significant source of noise or vibration.</p>
3.10.4	Table 15-1	Operational vibration from solar PV arrays	<p>The Applicant proposes to scope out an assessment of vibration effects from the operation of the solar PV arrays on the basis that they do not use any equipment that generates significant vibration during operation.</p> <p>The Inspectorate has considered the nature and characteristics of the Proposed Development and agrees that this matter can be scoped out of the assessment.</p>
3.10.5	Paragraph 15.29	Noise exposure from construction plant	<p>It is stated that the magnitude of change in noise exposure from construction plant is not proposed to be considered on the basis that "<i>no permanent activities</i>" are proposed for construction. It is unclear whether this wording means that this matter is proposed to be scoped out. As stated in paragraph 5.27 of the Scoping Report, generally the significance of an effect is considered as the combination of the sensitivity of a receptor and the predicted magnitude of change. Considering the magnitude of change for this matter is not proposed to be considered, the ES should clearly explain how the significance of effects is determined. Furthermore, duration of an impact is generally considered as one factor in determining the magnitude of change; the</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p>ES should consider the full range of contributing factors to magnitude of change.</p> <p>The ES should assess the potential for noise exposure arising from construction plant to result in likely significant effects at sensitive receptors, particularly as the construction phase is anticipated to last approximately 18 months in duration. For the avoidance of doubt, the ES should consider and report both temporary and permanent effects.</p>

ID	Ref	Description	Inspectorate's comments
3.10.6	Paragraphs 15.5, 15.16 and 15.17	Baseline noise survey	<p>Paragraph 15.17 states that it is currently anticipated that up to seven monitoring locations will be used to inform the baseline noise survey. The location of these monitoring locations is not shown on a figure.</p> <p>Paragraph 15.5 states that the existing High Marnham 275 kV substation and associated electricity grid infrastructure is likely a source of some baseline noise but also states that this source is not included in the strategic noise mapping data and cannot be readily quantified without site-specific noise surveys. Where further details on the baseline noise surveys are provided (paragraphs 15.16 and 15.17) there is no reference to the substation. It is therefore unclear whether noise monitoring is proposed near to the High Marnham substation or whether baseline noise from the substation would be sufficiently captured within monitoring at other locations.</p> <p>The Applicant should seek agreement from relevant consultation bodies regarding the number and location of monitoring locations to ensure that a robust baseline assessment has been undertaken. Evidence of this consultation should be provided within the application</p>

ID	Ref	Description	Inspectorate's comments
			documents. The location of monitoring locations should be depicted on a supporting plan.
3.10.7	Paragraph 15.15	Tracker panels – operation	<p>The Scoping Report states that there is potential for adverse noise impacts associated with the operation of the Proposed Development from ancillary equipment such as substations and battery storage equipment. The potential for noise emissions from tracker panels is not listed in paragraph 15.15 despite these being an option for the solar mounting structures (as stated in paragraph 3.9).</p> <p>The ES should consider the potential for tracker panels to cause noise emissions which could be perceptible to sensitive receptors and should either assess these accordingly where significant effects are likely to occur or provide evidence of noise emission levels to demonstrate that significant effects would not occur at sensitive receptor locations.</p>

3.11 Human Health

(Scoping Report Chapter 16)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.11.1	Table 16-2	Health related behaviours – <ul style="list-style-type: none"> • risk taking behaviours; and • diet and nutrition. 	<p>The Applicant proposed to scope out an assessment of risk-taking behaviours on the basis that all on-site personnel would be professional workers and all contractors and operators on-site will have strict health and safety protocols enforced. The Inspectorate is content to scope this matter out.</p> <p>The Applicant proposes to scope out an assessment of impacts from diet and nutrition, including access to healthy affordable food. The Scoping Report states that the Proposed Development will result in the long-term reduction in agricultural land, but as the site represents less than 0.0001% of the UK's Utilised Agricultural Area it is unlikely to significantly affect the availability and affordability of food. On the basis that any impacts on BMV agricultural land are assessed in the Land and Soils ES chapter, the Inspectorate is content to scope this matter out.</p>
3.11.2	Table 16-2	Social environment – <ul style="list-style-type: none"> • housing and access to good quality affordable housing; • relocation; • community safety; • community cohesion, social participation, interaction and support; and 	<p>The Applicant proposes to scope out an assessment of impacts on the social environment. The Scoping Report states that the Proposed Development will not result in the loss of any dwellings, and the majority of the workforce are expected to already be residents of the East Midlands region. It is stated that the Proposed Development does not involve any population displacement or relocation and will not require compulsory purchase of homes or community facilities. Health and safety measures are proposed to be in place which would limit the potential for impacts on community safety, including from crime. These are proposed to be secured through a CEMP. The Inspectorate agrees that these matters can be scoped out of further assessment provided that cross-references are made to other ES</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
		<ul style="list-style-type: none"> community severance and community engagement. 	<p>aspect chapters where appropriate, such as LVIA where impacts relating to 'psychological severance' are proposed to be assessed as stated in Table 16-2.</p>
3.11.3	Tables 16-2 and 16-3	<p>Economic environment –</p> <ul style="list-style-type: none"> employment and income; and education and training. 	<p>Table 16-2 states that employment and income and education and training are proposed to be scoped out. These matters are also included in Table 16-3 as matters which are proposed to be scoped in and therefore it is unclear whether these matters would be assessed or not, noting that this is also proposed to be assessed in the Socio-Economics ES chapter.</p> <p>As noted in Table 16-3 the Proposed Development presents education, training, and employment opportunities. As such, the Inspectorate considers that these matters should be assessed within the ES. Schedule 4 of the EIA Regulations states that both positive and negative effects should be reported within an ES.</p>
3.11.4	Table 16-2	<p>Economic environment –</p> <ul style="list-style-type: none"> regeneration; connections to jobs; and tourism and leisure industries. 	<p>The Applicant proposes to scope out an assessment of impacts on the health determinants associated with the economic environment namely regeneration, and tourism and leisure.</p> <p>It is also stated that connection to jobs is unlikely to be significantly affected by the Proposed Development as the majority of the workforce are expected to currently reside in the East Midlands region, however there is potential to scope this matter into the Human Health ES chapter if the Transport and Access ES chapter indicates a significant impact.</p> <p>The Inspectorate is content with this approach however the Applicant's attention is drawn to ID 3.12.7 below.</p>
3.11.5	Table 16-2	<p>Bio-physical environment –</p>	<p>The Scoping Report states that the Hydrology and Hydrogeology ES chapter will assess how the Proposed Development affects water</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
		<ul style="list-style-type: none"> • water quality or availability; and • land quality and use. 	<p>resources, and that the Land and Soils ES chapter will assess how the proposals will affect land quality. If either of these assessments indicate significant effects to human health, then these matters may be scoped into the Human Health ES chapter.</p> <p>The Inspectorate is content with this approach.</p>
3.11.6	Table 16-2	<p>Bio-physical environment –</p> <ul style="list-style-type: none"> • air quality (operation). 	<p>The Applicant proposes to scope out an assessment of air quality impacts during the operational phase on the basis that the implementation of a CEMP would mean no significant dust or traffic emissions would arise.</p> <p>It is unclear why measures in a CEMP would be used during the operational phase and whether instead this should refer to an operational phase management plan. The Applicant's attention is drawn to ID 2.1.12.</p> <p>Considering the characteristics of the Proposed Development, the Inspectorate is content that the operational phase is unlikely to lead to significant health effects from air quality emissions and therefore this matter can be scoped out of further assessment. However, the ES should provide further details on the type and number of vehicles, and proposed access routes, proposed during the operational phase to demonstrate these does not exceed the thresholds requiring detailed assessed as set out in guidance (namely IAQM/ EPUK). The Applicant's attention is drawn to ID 3.8.2 above.</p>
3.11.7	Table 16-2	<p>Bio-physical environment –</p> <ul style="list-style-type: none"> • radiation. 	<p>The Applicant proposes to scope out an assessment of effects from EMF. The Scoping Report states that long-standing exposure limit and health protection guidelines for EMF have been developed by the International Commission on Non-Ionizing Radiation Protection and these have a high safety margin. It is stated that the Proposed Development will comply with these guidelines. It is noted (in Table</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p>16-3) that impacts of EMF radiation on mental wellbeing are proposed to be assessed.</p> <p>As noted in ID 2.1.7 above, the voltage of the on-site and export cables is not provided within the Scoping Report, and it is not clear whether cables would be buried or overhead. Cables above 132kV have the potential to cause EMF effects.</p> <p>Given the uncertainty surrounding cabling design and proximity to receptors, the ES should address the risks to human health arising from EMF, including cumulatively with existing infrastructure, taking into account relevant technical guidance. The Inspectorate considers that the ES should set out the design measures to be implemented to avoid the potential for likely significant effects in line with relevant guidance.</p>
3.11.8	Table 16-2	<p>Institutional and built environment–</p> <ul style="list-style-type: none"> • health and social care services; and • quality of built environment and natural environment. 	<p>The Applicant proposes to scope out an assessment of health and social care services on the basis that the Proposed Development would not result in the loss or provision of any dwellings and associated population. The Inspectorate agrees that this matter can be scoped out on this basis.</p> <p>It is stated that impacts on the quality of the built and natural environments will be considered in the Landscape and Visual ES chapter, with mitigation measures secured to minimise impacts. The Inspectorate agrees with this approach.</p>
3.11.9	Table 16-3	Local business activity	<p>Table 16-3 states that the economic effects of the Proposed Development on changes to local business activities, such as diversification of agricultural land and growth of rural businesses, will be assessed in the Socio-Economics ES chapter with effects in health terms considered in the Human Health ES chapter. It is stated that this matter may be scoped out of the Human Health ES chapter if the</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p>Socio-Economics chapter indicates no significant change in local business activity.</p> <p>The Inspectorate is content with this approach.</p>

ID	Ref	Description	Inspectorate's comments
3.11.10	Paragraphs 16.23 and 16.24	Decommissioning methodology	<p>Paragraph 16.23 states that the methodology will be the same for all phases of the Proposed Development. Whilst paragraph 16.24 states that "<i>both direct and indirect effects will be considered across the construction and operation phases</i>", it does not refer to the decommissioning phase. It is therefore unclear what the proposed approach includes assessing decommissioning effects. The ES should clearly describe the methodology used for each phase of the development. Effort should be made to agree the assessment approach with relevant consultation bodies.</p>

3.12 Socio-Economics

(Scoping Report Chapter 17)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.12.1	Paragraph 17.20	Demand for school places	<p>The Applicant proposes to scope out effects on school places as the operational phase of the Proposed Development is not expected to result in a permanent increase in local population and the demand for school places should not be affected. No reference is made to the construction or decommissioning phases, although it is noted (in paragraph 3.43) that the construction phase is anticipated to last approximately 18 months.</p> <p>Considering the characteristics of the Proposed Development, the Inspectorate agrees that this matter can be scoped out of the assessment on this basis. However, further detail on the number of people proposed to be employed during each of the phases should be specified within the ES to justify this.</p>

ID	Ref	Description	Inspectorate's comments
3.12.2	Paragraphs 17.16, 17.23, and 17.24	Baseline conditions	<p>The Scoping Report does not describe how the baseline will be established for recreational and community facilities and open space. The Inspectorate recommends the use of surveys of the PRoW affected to ensure that the baseline usage of the PRoW has been considered.</p> <p>The ES should provide details of all desk- and field-based sources of information used to support the assessment. Effort should be made to agree the methodology for establishing the baseline conditions with relevant consultation bodies.</p>

ID	Ref	Description	Inspectorate's comments
3.12.3	Paragraph 17.18	Environmental measures and mitigation	This chapter of the Scoping Report omits reference to mitigation measures although it is noted (in paragraph 17.17) that the Proposed Development is likely to have beneficial effects, and paragraph 17.18 lists the opportunities for the Proposed Development to provide beneficial socioeconomic effects. The ES should describe how these measures would be implemented and the mechanism by which they are secured.
3.12.4	Paragraph 17.21	Workers	Paragraph 17.21 states that impacts of temporary employment during construction, and permanent employment during operation, will be assessed. The ES should provide the anticipated number of jobs proposed to be created for each of the phases of the Proposed Development as well as any plans in place to promote local employment, training, and education and explain how these will be secured through the DCO.
3.12.5	Paragraphs 17.26 and 17.29	Significant effects	The ES should clearly explain the criteria used to determine the significance of effects such as when establishing how a change becomes " <i>noticeable</i> " and what constitutes a " <i>moderate number of receptors</i> " and how this differs from a minor effect with a " <i>minor change</i> " and " <i>a small number of receptors</i> ". Any use of professional judgement to assess significance should be fully justified within the ES; the Applicant's attention is drawn to ID 2.2.12.
3.12.6	N/A	Severance	The ES should assess the impacts during the construction and operational phases of potential severance issues for farmers and other landowners. Where relevant, measures should be secured within the DCO to ensure farmers and other landowners' ability to access their land is not hindered.

ID	Ref	Description	Inspectorate's comments
3.12.7	N/A	Tourism and leisure	<p>No reference is made to tourism and leisure within Chapter 17 of the Scoping Report despite Table 16-2 referring to Chapter 17 regarding this matter. It is stated (in Table 16-2) that the Proposed Development is not expected to have any significant effects on the tourism sector however this is not substantiated and the existing tourism in the area is not described.</p> <p>The ES should describe the existing baseline environment with regards to tourism and leisure and provide an assessment of this matter where significant effects are likely to occur.</p>

3.13 Environmental Topics Scoped Out

(Scoping Report Chapter 18)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.13.1	Table 18-1	Glint and Glare	<p>The Applicant proposes to undertake a detailed standalone glint and glare assessment which will form a technical appendix to the ES. It is stated that modelling will be used to inform the design of the Proposed Development and a description of the relevant design measures and safety considerations will be included within the Proposed Development description chapter of the ES.</p> <p>The Inspectorate is content with this approach provided that any potential effects identified through the glint and glare assessment are reported appropriately within the ES, such as within the LVIA chapter. The Applicant's attention is drawn to ID 3.6.6 above.</p>
3.13.2	Table 18-1	Risk of Major Accidents and Disasters	<p>The Applicant proposes to scope this matter out on the basis that significant effects are unlikely to occur. It is stated that the Proposed Development would be designed and operated in accordance with legislative requirements. It is also stated that solar infrastructure is of low susceptibility to the impact of natural disasters.</p> <p>Schedule 4 of the EIA Regulations requires a description of the expected significant adverse effects deriving from the vulnerability of the Proposed Development to risk of major accidents and/ or disasters. Whilst the Inspectorate is content that a standalone aspect chapter on Major Accidents and Disasters is not required, the ES should include a description of this matter and any measures in place to reduce the risk of significant effects.</p> <p>The Scoping Report highlights that battery storage is the highest risk component of the Proposed Development. The Inspectorate considers that the risk of battery fire/ explosion should be assessed in the ES,</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p>including where any measures designed to minimise impacts on the environment in the event of such an occurrence are secured. The Inspectorate should be provided with details of the proposed battery storage management plan as part of the application documents. The Applicant should make efforts to agree these with the relevant consultation bodies, such as the fire and rescue services.</p> <p>The Scoping Report makes no reference to other potential risks of major accidents and disasters such as flood risk or unexploded ordnance (UXO). The ES should justify why these matters have not been assessed.</p>
3.13.3	Table 18-1	Waste	<p>It is stated that a standalone chapter on waste is not proposed although the production of waste and its transportation will be considered where relevant in the ES such as the traffic and transport chapter.</p> <p>Noting that the operational life of the Proposed Development is not proposed to be specified the Inspectorate considers that the ES should assess the likely significant effects from waste during the operation phase, as well as the decommissioning phase to the extent that it is possible at this time. The ES should include estimates, by type and quantity, of expected residues and emissions and quantities and types of waste produced during the construction and operation phases in line with Schedule 4 of the EIA Regulations. As such, the Inspectorate is not content to scope this aspect out.</p>
3.13.4	Table 18-1	Wind microclimate	<p>The Applicant proposes to scope this matter out considering the low-rise nature of the Proposed Development is unlikely to impact on wind conditions.</p> <p>Considering the characteristics of the Proposed Development the Inspectorate is content that this matter can be scoped out of further</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			assessment notwithstanding that the resilience of the Proposed Development to climate change should be assessed, as is proposed in paragraph 14.9 of the Scoping Report.

APPENDIX 1: CONSULTATION BODIES FORMALLY CONSULTED

TABLE A1: PRESCRIBED CONSULTATION BODIES¹

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Health and Safety Executive	Health and Safety Executive
The National Health Service Commissioning Board	NHS England
The relevant Integrated Care Board	NHS Lincolnshire Integrated Care Board
	NHS Nottingham and Nottinghamshire Integrated Care Board
Natural England	Natural England
The Historic Buildings and Monuments Commission for England	Historic England
The relevant fire and rescue authority	Lincolnshire Fire and Rescue
	Nottinghamshire Fire and Rescue Service (Nottinghamshire and City of Nottingham Fire Authority)
The relevant police and crime commissioner	Lincolnshire Police and Crime Commissioner
	Nottinghamshire Police and Crime Commissioner
The relevant parish council(s) or, where the application relates to land [in] Wales or Scotland, the relevant community council	Kettlethorpe Parish Council
	Marnham Parish Council
	Dunham with Ragnall, Fledborough and Darlton Parish Council
	South Clifton Parish Council
	Thorney Parish Council
	Newton Parish Council

¹ Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the 'APFP Regulations')

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Environment Agency	The Environment Agency
The Marine Management Organisation	Marine Management Organisation (MMO)
The Civil Aviation Authority	Civil Aviation Authority
The Relevant Highways Authority	Nottinghamshire County Council
	Lincolnshire County Council
The relevant strategic highways company	National Highways
The relevant internal drainage board	Upper Witham Internal Drainage Board
	Isle of Axholme and North Nottinghamshire Water Level Management Board
	Trent Valley Internal Drainage Board
The Canal and River Trust	The Canal and River Trust
United Kingdom Health Security Agency, an executive agency of the Department of Health and Social Care	United Kingdom Health Security Agency

TABLE A2: RELEVANT STATUTORY UNDERTAKERS²

STATUTORY UNDERTAKER	ORGANISATION
The Forestry Commission	East & East Midlands Forestry Commission
The Secretary of State for Defence	Ministry of Defence
The relevant Integrated Care Board	NHS Lincolnshire Integrated Care Board
	Nottingham and Nottinghamshire Integrated Care Board

² 'Statutory Undertaker' is defined in the APFP Regulations as having the same meaning as in Section 127 of the Planning Act 2008 (PA2008)

STATUTORY UNDERTAKER	ORGANISATION
The National Health Service Commissioning Board	NHS England
The relevant NHS Trust	East Midlands Ambulance Service NHS Trust
Railways	Network Rail Infrastructure Ltd
	National Highways Historical Railways Estate
Canal Or Inland Navigation Authorities	The Canal and River Trust
Civil Aviation Authority	Civil Aviation Authority
Licence Holder (Chapter 1 Of Part 1 Of Transport Act 2000)	NATS En-Route Safeguarding
Universal Service Provider	Royal Mail Group
The relevant Environment Agency	The Environment Agency
The relevant water and sewage undertaker	Anglian Water
	Severn Trent
The relevant public gas transporter	Cadent Gas Limited
	Northern Gas Networks Limited
	Southern Gas Networks Plc
	Energy Assets Pipelines Limited
	ES Pipelines Ltd
	Fulcrum Pipelines Limited
	GTC Pipelines Limited
	Harlaxton Gas Networks Limited
	Independent Pipelines Limited
	Indigo Pipelines Limited
	Last Mile Gas Ltd
	Leep Gas Networks Limited

STATUTORY UNDERTAKER	ORGANISATION
	Mua Gas Limited
	Quadrant Pipelines Limited
	Squire Energy Limited
	National Gas
The relevant electricity distributor with CPO Powers	National Grid Electricity Distribution (East Midlands) Limited
	Eclipse Power Network Limited
	Energy Assets Networks Limited
	ESP Electricity Limited
	Fulcrum Electricity Assets Limited
	Harlaxton Energy Networks Limited
	Independent Power Networks Limited
	Indigo Power Limited
	Last Mile Electricity Ltd
	Leep Electricity Networks Limited
	Mua Electricity Limited
	Optimal Power Networks Limited
	Squire Energy Metering Ltd
	The Electricity Network Company Limited
	UK Power Distribution Limited
	Utility Assets Limited
	Vattenfall Networks Limited
The relevant electricity transmitter with CPO Powers	National Grid Electricity Transmission Plc
	National Grid Electricity System Operation Limited

TABLE A3: SECTION 43 LOCAL AUTHORITIES (FOR THE PURPOSES OF SECTION 42(1)(B))³

LOCAL AUTHORITY⁴
Ashfield District Council
Bassetlaw District Council
Bolsover District Council
Cambridgeshire County Council
City of Doncaster Council
City of Lincoln Council
Derbyshire County Council
East Lindsey District Council
Gedling Borough Council
Leicestershire County Council
Lincolnshire County Council
Mansfield District Council
Melton Borough Council
Newark and Sherwood District Council
Norfolk County Council
North East Lincolnshire Council
North Kesteven District Council
North Lincolnshire Council
North Northamptonshire Council
Nottingham City Council
Nottinghamshire County Council

³ Sections 43 and 42(B) of the PA2008

⁴ As defined in Section 43(3) of the PA2008

LOCAL AUTHORITY⁴
Peterborough City Council
Rotherham Metropolitan Borough Council
Rushcliffe Borough Council
Rutland County Council
South Kesteven District Council
West Lindsey District Council

APPENDIX 2: RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

CONSULTATION BODIES WHO REPLIED BY THE STATUTORY DEADLINE:
Anglian Water
Bassetlaw District Council
Canal and River Trust
City of Lincoln Council
Dunham with Ragnall, Fledborough and Darlton Parish Council
Environment Agency
Forestry Commission
Historic England
Lincolnshire County Council
Marine Management Organisation
Ministry of Defence
National Grid Electricity Distribution (East Midlands) Limited
National Grid Electricity Transmission Plc
National Highways
NATS En-Route Safeguarding
Natural England
Newark and Sherwood District Council
Norfolk County Council
North Kesteven District Council
North Lincolnshire Council
Nottinghamshire County Council
Peterborough City Council

Rotherham Metropolitan Borough Council
Rutland County Council
South Clifton Parish Council
Trent Valley Internal Drainage Board
United Kingdom Health Security Agency
West Lindsey District Council



Anglian Water Services
Lancaster House, Lancaster Way,
Ermine Business Park, Huntingdon,
Cambridgeshire. PE29 6XU

Planning Inspectorate

www.anglianwater.co.uk

oneearthsolar@planninginspectorate.gov.uk

Our ref: OES/ScopingResponse

8 December 2023

Dear Joseph,

Application by One Earth Solar Farm Ltd (the Applicant) for an Order granting Development Consent for the One Earth Solar Farm (the Proposed Development) - Anglian Water scoping consultation response

Thank you for the opportunity to comment on the scoping report for the above project which is within the Newark and Sherwood, West Lindsey, and Bassetlaw council areas. Anglian Water is the appointed water supplier/ wholesaler for most of the eastern area of the site and the sewerage undertaker for the communities to the south east the site around Wigsley as shown on Figure 2-1.

The following response is submitted on behalf of Anglian Water in its statutory capacity and relates to potable water and water assets along with wastewater and water recycling assets. We note that at 5.14, the project plans to engage with several consultees including Anglian Water.

The Scheme – Anglian Water existing infrastructure

At 7.26 the Scoping Report advises that a baseline study has been undertaken for 'water mains with regard to potable water capacity/supply'. With reference to Table 7-1, on sewers and drainage, whilst only a small part of the site may be served from the statutory area served by Anglian Water to the south east it is not evident in the report that a similar baseline has been established for sewerage assets.

There are existing Anglian Water assets including strategic supply pipelines serving water abstraction locations and the Newton on Trent Water Treatment Works off the Dunham Road. The Hall Water Treatment works and the pipes which immediately served it, appear to have been carved out of the redline area (page 197). There also water mains serving local communities at Dunham, Newton on Trent, Ragnall, Darlton, Fledborough, North Clifton, Thorney, High Marham and South Clifton within the site and the roads which serve it.

A west to east strategic supply pipe is 21 inches in diameter and so will require a bespoke standoff distance more than 6 (six) metres free from construction, structures and haul and access roads. Other pipes within the site will require a standoff distance of 4 (four)

metres where the diameter of the pipe is less than 250 millimetres or 5 (five) metres where the diameter of the pipe is between 250 and 400 millimetres. These standoff distances are set out in the template Protective Provisions provided to the promoter. The stated standoff buffers set out in the Protective Provisions may be revised in consulting with Anglian Water's network teams following necessary ground investigations and initial array and access arrangements being provided to Anglian Water. Archaeological geophysical surveys may assist the applicant to work with Anglian Water to pin point assets for array, cable and construction and operational design.

Anglian Water would want to ensure the location and nature of our assets serving local communities and strategic water supply infrastructure, are identified, and protected. To reduce the need for diversions and the associated carbon impacts of those works, ground investigations would enable the promoter to design out these potential impacts and so also reduce the potential impact on services if construction works cause a pipe burst or damage to supporting infrastructure. We welcome the intention at 2.28 to under utilities searches to consider utilities 'help inform the design of the Proposed Development'.

We welcome the intention to produce a Construction Environment Management Plan (CEMP) (3.51) and Construction Traffic Management Plan (3.46) and these should include steps to remove the risk of damage to Anglian Water assets from plant and machinery (compaction and vibration during the construction phase) including haul and access roads and crossings (if any). Further advice on minimising and then relocating (where feasible) Anglian Water existing assets can be obtained from: connections@anglianwater.co.uk

Maps of Anglian Water's assets are available to view at the following address: <https://utilities.digdat.co.uk/>

Flood Risk, Drainage and Surface Water

At 7.24 the Report states that, 'it is proposed that Sustainable Drainage Systems (SuDS) will be incorporated where it is possible and appropriate, thereby ensuring a natural drainage solution occurs'. We also note that at 8.10 the Report advises that, 'During construction works, surface water drains should be designed to carry only uncontaminated water. Foul drains should carry contaminated water to a sewage treatment works under suitable discharge consent.'

We would advise that in accordance with the drainage hierarchy, surface water should first look to be managed by Sustainable Drainage Systems as per 7.24, 7.25, 7.28 and 7.31. From our review and based on the limited area that could be served from the Anglian Water service area, we have concluded that there is no intention by the project to seek to connection to the Anglian Water public sewer for the construction or operational phase. We would welcome confirmation that the design of drainage for the area around Wigsley will either be SuDS or a self- contained system for the construction phase and operational phase that utilises SuDS for surface water management and

rainwater harvesting for non-potable uses (see 3.47) during construction and then operation.

Anglian Water would welcome the non- inclusion of provisions in the draft Development Consent Order (DCO) which would allow for a right of connection to the public sewer. The use of nature-based solutions including SuDS and natural flood management is further supported by the flood risks presented at Figure 2-3.

Water Resources

In view of the guidance in the National Policy Statements we would welcome reference in the scoping to water supply and water resources (7.26, 7.28 and 7.32) and Anglian Water requests that these points are assessed early in the EIA process, descoped as a topic for Anglian Water wastewater connections (Table 7-1) and how the project will be supplied with water given the statement at 14.12.

Apart from an information reference in 7.3 and a Source Protection Zone (SPZ) summary in 7.20, the report does not consider Anglian Water's abstraction locations from the Trent as receptors, and this is an omission from the Scoping. We have two groundwater abstraction sites in the vicinity: Newton and Newton (Dunham Bridge). Portions of the proposed solar development lie within SPZ 2 of these sources. The risk of contamination to the Sherwood Sandstone is potentially low due to significant thicknesses (c.200 metres) of low permeability superficial cover.

The two water treatment works serve the Newton Boosters Distribution Zone within the Central Lincolnshire Water Resource Zone (WRZ) and specifically the Newton Besthorpe Distribution Management Area (DMA) to the east of Trent. To the west of the Trent is the Grove/ Sturton Le Steeple Distribution Management Area in the Nottinghamshire WRZ. We note that whilst the scoping considers water environment impacts it does not look at impacts on water resources. As the site is within an area designated by the Environment Agency as 'seriously water stressed' and water may be used in the project construction and operation, this indicates that water resources should be assessed in the EIA.

Anglian Water notes that the applicant has sought to address ground water and surface water impacts on habitats and species but is silent the availability of water. The development lies along the course of the river Trent and is predominantly upstream of our surface water abstraction point feeding Hall WTW – and its associated storage reservoir. Activities which might contribute contaminants to the Trent, both during the construction and operational phase, should be notified to Anglian Water and impacts mitigated insofar as is possible. Such activities may include:

- Fuel/chemical spills from storage points and machinery during construction and operation phases;
- Enhanced sediment loading to watercourses from direct and indirect surface water runoff during construction phase;

- Chemical runoff from the solar farm once in operation (cleaning products and panel coatings*);
- Contamination from ancillary equipment, such as transformers and energy storage, once in operation;
- Grazing of land beneath panels for grass/weed suppression, once in operation.

*We ask that details are provided of chemicals which may be used in the future cleaning of panels, and chemical coatings present on the panels (including PFAS). We reserve the right to comment on any products which we believe may adversely affect raw and treated water quality at our Trent abstraction point and Hall Water Treatment Works.

We would advise though that experience in servicing the water demands of other NSIP illustrates the need for these matters to be considered in the EIA at an early stage and design in or designed and scoped out of the project. Along with abstraction risks and surface water supply contamination questions we therefore disagree with the descoping of the water resource and water quality impacts from the EIA for construction, operation, and decommissioning phases (7.27 read with 7.26 and 7.28).

With regard to 7.32, Anglian Water now advise that new non household water supply requests (construction and operational phases) may be declined as these could compromise our regulatory priority of supplying existing and planned domestic growth. The flows needed to fill water storage tanks for example (if the promoter decides not to use rainwater harvesting on site to meet this non potable demand) will need to be assessed by Anglian Water to advise whether a supply is feasible when assessed in terms of the potential to jeopardise domestic supply or at a significant financial or environmental cost. Hall is a key site for Anglian Water in its long-term water resources management strategy. Looking towards future water resources, the Hall site/area may require further development in future, including acquisition of additional land for associated assets and infrastructure.

Our 2023 position on non- household supply is due to our joint aim with the Environment Agency of reducing abstraction to protect sensitive environments. If the promoter elects to seek a public water supply, they will need to submit a water resources assessment setting out a daily demand for each stage of the project and whether this is for domestic or non-domestic uses. Water use during construction means that the promoter will need to confirm that concrete production, for example, would be offsite and so not require an on-site supply. Further advice on water and wastewater capacity and options can be obtained by contacting Anglian Water's Pre-Development Team at: planningliasion@anglianwater.co.uk

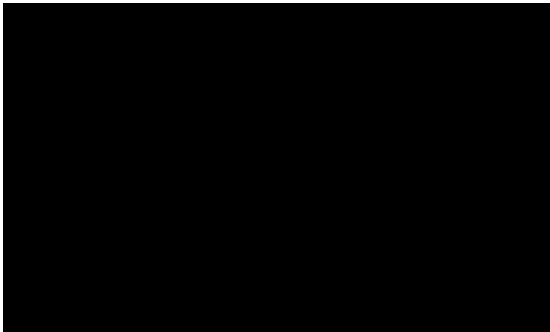
Engagement

Anglian Water would welcome the early instigation of discussions with One Earth Solar Ltd as the prospective applicant, in line with the requirements of the 2008 Planning Act and guidance. Experience has shown that early engagement and agreement is required between NSIP applicants and statutory undertakers during design and assessment and well before submission of the draft DCO for examination. On the basis that fuller

consideration of water resources, water supply and possibly water recycling matters does identify that resources, assets and/ or services may be impacted by the project we would recommend further discussion on the following issues:

1. Impact of development on Anglian Water's assets and the need for mitigation
2. The design of the project to minimise interaction with Anglian Water assets/critical infrastructure and specifically to avoid the need for mitigation works and diversions which have associated carbon costs
3. Requirement for potable and raw water supplies
4. Requirement for water recycling (surface water/foul drainage) connections (if any)
5. Confirmation of the project's cumulative impacts with Anglian Water projects including medium to long term Strategic Resource Options
6. Draft Protective Provisions (a template has been previously provided to the promoter)

Please do not hesitate to contact us should you require clarification on the above response or during the pre- application to decision stages of the project.



Darl Sweetland MRTPI
Spatial Planning Manager – Sustainable Growth

cc: info@oneearthfarm.co.uk



Bassetlaw
DISTRICT COUNCIL
— North Nottinghamshire —

Neva Johnson
Planning Inspectorate
Environmental Services
Central Operations
Temple Quay House
2 The Square
Bristol
BS1 6PN

oneearthsolar@planninginspectorate.gov.uk.

Our Ref: 23/01423/PREAPP

Please ask for: Amanda Broadhead

Email: planning@bassetlaw.gov.uk

Dear Neva

11 December 2023

Location Land at either side of the River Trent, extending broadly to the A57 to the north, South Clifton to the south, Skegby to the west, Thorney to the east.

Proposal Scoping Opinion – The construction and installation of solar panels, battery energy storage systems and associated grid connections to generate 740 MW of renewable energy/electricity across 1,500 hectares in Lincolnshire, Bassetlaw and Newark & Sherwood

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11
Application by One Earth Solar Farm Ltd (the Applicant) for an Order granting Development Consent for the One Earth Solar Farm (the Proposed Development)

Thank you for your letter dated 13th November 2023 requesting an Environmental Impact Assessment (EIA) scoping opinion for the above development proposal.

The District Council acknowledges the request for an Environmental Impact Assessment Scoping Assessment under the terms of Regulation 15 of the Town and Country Planning (Environmental Health Impact Assessment) Regulations 2017(as amended), in relation to proposed development outlined above.

The proposed development is not outlined in Schedule 1 of the Regulations.

In terms of Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 the proposed development falls within the following description:

3 – Energy Industry

- a) Industrial installations for the production of electricity, steam and hot water.

The threshold outlined in Schedule 2 for this type of development is 0.5ha.

The proposed development site is approx. 1,500 ha across Nottinghamshire and Lincolnshire and would allow for the generation of 740 megawatts (MW) of electricity.

The site therefore exceeds the threshold as outlined in Schedule 2 of the Regulations.

Whilst no formal screening opinion was submitted to the Local Planning Authority, the applicant has undertaken their own screening opinion which concluded that an Environmental Impact Assessment is required for the proposed development. The Council is in agreement to this approach.

The purpose of the Environmental Impact Assessment, is to establish the nature of the development and the environment in which it is to take place during the construction and operational phases, to identify likely significant effects on the environment that may arise. The EIA regulations require that any development falling within the description of Schedule 2 development will be subject to an Environmental Impact Assessment, where the development is likely to have significant effects on the environment by virtue of such factors as its nature, size or location.

Obviously the proposed Environmental Statement will need to contain the general principles set out in Schedule 4 of the Town and County Planning (Environmental Impact Assessment) Regulations.

The purpose of the submitted scoping report is to establish the following:

1. Identify the nature of the proposed development including its purpose, physical characteristics, land use requirements and any alternatives that have been considered
2. Identify and describe the key environmental topics that the EIA proposes to consider
3. Identify any environmental topics that are not relevant to the EIA and if these are proposed to be scoped out
4. Define the extent to which the key environmental topics need to be investigated and the methodology for assessment; and
5. Enable and initiate preliminary consultation with stakeholders

I will address the above in turn.

- 1) Identify the nature of the proposed development including its purpose, physical characteristics, land use requirements and any alternatives that have been considered

It is considered that the nature of the proposed development including its purpose, physical characteristics and land use requirements have been set out in the submitted scoping report.

- 2) , 3) and 4) Proposed topics to be scoped in and out of the assessment and methodologies

The submitted scoping report lists a comprehensive list of the topics to be scoped.

Chapter 18 lists the following environmental matters that are scoped out and these are as follows:

Glint and Glare

Waste

Wind Microclimate

The District Council's Environmental Health Officer has commented that the Scoping Report (November 2023) scopes out the possible impact from lighting schemes during the construction/decommissioning and operational phases of the project. The potential for light nuisance during the construction phase is not dissimilar to the potential for noise nuisance, which has been scoped in. It may be appropriate to scope lighting during construction into the Environmental Impact Assessment, rather than relying on the later, proposed, Construction Environmental Management, and Demolition Environmental Management Plans.

Nottinghamshire County Council Highway Authority has commented that the proposal would have a significant impact on the existing transportation network mainly during the project's construction phase. Therefore a detailed Transport Assessment (TA) and supporting studies to assess the additional traffic demands and any required mitigation to the highway network would be required. These should be prepared in accordance with current Planning Practice Policy, Nottinghamshire County Council's Design Guide and other industry accepted guidance on TA's. The HA will need to consider the detail of the transportation impacts once the planning application (s) is/(are) made and is likely to secure any necessary mitigation measures through planning condition and S106 obligations. Their detailed comments are attached.

Whilst some topics have been scoped out it is considered that there is a degree of overlap with the topics that are proposed to be scoped in eg Glint and glare will to a degree impact landscape and visual. Likewise cumulative effects will relate to all of the above topics and therefore there will need to be some cross reference with the documents that are submitted with the planning application per se.

A full round of consultation has been undertaken in respect of the submitted scoping report and it is considered that this approach is acceptable based on the very limited consultation comments that have been received to date (some responses have not yet been received; however if these do come back I will of course forward them onto you).

The submitted scoping report does acknowledge that a series of technical reports will be required to accompany the planning application and therefore I attach a copy of the consultation responses that have been received so that these can inform your future submission, these have been received from the following bodies:

BDC Environmental Health
NCC Highways

In terms of the topics proposed to be scoped in the local planning authority is generally in agreement with these and comments are made as follows:

Cumulative and Combined Effects

It is considered that there are some developments missing from the list that have been provided in the scoping report and the applicant's attention is brought to the following link

which sets out the relevant energy developments in the District. From here the applicant will be able to see which ones will need to be considered for this Environmental Statement.

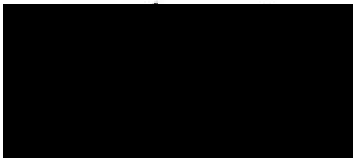
[Energy developments | Bassetlaw District Council](#)

5) Enable and initiate consultation

The Council has undertaken consultation on this scoping opinion and the received responses are attached to this letter which outline the main consultees and their details. There are a number of consultations outstanding and the Council will forward a copy of these responses if they are forthcoming. The Council is happy to facilitate meetings with any consultee as the applicant feels is necessary.

This forms the Council's formal scoping opinion under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

Yours sincerely



Development Team Manager

MEMO

FROM: Environmental Health Manager

TO: Planner Development Manager

FAO: P Department

OUR REF: WK/000160268

YOUR REF: 23/01423/PREAPP

DATE: 06 December 2023

SUBJECT: Proposed National Strategic Infrastructure Project Consultation from The Planning Inspectorate on Behalf of the Secretary of State for a Scoping Opinion

LOCATION: BDC - Planning, Queens Buildings, Potter Street, Worksop, Nottinghamshire, S80 2AH

The Environmental Health team would like to make the following observations/comments.

To discuss any of these comments please ring 01909 533533 and ask for the relevant officer.

	Comments	Officer
Extraction/ Ventilation:-	No comments or observations to make.	Neighbourhood EHO (JP)
Noise:-	I am satisfied that the Scoping Report (November 2023) adequately identifies the factors (both those to be scoped in and scoped out) relating to noise and vibration that should be considered in the Environmental Impact Assessment.	Neighbourhood EHO (JP)
Lighting:-	The Scoping Report (November 2023) scopes out the possible impact from lighting schemes during the construction/decommissioning and operational phases of the project. The potential for light nuisance during the construction phase is not dissimilar to the potential for noise nuisance, which has been scoped in. It may be appropriate to scope lighting during construction into the Environmental Impact Assessment, rather than relying on the later, proposed, Construction Environmental Management, and Demolition Environmental Management Plans.	Neighbourhood EHO (JP)
Contaminated Land:-	Bassetlaw District recommends conducting an initial desk study (Phase 1) to assess potential land contamination risks due to historical land use. Furthermore, they suggest devising a detailed strategy to minimize contamination risks associated with the proposed solar farm during its operational period.	Pollution TO (JW)

Environmental Health Services

TOWN AND COUNTRY PLANNING ACT

HIGHWAY REPORT ON PROPOSALS FOR DEVELOPMENT (PRE-PLANNING APPLICATION ADVICE)

DISTRICT:	Bassetlaw	Date received	28/11/2023
OFFICER:		by D.C.	28/11/2023
PROPOSAL:	Proposed National Strategic Infrastructure Project Consultation from The Planning Inspectorate on Behalf of the Secretary of State for a Scoping Opinion	D.C. No.	2023/01423/PREA PP
LOCATION:	One Earth Solar Farm Project		
APPLICANT:			

The Highway Authority (HA) has reviewed the content of the Environmental Impact Assessment (EIA) Scoping Report (SR) dated Nov 23 submitted by Logika Group Ltd on behalf of One Earth Solar Farm Ltd. The application comprises **the construction and installation of solar panels, battery energy storage systems and associated grid connections to generate 740 MW of renewable energy/electricity across 1,500 hectares** in Lincolnshire, Bassetlaw and Newark & Sherwood. Chapter 12 of the SR determines the extent of the traffic & transportation issues to be considered. The main areas considered are broad transport aspects, with limited detail provided.

A proposal of this magnitude will have significant impact on the existing transportation network mainly during the project's construction phase. Therefore, the HA will require a detailed Transport Assessment (TA) and supporting studies to assess the additional traffic demands and any required mitigation to the highway network. These should be prepared in accordance with current Planning Practice Policy, Nottinghamshire County Council's Design Guide and other industry accepted guidance on TA's. The HA will need to consider the detail of the transportation impacts once the planning application (s) is/(are) made and is likely to secure any necessary mitigation measures through planning condition and S106 obligations.

The TA should include the following details and information: -

1. The access strategy outlining design philosophy and the approach for the scale of development proposed using <https://www.nottinghamshire.gov.uk/transport/roads/highway-design-guide>
2. Note - baseline appraisal data, key analysis parameters and assessment methodology should be agreed with the HA before the full TA work is undertaken.
3. The TA should clearly define the proposed schemes in relation to the different LPA administrative boundaries i.e., Bassetlaw, Lincolnshire, and Newark & Sherwood.
4. The number, size and frequency of the vehicles that will be associated with the construction and completed – operational phases of the proposal.
5. The proposed routing of the construction vehicles from the principal highway network to the proposed sites, including vehicle tracking where necessary to show that the highway network can adequately accommodate construction vehicles access, egress and turning. This will require a Construction Traffic Management Plan (TMP) to be agreed with the HA. Contacts tro@viaem.co.uk abnormalloads@viaem.co.uk

6. Details of the proposed temporary/permanent access(s)/hardstanding in the site, including achievable visibility splays, access widths, finished gradients, surfacing materials and drainage measures. The layout plan(s) should show the proposed access and its interface with the existing public highway network. This must be a topographical plan, accurately showing all street furniture/posts/trees/assets at a minimum scale of 1:500. Access arrangements and proposed highway improvements will require independent Stage I Road Safety Audit (RSA) to be undertaken in accordance with HD 19/15.
7. Details of the proposed welfare compounds/parking/unloading/manoeuvring areas within the site during both the construction and operational phases by use of a comprehensive Construction Management Plan (CMP).
8. All temporary construction sites (expected to be mostly agricultural field) should include proactive measures to prevent deleterious construction material and mud being transferred to the public highway i.e., Wheel wash facilities.
9. The reports should include detailed long-term management strategies to mitigate any negative transport impacts of the development and where possible promote sustainable active movement.
10. The TA should include a chapter that deals with cable routing corridors and utility diversion/installation over/under the public highway for the National Grid connection. Especially, how the main connection of the solar power system will be established at High Marnham substation. The opportunity to share cabling infrastructure with the other solar panel schemes/utilities in the area should be explored.
11. All new cables in public highway need to be installed by a statutory undertaker and use of a Section 50 licence under the NRSW Act for installation by other companies is not acceptable. Contact licences@viaem.co.uk streetworks@viaem.co.uk
12. Some sensitive rural roads will require dilapidation surveys and road condition prior to and after heavy construction work has been undertaken.
13. The proposal must identify any minor public highways affected and their future treatment. This should include definitive/non-definitive rights of way such as public footpaths, public road, bridleway, BOAT or restricted bye way. Contact countryside.access@nottsc.gov.uk.
14. The area appears to contain a limited number of environmental weight limits, but the HA encourages early consultation to limited environmental annoyance to affected villages/residents and to ensure works programmes are not hindered. Contacts
15. Enquiries about adopted public highway records highwaysearches@viaem.co.uk

Please note this list is not exhaustive and the applicant will be expected to provide appropriate assessment information that reflects site conditions and its locality.

Furthermore, the HA reserves its right to vary its assessment requirements and the amount of detail required depending on the outcomes of the iterative transport evaluation process.

P M Evans
Principal Highways Development Management Officer (North)
Ashfield & Mansfield, Bassetlaw Area
Nottinghamshire County Council
Place (Investment & Growth) - Planning Group

05-12-23

Amanda Brookes

From: SM-NE-Consultations (NE) <consultations@naturalengland.org.uk>
Sent: 01 December 2023 16:21
To: Planning; Martyn Beckett
Subject: FAO Ms Amanda Broadhead & Mr Beckett REF: 23/01423/PREAPP One
Earth Solar Scoping Hollowgate Lane High Marnham Notts
Attachments: ufm3_NSIP_-_Consultation.rtf

External Message - Be aware that the sender of this email originates from outside of the Council. Please be cautious when opening links or attachments in email

Our ref: **459057**
Your ref: **23/01423/PREAPP**

Dear Ms Broadhead and Mr Beckett

Thank you for your pre-application consultation request dated and received by Natural England on 1st December 2023.

Natural England is a statutory consultee for planning applications which might affect designated nature conservation sites (Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites), for development affecting significant areas of best and most versatile agricultural land and for development requiring Environmental Impact Assessment. Natural England is not a statutory consultee at the pre-application stage except for NSIP's, and therefore is unable to provide advice free of charge. However, where a development proposal may result in significant environmental impacts or significant opportunities for environmental gain we have introduced a Discretionary Advice Service (DAS) on a cost recovery basis so that we can work with applicants, developers, and consultants to take appropriate account of environmental considerations at an early stage of the process to improve the quality of applications before they are submitted. We believe this could help to save our customers time and money in the long term, whilst also securing good outcomes for the natural environment.

Please visit the GOV.uk [website](#) for more information and a downloadable request form [here](#).

You may wish to recommend our Discretionary Advice Service to the developers/consultants and explain that they are able to contact Natural England directly using this service.

For information, it is the responsibility of the local planning authority (LPA) to decide whether a proposal is 'in or likely to affect a Site of Special Scientific Interest' and if so, to ensure that appropriate consultation with Natural England is carried out. We advise LPAs to make this assessment using Natural England's published set of mapped Impact Risk Zones (IRZs) for SSSI/SAC/SPA and Ramsar sites. These IRZs are available for viewing on www.magic.gov.uk and they may be helpful to you in identifying whether Natural England would need to be consulted on a planning proposal.

For guidance on how to access and use the Impact Risk Zones see [SSSI IRZ User Guidance MAGIC.pdf \(defra.gov.uk\)](#).

Yours sincerely

Sharon Jenkins
Operations Delivery

Consultations Team
Natural England
County Hall
Spetchley Road
Worcester
WR5 2NP

Enquiries line: 0300 060 3900
Email: consultations@naturalengland.org.uk
www.gov.uk/natural-england



Natural England offers two chargeable services - the Discretionary Advice Service, which provides pre-application and post-consent advice on planning/licensing proposals to developers and consultants, and the Pre-submission Screening Service for European Protected Species mitigation licence applications. These services help applicants take appropriate account of environmental considerations at an early stage of project development, reduce uncertainty, the risk of delay and added cost at a later stage, whilst securing good results for the natural environment.

For further information on the Discretionary Advice Service see [here](#)
For further information on the Pre-submission Screening Service see [here](#)

From: [REDACTED] <[REDACTED]>
Sent: 01 December 2023 10:41
To: SM-NE-Consultations (NE) <consultations@naturalengland.org.uk>
Subject: 459057 23_01423_PREAPP Consultation request

Please see attached consultation

[Bassetlaw District Council] Martyn Beckett
Systems Support Officer
Bassetlaw District Council, Potter Street, N/A, Worksop, Nottinghamshire, S80 2AH
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**Canal &
River Trust**

Making life better by water

PINS Ref EN010159

Our Ref IPP-210

Monday 4 December 2023

BY EMAIL ONLY <mailto:oneearthsolar@planninginspectorate.gov.uk>

EN010159 One Earth Solar Project – Scoping Consultation. Comments from the Canal & River Trust.

Thank you for your pre-application consultation on the One Earth Solar Project.

We are the charity who look after and bring to life 2000 miles of canals & rivers. Our waterways contribute to the health and wellbeing of local communities and economies, creating attractive and connected places to live, work, volunteer and spend leisure time. These historic, natural and cultural assets form part of the strategic and local green-blue infrastructure network, linking urban and rural communities as well as habitats. By caring for our waterways and promoting their use we believe we can improve the wellbeing of our nation.

Having reviewed the plans, drawings and scoping documents, we wish to make the following comments:

The Trust are Navigation Authority for the River Trent. We are also landowner of parts of the river, and have absolute freehold interests in small land parcels next to the river, which could lie within the red line boundary of the project boundary. Due to the nature of the need for cable connections, we understand that a crossing of the river is proposed. The proposals also seek to construct elements of the project in close proximity to the river, whilst a significant proportion of the project will likely be visible from the waterway.

The River Trent is classified as a freight waterway, and can accommodate large craft.

Biodiversity

The River Trent corridor provides a linear habitat for wildlife and biodiversity. In line with the principles of paragraph 5.3.17 from the National Policy Statement for Energy 1 (EN-1), species and habitats should be protected from the adverse effects of development. Appropriate mitigation against adverse effects should also be identified in accordance with paragraph 5.3.18.

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We understand that the Environmental Report will be accompanied with a Phase I Habitat Survey. We note that the impact of the wider scheme and the potential mitigation required will likely be informed by the findings of this survey.

The effects to be included in the assessment listed in paragraph 6.36, appear comprehensive. **We wish to highlight that directional drilling activities could disturb nearby habitat through noise and vibration; and suggest that the impact of this is included within the assessment.**

Artificial lighting may be proposed during both the construction and operation phase. It is not clear if effects of this on biodiversity are to be scoped into the Environmental Report, as the impact of lighting is not discussed in chapter 6. We note, however, that chapter 11 indicates that impacts from lighting will be scoped out.

Temporary construction lighting, including upon the cable corridor routing, has the potential to disturb wildlife, including along the river corridor. There is a risk that temporary lighting may be in position for a long time during the period of construction. **As a result, we request that further justification is required for not scoping this into the environmental report, such as the agreement for additional lighting details to be provided prior to the commencement of construction works.** The submission of a construction phase lighting plan with LUX values provided could offer an appropriate solution, and could potentially be provided post determination.

Hydrology and Hydrogeology

Flows of water, or changes to peak flood levels, on the River Trent have the potential to impact the safe passage of vessels on the waterway.

Generally, the information provided suggests the scheme will not result in significant changes to peak water discharges to the River Trent, either directly or through discharge to connected watercourses. The exact impact will, however, depend on the final design of Sustainable Drainage Systems proposed for the site (discussed in paragraph 7.24 – 7.25); and the exact nature of any floodplain compensation discussed on 7.21. We anticipate that exact details of these measures will not be provided in the Environmental Statement. However, we do request that measures are in place so that the final design and specification of these measures is provided and assessed prior to the commencement of works.

We note that it is proposed that the Construction Environmental Management Plan will include a Construction Surface Water Management Plan to discuss how temporary changes to runoff from the site during the construction phase will be managed. Whilst the Trust has no specific objection to this approach, **we request that the Trust should be consulted on the final CEMP document, so that potential impacts on the river corridor can be fully assessed.**

Land and Soils

The proposals involve land in close proximity to the River Trent. We request that any disturbance of land here should seek to avoid pollution to the water environment of the river which could be caused through unintentional runoff from exposed soils, or dust; to ensure compliance with the general aims of parts 5.6 and 5.15 of the National Policy Statement for Energy (EN-1).

Paragraph 8.10 confirms that the development will include a Soil Resource Management Plan (SRMP) and outline Decommissioning Environmental Management Plan (ODEMP) relevant for the construction phase. These could offer an appropriate measure to address risks to the river Trent and interlinking watercourses. Main risks for the River Trent would likely arise from excavated material or pollutants like oil from machinery entering the watercourse. **We suggest that perimeter drains, earth or sandbag barriers to channel runoff, the covering**

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exposed ground and stockpiles to prevent erosion, and siting stockpiles away from the river could be appropriate measures to reduce risks to watercourses that could be incorporated into these documents.

Paragraph 8.12 states that agricultural land will be considered the main receptor for assessment in this chapter. The disturbance of soils could impact the water environment of watercourses including the Trent. **As a result, watercourses could potentially be included as a receptor for consideration.**

Cultural Heritage

10.14 identifies Fledborough Viaduct as a non designated Heritage Asset within the study area of the application site. This is a large structure, providing a local landmark that is highly visible to river users.

Our review of the location plan of the development suggests that the solar scheme would be visible to people crossing the viaduct, and potentially would be visible within the setting the viaduct when viewed from the river. We therefore question paragraph 10.19, where the asset is not listed as being potentially affected by the Proposed Development, and **ask that its non-inclusion in the assessment is reviewed and fully justified.**

Landscape and Visual Effects

The proposals would involve the permanent erection of solar panels in locations visible from the River Trent.

The river in this location is characterised by existing long distance rural views of agricultural fields that are lined with field trees and hedgerows. The site plan extends up to the river (including parts of the river space itself), and both operational and construction phases could have an impact on visual setting of the waterway corridor.

Table 1 within Chapter 1 identified a range of visual receptors who could be affected by the works. Whilst people walking alongside the river will be picked up by the 'people travelling on the PRow network' category, **we request that boaters should be considered as a separate category**, especially as these users have different experiences of the local area, based by necessity on speed and mooring times.

Landscape and Visual Impact Appraisal

We appreciate that proposed submission would include a Landscape and Visual Impact Appraisal (LVIA); we anticipate this would seek to accord with the principles of paragraph 5.9.5 of the National policy Statement for Energy (EN-1).

No viewpoints for assessment have been identified at this stage. **We request that the assessment should include viewpoints from the Trent, so that the impact on waterway users can be fully assessed.** Ideally, this should include at least one viewpoint from the north and south of the Trent, looking over the site area. **Consideration should also be given towards views of the position of the crossing and landscape/biodiversity mitigation works as part of the LVIA assessment.**

Boundary Treatments

We note that fencing is likely to be incorporated as part of the scheme.

The exact finish of any new fencing could have a significant impact on the visual appearance of the waterway corridor, especially if any fencing is to be positioned near to the river.

We advise that any solid treatment to perimeter fencing should be avoided, as this could be highly visually apparent on the landscape, which would result in a high sense of visual enclosure alien to the rural environment. The use of mesh or paladin fencing would be more appropriate, as it would be more light weight in design, and

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would allow more light through. A green finish to the fence would also help make the structure less visually apparent on the landscape. Palisade fencing, should this be considered, would be unlikely to be visually appropriate for the rural setting of the site, as the size of metal bars are relatively wide, and would be more visually prominent.

Glint and Glare

There is a need to consider Glint and Glare effects in accordance with the aims of draft policy EN3. We consider it important to ensure that boat users will not be harmed by any glint and glare, which could impact navigational safety on the river should any users become dazzled by reflections from the apparatus.

We note that Glint and Glare is not to be considered as a separate chapter in the Environment Statement. However, we appreciate that a Glint and Glare assessment is to be carried out and will be reviewed as part of the LVIA assessment. **We consider it pertinent that the Glint and Glare Assessment considers boat users (as well as nearby walkers and other river users) to inform the final Environmental Statement.**

Lighting

Chapter 11 identifies that lighting is not to be assessed as part of the LVIA assessment. Subject to lighting impacts being assessed as part of the assessment on the impacts to the wider landscape as stated within table 11-2, the Trust is broadly comfortable with this approach. Notwithstanding this, however, our comments above with regards to the impact of lighting on biodiversity remain pertinent, and we do believe this needs consideration as part of the Biodiversity chapter of the Environmental Statement.

Transport and Access

The red line boundary of the project includes the River Trent corridor. The exact nature of works in, under or over the Trent are not yet fully identified. In the absence of this information, we consider it prudent that this chapter should include an assessment of the impacts on river users, notably boat traffic, during the construction phase. Operational phase impacts may also need to be considered if any oversailing of the river is proposed. **To enable this, we request that boaters should be listed in paragraph 12.21.**

We understand that detailed consultation has not yet taken place in relation to traffic and access.

Based on the position of the development, we expect that impacts concerning road traffic and access for the Trust will be limited to those of any routing of traffic over bridges that cross our network. We request that any routing should seek to utilise adopted roads where possible, with the avoidance of narrow bridges that could be damaged by large HGV use. This would likely be more pertinent to canal crossings of artificial canalised waterways in the local area (including the channel through Newark and the Chesterfield Canal to the north) as opposed to the wider main channel of the River Trent.

We wish to highlight that the River Trent is a freight waterway capable of handling freight traffic. Opportunities may exist for the carriage of construction associated traffic close to the site via waterborne craft, which could help reduce the need for carriage by road. This could help to reduce road miles and help improve the sustainability of the proposal, and to help mitigate the impacts of goods transport to and from site in line with the principles of section 5.13 of EN-1 and section 2 of the National Planning Policy Framework. The potential use of the river for such use is not discussed in the scoping documents.

We consider that options for alternative non-road based construction transport to and from the site, including use of the river, should be considered in the Environmental Report submitted with the main application, to explore whether this option is feasible (even if just to discount this option). We would be happy to provide further advice upon this.

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General Comment on the Routing of the Cables

We anticipate that new cable crossings of the River Trent, required for the scheme, will be sited underground. The Trust generally would welcome this approach, as it would help to minimise any impact on the visual appearance of our waterway corridors. It would also minimise any potential harm to navigation that could be caused through the positioning of cables above navigable channels.

Should the scheme be amended to incorporate above ground cable crossing(s) of the River Trent, then we advise that the Environmental Report would need to assess the visual impacts of the cables, and how they would be assessed and impacts mitigated against. In addition, consideration would need to be given to the potential impact on Navigation on the river and the headroom available for craft below (should any oversailing of the river be proposed).

Works to install cables below the waterway would need to be carefully managed to avoid any significant vibration or loading that could adversely impact the stability of the river banks above.

We request that methodology for any directional drilling and associated risk mitigation details should be submitted prior to the commencement of development on site.

Land Ownership

The red line plan of the project is complex. The Trust have ownership interest in land parcels adjoining the River Trent, in addition to specific freehold interests in the river itself.

Of specific note, to the east of the River, the Trust has freehold interests in Title NT474106. It is difficult from the high level red line plan to identify if any of this land is included in the project boundary.

So that the full impact on Trust land can be fully evaluated, we request that the promoter provides a list of parts of Trust land that the project is likely to impact. This would assist with any land negotiations with need to be advanced further.

Our Estates contact, Steve Robinson, can be contacted at [REDACTED] for more information.

Other Comments

Our consent as Navigation Authority and Landowner would be required for the installation of a new cable below the River Trent.

Please note that the Canal & River Trust is a statutory undertaker which has specific duties to protect the waterways. **The Trust will seek to agree the rights the project requires over Trust land and we will resist the use of compulsory powers which may affect our undertakings.**

For the installation of a new cable below the river, **the applicant is strongly advised to contact the Trust's Utilities section at utilitiesenquiry@canalrivertrust.org.uk as soon as possible for further advice to ensure that the principle of a cable crossing can be agreed.**

In our capacity as landowner, we advise that the applicant/undertaker would likely be required to comply with the Trust's 'Code of Practice for Works affecting the Canal & River Trust' (available at: <https://canalrivertrust.org.uk/business-and-trade/undertaking-works-on-our-property-and-our-code-of-practice>).

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The applicant/developer is advised to contact the Canal & River Trust's Infrastructure Services Team via switchboard on 0303 040 4040 should they have any questions or require further information upon the Code.

Biodiversity Net Gain

We note the proposal to provide Biodiversity Net Gain will be provided as part of the proposals (e.g. paragraph 6.26).

The Defra Biodiversity Metric requires that planning applications including land within the site boundary that is within **10m of a canal** are supported by an assessment of the baseline condition of the watercourse. Paragraph 10.1.3, figure 10-1 and table 10-1 of the [Biodiversity Metric 4.0 User Guide](#) explain these requirements. It is the Trust's understanding that, unless exemptions apply, in these circumstances, developers will need to deliver a minimum 10% net gain in watercourse biodiversity units. Development may also affect other habitat types on land owned by the Trust, including, but not limited to, grassland, woodland, scrubland and hedgerows.

Ecologists working on behalf of developers should obtain, and comply with, consents from the Trust to undertake any necessary habitat condition assessments and ecological surveys on our land, consistent with our [Code of Practice](#).

The Trust will consider proposals from developers to deliver net gains on its land (be these watercourse units or other habitat types) on a case-by-case basis. In doing so, we will have regard to Defra's '[Sell biodiversity units as a land manager](#)' guidance. The Trust's agreement to habitat enhancement activities being undertaken on our land will be subject to operational, management and commercial considerations. We will be happy to discuss this further with you.

Protective Provisions

Due to the proximity of works to the River Trent, including works below the waterway, we consider that Protective Provisions will be necessary for the protection of the Trust during the construction, operation and any decommissioning stages of the development.

We would welcome the opportunity to discuss this further with the applicant during the development of their initial Development Consent Order. To assist with the applicant's drafting, we can provide a set of 'standard' draft protective provisions for the Trust, which can be used as a basis to work from and tailor to suit this development. We would seek to reach agreement on the provisions at the earliest possible opportunity. **Please contact myself on the details below should you wish to discuss this further.**

We hope the above comments are of use. If you have any questions or require further information, please feel free to contact me via the contact details below.

Yours Sincerely

Simon Tucker MRTPI
Area Planner

Simon.Tucker [REDACTED]
[REDACTED]

<https://canalrivertrust.org.uk/specialist-teams/planning-and-design>

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CITY OF
Lincoln
COUNCIL

The Planning Inspectorate

Directorate of Communities & Environment

Simon Walters MBA, ACG, MCMI

City Hall, Beaumont Fee

Lincoln, LN1 1DF

Telephone: [REDACTED]

Facsimile: [REDACTED]

Website: www.lincoln.gov.uk

Marie Smyth is dealing with this matter

Direct Dial:

E-mail: [REDACTED]@lincoln.gov.uk

Our Ref: 2023/0820/LAC

Your Ref:

Date: 21st November 2023

Dear Sir/Madam,

Town and Country Planning Act 1990

Location: One Earth Solar Farm

Proposal: Scoping Opinion For One Earth Solar Farm at land to the east and west of the River Trent.

Thank you for your consultation on the above and I would confirm that the City of Lincoln Council has no objections to this proposal.

Yours faithfully

[REDACTED]
Mr K Manning
Assistant Director - Planning

Introduction

The Parish Council of Dunham with Ragnall, Fledborough and Darlton are not in support of the applicant's proposals; as outlined in their Scoping Report, submitted on the 13th of November 2023.

The Parish Council has outlined information that should be included in the Environmental Statement. Due to the short time limit imposed, this list is not exhaustive, and we may have future information that we feel will be important in affecting the Environmental Statement.

Additional considerations

Many of the decisions the applicant has made in their Scoping Report are based on an indefinite operational phase. We strongly insist that the operational phase is time-limited, in line with the other solar NSIP's in the area. With the applicant's current proposal, any references to the project being temporary should be removed, and their effects assessed as permanent.

The development of the STEP project at West Burton, a nuclear fusion power station located on the former coal-fired power station has wide reaching effects across the Trent Valley area and is of national importance. The effects of the proposed development must be scoped into the assessment as a separate section, rather than being included under the socio-economic section.

The Council insists that a moratorium on all Trent Valley energy projects until a masterplan has been written, incorporating impact on STEP programme.

There are several solar projects of a similar scale planned in the wider area. Although these developments are at some distance away, due to their scale and identity, the applicant must assess the cumulative effect of these projects against their own proposed solar development. Due to the number of these projects at a later stage in the national infrastructure project process, their effects must be considered under a separate section of the environmental assessment.

National Grid have already completed the first stage of consultations for the North Humber to High Marnham national infrastructure project. Their proposed development includes areas in, and nearby, the applicant's proposed development area. The cumulative effects of the two projects requires detailed consideration, as detailed in Paragraph 4.2.5 of NPS En-1.

The applicant must complete a cumulative effects assessment, following the advice published by the planning inspectorate.

The applicant must consider in their environmental assessment the effects of the scale of the development. The areas outlined in their map includes vast blocks of solar panels. The sheer scale of the proposed development should be taken into account in all the areas of their assessment.

No details of alternative sites have been identified in the scoping report submitted by the applicant. Section 4.4.2 of NPS En-1 details what is required. The applicant must detail in their assessment why land outside of the outline area was not considered for their proposals in their assessment.

The area already has pylons and transmission wires, as well as being located near a large substation. The area already hosts energy infrastructure associated with national infrastructure. Large areas of the outline area to the west of the river Trent are prone to surface water flooding and no consideration to alternative land has been given.

Other solar NSIP's to the north of the site have panels some distance from their associated substation, the applicant has not given any justification for their close proximity to the High Marnham substation and the cumulative affects on visual appearance this would bring.

The applicant must include in their assessment how their proposed development will affect the weak mobile phone signal in the area, and how they would mitigate any effects.

Included in the applicant's assessment should be details of any plans to re-panel the site in the future, and what effects it would have on wildlife, soils and the community.

Biodiversity

An Environmental Impact Assessment from Nottinghamshire Wildlife Trust must be included in the assessment.

The applicant should aim for a much higher biodiversity net gain rather than the minimum of 10%, especially considering the scale and duration of the proposed development. As outlined in the applicant's map, the majority of the mitigation and enhancement is located to the east, and near, the river Trent. The mitigation and enhancement must be laid out in a way that improves biodiversity over the wider area.

The baseline surveys have not been completed to a sufficient level of detail or duration for a development of this scale and proposed duration. Those conducted did not fully follow the guidance given in several of the survey methodologies, and are limited in the number of locations surveyed. Given the scale of the proposed development this cannot form a reliable baseline.

Fledborough to Harby Dismantled Railway LWS, designated for botanical interest, has not been identified as an important wildlife habitat. It forms an important wildlife corridor across the area, and also across the Trent. The sidings and site of the former High Marnham power station has also been omitted. These sites must be added as wildlife habitats and the areas sufficiently surveyed.

Full, year-long surveys of species identified in the applicant's scoping report should be conducted across the whole site to form a more representative baseline and to aid in mitigation and enhancement.

No detailed wildlife surveys on land at or near residents in the proposed development area have been conducted. Survey licences, similar to those being pursued by National Grid in their NSIP must be sought to establish baseline data near sensitive receptors and to guide mitigation and enhancement.

Protection and enhancement of local wildlife sites must be included in the applicant's assessment.

The effect of the proposed development on raptors must be included in the assessment. The loss of their hunting grounds puts them at risk. Not only are these species an important part of the food chain, but they also have considerable visual appeal.

The construction plan must include plans to mitigate harm to nesting bird species found in hedgerow habitats.

No details have been given by the applicant on how they plan to mitigate areas that would be lost to transitory and roaming animals, such as badgers and deer.

The applicant must include in their assessment how their plans will affect the ongoing rewilding efforts being made by the parish council.

The effects of the scale of the development should be included in the biodiversity section.

The applicant has not detailed how the biodiversity net gain will be measured during any phase of the project. This needs to be scoped into the assessment.

The applicant should also seek to acquire independent reports on baseline biodiversity from independent organisations, such as the RSPB etc.

The effect of the proposed project on creating a microclimate that would adversely effect wildlife must be included in their assessment.

Hydrology and Hydrogeology

The applicant's statement in their scoping report that the risk of surface water flooding is low is false, the low-lying farmland west of the river Trent floods almost annually.

The surface water flooding risk of the low-lying areas to the west of the river Trent requires further investigation by the applicant and Environment Agency. The historical flooding in this area does not match up with the Environment Agency Flood Risk from Surface Water map. The surface water flooding risk in this area does not take into consideration the pumping station for Fledborough Beck, and the flooding risk associated with its potential failure.

The applicant has not identified the risk of damage to subsurface field drains that are present across agricultural land. These field drains require mapping to inform panel mounting placement does not damage or affect the ability of the land to drain. Damage to field drains has the potential to degrade soil structure and future agricultural use of the land.

The applicant has not considered septic drainage fields in areas, such as Fledborough, without mains sewers. These areas must be identified as areas where panels must not be placed, damage to these areas would present a health risk.

Additional or alterations to watercourse crossing points must be fully assessed. Any new crossings must include details of maintenance to prevent any flooding risk.

The effects of surface water run-off from solar panels must be fully assessed to prevent channelling and soil erosion. Run-off from panels must be managed in a way that minimises any reduction in water quality or increase in surface water flooding.

Offsets from watercourses should be made wider than recommendations provide, to account for climate change requiring channels to be widened.

Consideration must be made for the effects of climate change on surface water flooding, and an increased risk of flooding from the river Trent.

The responsibility of the maintenance of ditches and dykes across the proposed site need to be established. If the land is to be used for solar panels there is little incentive for land owners to maintain them, if these watercourses are not maintained it risks worsening the effects of flooding in the local area.

Land and Soils

The potential loss of BMV land must be scoped into the assessment; no BMV land should be included in the development.

Physical damage to the soil during the operational phase needs to be scoped back in to assess the potential damage from panel run-off.

The applicant must assess the impact on soils that would result from being shaded by solar panels for the duration of the operational stage.

The Soil resource management plan needs to include soil sampling periodically, adjusting the plan if needed to prevent the loss of BMV land.

Land and groundwater contamination should be scoped back in due to the risks associated with any discharge or fire from the battery energy storage system.

The soil management plan must include the effects of climate change on the area included in the proposed development.

There needs to be consultation with local communities on the details of the soil management plan.

Buried Heritage

Ground-penetrating radar should be used across the site rather than relying only on LIDAR data.

The applicant has only listed designated monuments individually as buried heritage assets, rather than listing those known across the site.

The proposed development is within the vicinity of the deserted village of Woodcotes. (Nottinghamshire HER monument record M4652) The applicant has not identified this site as buried heritage. The applicant must scope this into their assessment, along with mitigations.

The proposed development includes the potential Roman settlement at Ragnall (Nottinghamshire HER monument record M478) and includes this site as a potential area for solar and associated infrastructure in Appendix A of their Scoping Report. This area requires surveying, excluding from the development area, and must be scoped into their assessment.

The sunken village of Ragnall (Nottinghamshire HER monument record M6210) and Grounds at Ragnall Hall (Nottinghamshire HER monument record MNT26615) are in close proximity to the development area, and must be scoped into the assessment.

Cultural Heritage

The applicant has only assessed the built cultural heritage in their report. No details of social heritage have been included, such as Fledborough once being the 'Gretna Green of England.' Many buildings in the area have links to larger estates or specific landowners, as well as other aspects of heritage. The applicant should include the effects on these aspects in their assessment as a separate section.

Customs/traditions of farming communities should be included in a social heritage section.

Rural lifestyles and local values should be included in a social heritage section.

The effects of the proposed development on social heritage and communities should also be included in mental health and socio-economic sections of the assessment.

The applicant must consult owners of heritage assets in addition to consulting conservation officers to undertake a detailed assessment, and establish what design and mitigation measures need to be put in place.

The applicant states that non-designated heritage assets in the area are of lower significance. This has not been justified, and many of them have characteristics that would merit listed status. There are many reasons why the respective owners have not sought listed status.

There must be detailed consideration in the assessment on how it would impact Fledborough Viaduct. This prominent feature of the landscape would be at particular risk with the outlined plans.

Consideration of cultural heritage in the assessment must consult the local community, and not just the district planning office.

The applicant notes that the landscape is already fairly industrial/power-focussed when scoping in the effects to historic landscape character where it contributes to the setting of heritage assets. The parish council does not agree with this assessment.

The landscape has changed in the 20 years since the power station closed, with a focus on wildlife regeneration and tourism.

The applicant has only considered listed buildings and non-designated heritage assets when the National Policy Statement EN-1 has a wider scope.

Other heritage assets from the Historic Environment Record need to be included in the assessment of cultural heritage. These include the collection of heritage assets at the former Fledborough railway station, and the buildings listed in the HER in Ragnall.

The proposed development area is largely agricultural in nature and is a huge part of our cultural heritage. This must be included in the assessment.

No consideration has been given by the applicant towards buildings that could be given non designated heritage asset status. Given the scale of the proposed development, it is likely that some buildings will be added, or apply for listed status.

Landscape and Visual

No visual receptors have been chosen for users of the river Trent. These must be chosen and the Canal and River Trust must be a statutory consultee. No consideration has been given to anglers on the river Trent, the effects of the development on anglers should be included in the environmental assessment.

The applicant's assessment of the landscape context in their scoping report does not include the prominent feature of the former railway line and associated embankments and cuttings. This must be scoped in.

The Fledborough Viaduct is not included within the Land Use, Infrastructure and Settlement section of their scoping report and must be included.

The cables for power transmission must be buried to reduce visual impact, directional drilling must be used across the Trent to eliminate any visual impact on the views and to avoid alterations to Fledborough Viaduct.

The views from the viaduct and western embankment give open views to the north. The assessment that these views are truncated by vegetation can be disproved by site visits, especially in winter.

The applicant's choice of planting must assess the relevance of the landscape character, which is predominantly Trent Washlands to the west of the river Trent.

The applicant must assess the visual impact from roads. The roads to the west of the Trent are usually higher than the surrounding open and flat farmland where solar panels are proposed.

The applicant must consult directly with properties that have been selected as important visual receptors, in conjunction with approaching local authorities.

The use of CCTV cameras in rural environments, particularly near roads and properties should be assessed individually. These cameras would have a large impact on visual appearance and mental wellbeing of residents in areas devoid of such infrastructure.

The effects of the scale of the development should be included in the landscape and visual section.

The effect of large blocks of solar panels must be assessed by the applicant. These would have a much greater impact than several smaller blocks containing the same number of solar panels.

The character of public rights of way must be maintained. Many of the rights of way enjoy an open view of countryside, mitigation and screening that limits these views would be detrimental to the visual appearance of the area.

Any temporary closures of rights of way must be planned in advance with consultation from County, District and Parish councils.

The location of visual receptors must include consultation from Parish Councils as well as local planning authorities.

The effects of climate change on the visual appearance of the landscape should be scoped into the assessment. There is likely to be an increase in flooding in the winter and droughts in the summer. The appearance of the development through these conditions should be considered.

Transport and Access

The applicant's proposals to provide permissive routes would likely result in an increase of traffic using narrow roads servicing local residents. The effects of the development on and increase in traffic, and proposed mitigations such as passing places should be included in the assessment.

Air Quality

The choice of materials for access roads and permissive routes proposed across the site must be assessed on their impact to reduce air quality through dust emissions.

Carbon and Climate Change

The embedded Carbon emissions of the infrastructure, such as mounting and electrical equipment, and the solar panels, should be included in the assessment due to the colossal scale of the proposal.

The use of recycled steel must be considered, along with the reduction of concrete and use of recycled aggregate for foundation material where needed.

The effects of climate change must be considered in all other sections of the assessment.

Noise and Vibration

Solar panels are 'hard' surfaces that have a limited ability to absorb noise. The applicant must assess, and model, if possible, the effect of panels on exacerbating current noise from road traffic and other noise sources.

The impact of noise from inverters and substations should be scoped into the assessment. As inverters would be located across the site, the accumulation of small amounts of noise would have a much larger impact. Passive cooling must be chosen where possible to avoid the use of fans and eliminate noise. When details of the locations of such infrastructure is known, noise modelling should be carried out.

Permanent noise monitoring stations should be included within the design, with data made available to local authorities to ensure the applicant is following details of their construction plan. During the operational phase, monitoring would ensure noise is kept to a minimum.

The applicant must include details of the potential noise pollution arising from the battery storage. The batteries must not be located near households.

The effects of climate change on the noise emissions from electrical equipment, given that temperatures are set to rise, must be considered.

The effects of noise on wildlife, such as bats and owls must be considered in the assessment.

Human Health

A specific section of the assessment for mental health and wellbeing must be included in the assessment. This is a nationally important health area, and the effect of solar panels covering a large area of open countryside must be assessed. Every effort must be made to ensure any development has no adverse effect on mental wellbeing.

The impact of the proposed development on the mental health of all ages needs to be assessed. More specific assessment of groups with increased susceptibility to mental health issues, such as young adult males, must be fully assessed.

The effects of the development during the operational phase on mental health and wellbeing must be continually assessed, and additional mitigation measures considered.

The health effects on elderly populations at risk of Alzheimer's disease and dementia must be scoped into the human health assessment. The area is an agricultural setting, and huge changes to this may result in an increase in the prevalence of these conditions.

Risk taking should be scoped back into the assessment. The risks associated with young adults and other individuals accessing the proposed infrastructure should be addressed.

The effects of the development on community safety should be scoped back in. A solar development is likely to attract thieves seeking metal.

Community severance and community engagement should be scoped back into human health. Psychological severance with some settlements experiencing a sense of enclosure by surrounding development, and the impacts on mental wellbeing must be assessed.

The effects on community engagement resulting from the process of engaging with the application should be considered. The process over several years has a high likelihood of reducing community engagement as time and effort will be directed away from local communities and towards the National Infrastructure Project process.

Health effects related to the project must not be deemed as temporary. As the project is planned to have a significantly long operational phase, for the assessment of health effects, these must be considered as long-term effects.

Cable routing across the site must be considered in a way that minimises any potential risks of accidental electrocution, such as running cables under roads. The routing of cables should be planned to avoid routing near houses to reduce any potential effects of electromagnetic sensitivity.

The effect of the proposed development on road traffic users should be included. Not only in terms of glint and glare, but also on the risks associated with road traffic collisions. The 'soft' environment that is currently in the area means that vehicles that come off the road network are less likely to suffer major injuries. With the proposed development the infrastructure has the potential to cause major injuries. These effects must be assessed and mitigations proposed, especially in areas that have had a high number of road traffic incidents.

Socio-Economics

Figures on employment in the agricultural sector should be included in the baseline assessment.

The applicant must submit an economic impact analysis for a reduced mixed economy as part of their assessment. e.g. depopulation of villages because of reduced job opportunities resulting in reduced or no investment in the area, reduced or no small business start-ups, loss of jobs across the agricultural industry, including contractors, packaging, heavy goods drivers, Newark Sugar Factory, tourism.

The applicant needs to consult with the Council for the Protection of Rural England (CPRE) regarding the impact of large solar plants surrounding communities.

The effect of the development on leisure and tourism must be assessed in detail. The proposed development has a large potential to limit investment and opportunities for this sector.

The proposed development will result in a landscape that is predominantly solar panels. The reduction in diversity of businesses, and businesses that support them needs to be assessed.

The applicant must assess the effects of the proposed development on investment in small businesses that serve the area.

The applicant needs to provide data on population changes where solar plants surround villages as part of their assessment.

Loss of land knowledge should be assessed - farmers know their fields, and after 40 years this knowledge would be lost.

The effect of the proposed development on the loss of locally available jobs, in the agriculture and leisure and tourism sectors, needs to be assessed. During the short term the leisure and tourism industry is at particular risk.

The effect of the proposed development on the diversity of sectors for employment should be assessed. With no development there are opportunities for small and medium enterprises to develop in the area, the proposed development has a high chance of limiting this opportunity.

The effect of the proposed development on the tourism sector associated with the national cycle network along the Fledborough Viaduct needs to be assessed. The area saw a marked increase in people using the network during the COVID-19 period, which has continued. The applicant must assess the impact that may be caused due to their proposed development.

Customs/traditions of farming communities, along with other social heritage, risk being lost. The applicant should assess how their proposals will mitigate this.

The proposed development increases the loss of farming skills and expertise, in a sector that has an ageing population and fewer younger farmers. The applicant needs to assess how their proposals will affect young people entering the agricultural sector.

The applicant must assess the effect of their proposals on mobile phone signals and infrastructure. The effect of the infrastructure on mobile phone signals, which are vital in a rural area, must be assessed.

The long-term effects of the development on local B&B's and Air B&Bs should be assessed. This area of the leisure and tourism sector has the potential to provide even more local employment and opportunities. The proposed development will jeopardise these small businesses if the effects are not properly assessed.

The effect of the proposed development on the ability to sell houses in the area must be assessed, along with the reduction in house prices. A development of this scale will affect the local housing market as sellers are unable to downsize. The effect of this has wider implications for care, health, and employment as residents are 'stuck' in their houses.

The potential for 'brain-drain', where young adults do not return to the area as a result of the proposed development must be included in the assessment. The effects of 'brain drain' on the wider economy needs to be assessed, as adults with higher levels of education leave the area after gaining qualifications.

The proposed development is likely to result in a decrease of school places; residents will struggle to sell and downsize, resulting in an ageing population, overlapping with health effects, and fewer young families in the area with children. The effect on school places should be scoped back in.

The applicant must include in their assessment how they plan to avoid job loss due to the loss of agricultural land. They should also include plans to create jobs in the area and what they will do to avoid any jobs they create from being filled by those from outside the proposed development.

The applicant must include details in their assessment regarding wellbeing and community cohesion, and what mitigations they will provide at all stages of the proposed development.

Glint and glare

The applicant plans on including glint and glare as an appendix to their assessment. This must be scoped back into their assessment. This is in line with the National Policy Statement EN-3.

As the applicant intends to align panels in a north-south orientation, detailed assessment on roads running in similar directions within the area must be included.

Darlton Gliding Club, Gamston Airport and the Civil Aviation Authority must be consulted as part of the glint and glare impact assessment. The applicant must make specific assessments regarding glint and glare on Gliders.

Risk of Major Accidents and Disasters

The applicant has scoped this out of their assessment, with details to be included in other sections. As the proposed development includes many electrical installations, as well as battery storage, and the risks of flooding across the site, this should be a separate section. The risk of major accidents associated with the battery energy and storage system must be assessed in a Risk of Major Accidents and Disasters section. The predicted output of the development suggests that the total battery capacity will be large. As such, more detailed assessment must be included.

There is public concern over the long-term reliability of battery storage, detailed assessment is required to address these concerns.

Battery storage risk assessments need to take into consideration the proximity to local fire and rescue services, as well as their capacity to deal with any fires at the site(s) without affecting their ability to perform their other duties.

The potential damage to soil and water quality following a fire or discharge from the battery storage must be assessed.

The effects of climate change, such as wetter winters, drier summers, and heavier/more prolonged periods of rain must be assessed in relation to major accidents and disasters. For a development that plans to be operational for many decades, the increased potential needs to be fully assessed, and design and mitigation measures considered.

Although flooding is addressed in the Hydrology and Hydrogeology section, the impacts of climate change and disasters caused by damage to key infrastructure, such as pumping stations and flood embankments needs assessing.

Waste

The applicant has scoped out waste from their assessment, being addressed in the construction plan and other plans. The effects of waste arising from decommissioning, especially for a development proposed at such a large scale needs to be considered.

The applicant must detail measures that will be taken to minimise waste during the decommissioning phase.

Assessments on choice of materials and design to minimise waste that will be created in the decommissioning phase should be included.

The applicant should assess how changes over the lifespan of the proposed development will affect the accessibility to disposal of waste generated during the decommissioning phase, such as the availability of landfill.

Conclusion

This forms a response from the Parish Council of Dunham with Ragnall, Fledborough and Darlton. We hope that this feedback helps shape the Environmental Impact Assessment.

Madeline Barden

Chair,
Dunham with Ragnall, Fledborough and Darlton Parish Council

Planning Inspectorate
National Infrastructure
Planning
Temple Quay House (2 The
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Avon
BS1 6PN

Our ref: XA/2023/100046/01-L01

Your ref: EN010159

Date: 11 December 2023

Dear Sir/Madam,

ENVIRONMENTAL SCOPING REPORT (13 NOVEMBER 2023)

ONE EARTH SOLAR FARM

Thank you for consulting us on the EIA Scoping Opinion for the above project. We have reviewed the Scoping Report, referenced Scoping Report One Earth Solar Farm Ltd dated November 2023, and have the following advice:

We broadly agree with the topics to be scoped in and out of the further assessment within the Environmental Statement (ES). We have provided our advice on these topics within our remit below. These are in the order prescribed by the scoping report for the ease of reference.

Biodiversity

We acknowledge that details of the methods of cabling are yet to be established. For any watercourse the preferred method, presenting least risk is usually horizontal directional drilling (HDD) or other trenchless techniques. We look forward to further details and justification for chosen method for each crossing.

We understand from section 3.28 that cabling will be required to cross the River Trent to connect with the High Marnham substation. The River Trent at this location is a key migratory route for Atlantic salmon, smelt, sea lamprey, river lamprey, Allis shad, Twaite shad and European eel. For any watercourse, in particular a watercourse such as the River Trent, the preferred method, presenting least risk is horizontal directional drilling or other trenchless technique. We look forward to further details and justification for the chosen method.

The applicant should ensure there is a sufficient buffer between the fence and any ecological feature such as watercourses and ditches. This will allow for natural movement of mammals up and down the system.

It is understood from Figure 3-6 that there is not a proposed access route to cross the River Trent. It is unclear whether other smaller watercourses will need to be crossed. Should any access tracks cross watercourses or ditches we would expect to see open span bridge design. We support the proposal to retain and use existing watercourse crossing points where possible. The applicant should also consider whether these crossing points could be improved for ecology, for example removal of a culvert and replacement by an open span bridge.

We are pleased to see the proposal to achieve Biodiversity Net Gain (BNG) in excess of 10% noted in section 3.41. We recommend the applicant refers to both mitigation measures within the Water Framework Directive (WFD) and opportunities within any Local Nature Recovery Strategies.

This approach is supported by section 4.5 of National Policy Statement EN-1 [National Policy Statements for energy infrastructure \(in force until early 2024\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/national-policy-statements-for-energy-infrastructure-in-force-until-early-2024) and also paragraphs 174 and 179 of the National Planning Policy Framework (NPPF) [National Planning Policy Framework - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/national-planning-policy-framework-guidance).

The enhancement of biodiversity in and around development should be led by a local understanding of ecological networks, and should seek to include:

- Habitat restoration, re-creation and expansion.
- Improved links between existing sites.
- Buffering of existing important sites.
- New biodiversity features within development; and
- Securing management for long term enhancement

The Environment Act 2021 looks to ensure that the overall impact from development on the environment is positive. The Act includes measures to strengthen local government powers in relation to net gain and a minimum requirement of 10% biodiversity net gain. Although we recognise that provision of BNG is not yet mandatory for Nationally Significant Infrastructure Project, we encourage the applicant to consider an approach to development that results in measurable net gains in biodiversity, having taken positive and negative impacts into account.

The [Planning Practice Guidance \(PPG\)](#) provides guidance on the application of net gain and Institute of Ecology and Environmental Management, together with CIRIA and the Institute of Environmental Management and Assessment have published guidance on how to deliver net gain in practice. These can be downloaded [here](#).

We look forward to receiving the outline Landscape and Ecological Management Plan (LEMP) as part of the DCO application which will set out the principles for biodiversity as stated in section 3.42.

Any construction compounds will need to be secure to prevent accidental entrapment of wildlife, this is especially important near watercourses where otter may move up and down stream frequently. Any trenches will need to be covered when not being worked.

We support further surveys addressed in section 6.12 and 6.25 for both otter and water vole in 2024. Please provide full details of these surveys. These surveys must be in line with best practice and include all potential watercourse crossings (access, cabling etc).

We note that there have not been any surveys for fish. Any works in or near a watercourse including bridges, culverts, cabling may impact on fish species present in both the River Trent and other waterbodies within the site. Fish will need to be considered. Impacts should include the potential impacts of electromagnetic fields on migratory and non-migratory fish.

We support comments in section 6.26 and 6.28 regarding environmental measures to further investigate opportunities to achieve biodiversity net gain on site, which as suggested should include potential opportunities to enhance habitats along the River Trent riparian corridor. This could also include removal of hard revetment or instream structures such as weirs if present both on site and off. The applicant should also consider any mitigation measures for these waterbodies under the Water Framework Directive as well as opportunities identified in Local Nature Recovery Strategies.

Water Framework Directive

The main bodies of concern regarding WFD are The Beck Catchment, for which the red line boundary intersects twice and a portion of the Trent Bifurcation Pingley Dyke to Winthorpe, which the red line boundary borders, alongside some more minor tributaries such as the Moorhouse Beck. All these waterbodies have moderate ecological status, there is minor opportunity to provide some improvements to the Beck Catchment and the Moorhouse Beck as some of the reasons for not achieving good status include diffuse sources of pollution and poor soil management, land drainage because of agricultural practices. Changes to land use may improve this. The report mentions the Fleet Catchment. This catchment lies outside of the redline boundary and the opposite side of the Trent so likely to be outside of any influence. Please provide further comment on why this catchment has been included.

The applicant confirms that a WFD compliance assessment will not be completed if the detailed assessment does not identify any likely significant effects.

Depending on the methodology used, the detailed assessment may not provide adequate evidence that the proposed development will not cause deterioration to WFD status of any designated waterbodies, nor will it prevent the achievement of 'Good' status.

It is important that the applicant recognises that WFD impacts are assessed in a different way from the EIA approach. Applicants will need to clearly identify in their documentation (either within the ES or as a standalone document(s)) the implications of the Proposed Development for the objectives of the WFD and relevant RBMPs. The EA recommends the applicant reviews [PINS Advice Note Eighteen](#) to ensure that adequate assessment is carried out as part of their application.

Groundwater and Contaminated Land

The majority of the development site is underlain by the Mercia Mudstone Group, with very small areas to the east underlain by the Scunthorpe Mudstone Formation and Penarth Group. The Mercia Mudstone is classified as a Secondary B aquifer, the Scunthorpe Formation is classified as Secondary undifferentiated and the Penarth as unproductive aquifer.

Superficial deposits at the site include the Holme Pierrepont Sand and Gravel Member, Alluvium, Blown Sand and Till. These are all classified as Secondary A aquifers. Superficial deposits are absent in parts of the site.

The Anglian Water Newton public water supply abstraction (a group of groundwater abstraction boreholes) is present within and adjacent the site boundary. This abstracts from the Triassic Sandstone which is confined by the Mercia Mudstone at this location. This abstraction has an associated Source Protection Zone 1c,2c & 3c (where c represents that the sandstone is confined by the mudstone) and these zones are within the development boundary.

We are largely satisfied with the matters that are proposed to be scoped in and out of the Environmental Impact Assessment and provide further comments in relation to Sections 7 and 8 below.

Chapter 7: Hydrology and Hydrogeology

This chapter states the effect that the Proposed Development will have on the hydrogeology and groundwater flows will be scoped in. We note that private water supplies have not been mentioned in section 7.26 where other important receptors have been listed. These should be considered as part of the assessment. We are satisfied with the decision to scope out pollution prevention and understand that this will be included with the Construction Environmental Management Plan (CEMP). We note that Battery Energy Storage Systems (BESS) are included as part of the proposed development. They have the potential to pollute the environment. Applicants should consider the impact to all environmental receptors during each phase of development. Particular attention should be applied in advance to the impacts on groundwater and surface water from the escape of firewater/foam and any contaminants that it may contain. Suitable environmental protection measures should be provided including systems for containing and managing water run-off. This should form part of the CEMP.

Cabling for the new scheme may be installed in trenches or via the use of horizontal directional drilling. This work could involve the use of drilling muds and their use may require risk assessment to ensure they do not pose a risk to controlled waters. The proposed use of directional drilling techniques should therefore be included in the CEMP.

Chapter 8: Land and Soils

The guidance section (8.2) does not refer to our 'Land Contamination Risk Management' guidance. This should be included as it is the over-arching guidance

document for dealing with land contamination.

Table 8.1 states that land and groundwater contamination during construction, operation and decommissioning stages will be scoped out of further assessment. It goes on to state that, *“There are no recorded current or historical landfill sites within the Site, the closest being at the High Marnham Power Station where waste was accepted between 1978 to 1994.”* Our records show that there are two historic landfills associated with High Marnham Power Station present within the site boundary. These should be given some consideration.

It is possible that we will recommend the inclusion of a Requirement in relation to the management of unsuspected contamination when the DCO application is submitted. The foundation solutions for all elements of the scheme will be confirmed at the DCO application stage. We would expect that a foundation works risk assessment is completed for the development in areas where contamination may be present, for example in the area of the historic landfills. This could be included in the CEMP along with pollution prevention measures to ensure the groundwater beneath the site is not impacted by on-site activities.

The applicant proposes to scope out the impacts of silt laden run off and chemical spillages from construction activities. However, the applicant does not appear to have considered the sensitivity of possible receptors within the local water environment.

Within the report, there is no mention of the relevant River Basin Management Plans (RBMPs), the WFD waterbody catchments could be impacted or the objectives and sensitivities of these plans and catchments. Additionally, the applicant does not identify the large number of abstraction licences and discharge permits located within the site boundary and downstream. There is a risk that the CEMP does not adequately protect these features from negative impacts.

The applicant should complete a more thorough assessment of baseline conditions before assessing whether a detailed assessment of the impacts on the water environment is required.

Waste on site

Excavated materials that are recovered via a treatment operation can be re-used on-site under the CL:AIRE Definition of Waste: Development Industry Code of Practice. This voluntary Code of Practice provides a framework for determining whether or not excavated material arising from site during remediation and/or land development works are waste.

The applicant should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

The Environment Agency recommends that developers should refer to our:

- Position statement on the Definition of Waste: Development Industry Code of Practice and;

- website at <https://www.gov.uk/government/organisations/environment-agency> for further guidance

Waste to be taken off site

Contaminated soil that is, or must be disposed of, is waste. Therefore, its handling, transport, treatment and disposal is subject to waste management legislation, which includes:

- Duty of Care Regulations 1991
- Hazardous Waste (England and Wales) Regulations 2005
- Environmental Permitting (England and Wales) Regulations 2010
- The Waste (England and Wales) Regulations 2011

The applicant should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standards BS EN 14899:2005 'Characterisation of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays. If the total quantity of waste material to be produced at or taken off site is hazardous waste and is 500kg or greater in any 12 month period the developer will need to register with us as a hazardous waste producer. Refer to our website at www.gov.uk/government/organisations/environment-agency for more information.

Foul Drainage

The applicant confirms that the impact of foul water on Anglian Water's and Severn Trent's foul network will be scoped out as construction facilities will likely be served by welfare facilities unconnected to the main sewer networks. Foul water will still be generated at the site and therefore it still has the potential to have environmental impacts.

Without connecting to foul sewer, sewage will either need to be treated and discharged at the site, or it will need to be removed for offsite treatment and disposal. In the former scenario the discharge may cause environmental impacts and will require an environmental permit, one of the limiting factors for issuing a permit includes proximity to foul sewer. Sewage removed for offsite disposal will still have an impact on flows at the receiving treatment centre. The applicant should have regard for the fate of sewage even if it is not discharged to main sewer.

Water Resources

Section 2.24 identifies existing infrastructure within proximity of the boundary of the site. Abstraction of water from groundwater and from surface water for public water supply has not been identified but exists at the north of the site boundary. The upstream catchment for the public water supply is a drinking water protected area as the abstraction may be vulnerable to changes in water quality. Consideration for water quality impacts to surface water and groundwater bodies within the drinking water protected area should be considered as part of a wider WFD assessment.

Whilst the requirement for dewatering is not explicitly identified in the Development proposal or Construction sections of the report, the construction of transformers/inverter stations, Battery energy storage system facilities and substations are identified in section 3. Section 3.27 also describes trench cutting for underground high voltage cabling.

Dewatering is the removal/abstraction of water (predominantly, but not confined to, groundwater) to locally lower water levels near the excavation. This activity was previously exempt from requiring an abstraction license. Since 01 January 2018, most cases of new planned dewatering operations above 20 cubic meters a day will require a water abstraction license from us, prior to the commencement of dewatering activities at the site.

If dewatering is required, it will require an abstraction licence if it doesn't meet the criteria for exemption in [*The Water Abstraction and Impounding \(Exemptions\) Regulations 2017 Section 5: Small scale dewatering in the course of building or engineering works*](#). It may also require a discharge permit if it falls outside of our [*regulatory position statement for de-watering discharges*](#).

Consumptive abstraction from Groundwater may not be available, more details can be found in the [*Abstraction Licensing Strategy*](#) for the catchment. If the dewatering activity can be demonstrated to be discharged to the same source of supply without intervening use (i.e. non-consumptive), this will increase the likelihood of a licence being granted. Examples of (consumptive) intervening uses include: dust suppression; mineral washing; washing down machinery.

Potential impacts of the development on existing abstraction licenses (including non-water company) have not been addressed in the report. If dewatering is to take place and if there are pathways identified for impacts to water quality as identified in 8.1 surface water drains, then there is the risk of derogation of those sources of abstraction. We recommend that an assessment of impacts to surface water features and licensed abstractions should be scoped in also.

Flood Risk

Overall, regarding flood risk, we agree with the decision to scope the following into the EIA:

- Flood risk effects on users of the site during operational phases
- Flood risk effects on areas off site
- Effects of changes in quality and quantity of surface water runoff from the site to the surrounding watercourses as a result of the proposals.

However, we do not feel these encompass all the potential flood risks associated with the proposed development which we would expect to be scoped into the assessment. We have outlined below points to factor into the future EIA:

- We would like to clarify that any assessment of flood risk should account for future flood risk, using the 39% climate change allowance referred to within the scoping report.

- Residual flood risk – it is important that residual flood risk, from flood defences being overtopped or breached, is also scoped into the assessment.
- Potential impact on river channel or flood defence assets – it is acknowledged within the scoping report that there are a number of flood defences within the site, including embankments between Fledborough and Dunham-on-Trent and at South Clifton and North Clifton. It is also recognised that there will need to be a cable crossing over the River Trent. Therefore, unless all structures / ground works are to take place further than 8m from any flood defence asset, including the River Trent, we would recommend the impact on flood defence assets / the river be scoped into the assessment. In accordance with paragraph 5.8.17 of NPS EN-1, development (including construction works) should account for any existing watercourses and flood management structures or features, or any land likely to be needed for future structures, or features to ensure development does not restrict essential maintenance and emergency access to the river channels. The permanent retention of a continuous unobstructed area is an essential requirement for future maintenance and/or improvement works. Works in close proximity to the main river channel may adversely affect the stability of the riverbank and compromise its function, potentially resulting in adverse flood risk.
- Although the scoping report proposes to assess the flood risk effects on site users during operational phases, we recommend this also include the flood risk effects on the operation of the solar panels and energy infrastructure itself. It is important to ensure that the site can remain operational, but also that risks such as debris build up on solar panel frames during a flood event, is factored into the assessment and the maintenance of structures are also assessed.

We feel that the proposal to scope out ‘construction and decommissioning’ from the assessment is too broad and there are elements within these phases that should be included within the assessment. The flood risks associated with the construction phase are important to scope into the assessment given how flood risks may differ to those likely to be associated with the operational phase, particularly with the phasing of construction works and any temporary works or storage of materials required to facilitate the development. However, we believe that there is unlikely to be any additional flood risks needing to be assessed for the decommissioning stage, so we would be willing to accept that decommissioning be scoped out of the assessment.

Flood Zone 3b is not referred to in the scoping report but would be important to consider within the EIA. The local authority’s SFRA will define the extent of Flood Zone 3b.

The Sequential Test

Avoiding flood risk through the sequential test is the most effective way of addressing flood risk because it places the least reliance on measures such as flood defences. In line with paragraph 161 of the NPPF, *‘all plans should apply a sequential, risk-based approach to the location of development – taking into account*

all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property’. Paragraph 162 of the NPPF states that development ‘should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The sequential approach should be used in areas known to be at risk now or in the future from flooding’.

The application of the sequential test is not mentioned as part of the Scoping Report. Although it's not necessary to include as part of the scoping stage of the application, we wanted to use this opportunity to emphasize its importance and ensure it is sufficiently applied and evidenced within the flood risk chapter of the EIA.

Flood Modelling

The applicant should be aware that EA models are not designed to assess third party developments, so do not assume that they are suitable for assessing the flood risk associated with the proposal. It is always the applicant's responsibility to assess the suitability of an existing model on their project. Although Environment Agency flood modelling is often seen as the 'best available' flood modelling, these are created for our own purposes and usually at a catchment-scale. Although they are made available for third parties to use, it is up to the applicant to review the modelling and determine whether it appropriately represents flood risk on a site-specific basis or whether any updates or modifications need to be made to improve its usefulness in informing the assessment of flood risk. The applicant should also provide evidence of any modelling checks and subsequent updates carried out and document these in the FRA model reporting.

Flood Risk Activity Permits

Please note that the Environmental Permitting (England and Wales) Regulations 2016 require a flood risk activity permit (FRAP) or exemption to be obtained for any activities which will take place:

- On or within 8m of a main river (16 metres if tidal)
- On or within 8m of a flood defence structure or culverted main river (16m if tidal)
- On or within 16m of a sea defence
- Involving quarrying or excavation within 16m of any main river, flood defence (including a remote defence) or culvert
- In the floodplain of a main river if the activity could affect flood flow or storage and potential impacts are not controlled by a planning permission.

If any of the works are likely to require a FRAP under the Environmental Permitting Regulations, we recommend the applicant consider early on whether they might consider the disapplication of the Environmental Permitting Regulations (EPR) and matters pertaining to FRAPs be considered as Protective Provisions under the DCO.

Additional Information

In accordance with paragraph 161 of the NPPF, all plans should make use of opportunities provided by the new development and improvements in green and

other infrastructure to reduce the causes and impacts of flooding, making use of natural flood management techniques as part of an integrated approach to flood risk management.

Essential infrastructure within Flood Zone 3 is also required to pass the Exception Test, part of which requires new development to remain safe for its lifetime, without increasing flood risk elsewhere, and, where possible, reduces flood risk overall.

Given that a large section of the site benefits from the presence of flood defences, given there are some flood defence assets present within the red line boundary. We recommend the applicant consider whether the scheme could provide flood risk betterment, through maintaining or upgrading existing flood defence infrastructure in and around the site, which would also likely reduce the risk of flooding on the site itself.

We support the inclusion of the list of ecological features, in particular riparian mammals. We note that fish have not been identified as an ecological feature. Any works in or near a watercourse including bridges, culverts, cabling may impact on fish species present in both the River Trent and other waterbodies within the site. Fish will need to be considered. We look forward to reviewing the ecological assessment taking into account our comments above.

Further Advice

Air Quality

Where development involves the use of any non-road going mobile machinery with a net rated power of 37kW and up to 560kW, that is used during site preparation, construction, demolition, and/ or operation, at that site, we strongly recommend that the machinery used shall meet or exceed the latest emissions standards set out in [Regulation \(EU\) 2016/1628](#) (as amended). This shall apply to the point that the machinery arrives on site, regardless of it being hired or purchased, unless agreed in writing with the Local Planning Authority.

This is particularly important for major residential, commercial, or industrial development located in or within 2km of an Air Quality Management Area for oxides of Nitrogen (NOx), and or particulate matter that has an aerodynamic diameter of 10 or 2.5 microns (PM10 and PM2.5). Use of low emission technology will improve or maintain air quality and support LPAs and developers in improving and maintaining local air quality standards and support their net zero objectives.

We also advise, the item(s) of machinery must also be registered (where a register is available) for inspection by the appropriate Competent Authority (CA), which is usually the local authority.

The requirement to include this may already be required by a policy in the local plan or strategic spatial strategy document. The Environment Agency can also require this same standard to be applied to sites which it regulates. To avoid dual regulation this informative should only be applied to the site preparation, construction, and

demolition phases at sites that may require an environmental permit.

Non-Road Mobile Machinery includes items of plant such as bucket loaders, forklift trucks, excavators, 360 grab, mobile cranes, machine lifts, generators, static pumps, piling rigs etc. The Applicant should be able to state or confirm the use of such machinery in their application to which this then can be applied.

Climate Change

Whatever final design or location is chosen the likely life span of the site will mean that it will need to operate within a changing climate. Therefore, a robust design and sensitive final location selection to accommodate future climate change impacts should be pursued. This will need to consider issues such as flood risk, increased heat, and drought, all of which could impact on the efficient running of the site. Climate change impact risk assessment and adaptation measures should include the potential impact of a changing climate for the expected duration of site operations.

Noise and Vibration

Vibration from the installation of structures may adversely affect flood defences from vibration. By way of example, Section 4.2 discusses the installation of pylons and other above ground structures. Given there is no indication of where such structures will be installed in relation to main rivers or flood defences, we would like to see vibration monitoring scoped into the assessment to ensure that the associated vibrations will not adversely affect any flood defence structures. Vibration should be limited to a safe threshold using appropriate guidance. For example, the type of pylon foundation chosen (e.g., pad and column, mini pile or tube pile) and associated methodology should be assessed. Depending on proximity an assessment may also be required for vibration from HGV traffic/plant.

Environment Agency Land

There are some areas of land, specifically around main rivers, which are land owned by the Environment Agency. Due to the large scoping area, it is unclear at this stage whether this land will be affected by the proposals, but we would welcome ongoing discussions with the applicant about this.

Yours faithfully,

Mr Joshua Milsom
Planning Specialist

Direct e-mail josh.milsom@environment-agency.gov.uk

From: [Jarvis, Neil](#)
To: [One Earth Solar](#)
Subject: Response regarding One Earth Solar Farm Ltd, reference EN010159
Date: 14 November 2023 14:56:00
Attachments: [Govn. Protect of AW"s - buffer zones.docx](#)

Dear Mr. Briody,

Thank you for consulting the Forestry Commission on this proposal. As the Government's forestry experts, we endeavour to provide as much relevant information to enable the project to reduce any impact on irreplaceable habitat such as Ancient \semi natural Woodland as well as other woodland. We are particularly concerned about any impact on Ancient Semi natural Woodland and will expect to see careful consideration of any impact and any weightings which might be applied to any assessments of route options/or site choice.

The UK Forestry Standard (UKFS) sets out the UK government's approach to sustainable forestry and woodland management, including standards and requirements as a basis for regulation, monitoring and reporting requirements. The UKFS has a general presumption against deforestation. Page 23 of the Standard states that: "Areas of woodland are material considerations in the planning process..." In addition, lowland mixed deciduous woodland is on the Priority Habitat Inventory (England). This recognises that under the UK Biodiversity Action Plan they were recognised as being the most threatened and requiring conservation action. The UK Biodiversity Action Plan has now been superseded by the UK Post-2010 Biodiversity Framework but this priority status remains.

It is expected that there will be a thorough assessment of any loss of all trees and woodlands within the project boundary and the development of mitigation measures to minimise any risk of net deforestation because of the scheme. A scheme that bisects any woodland will not only result in significant loss of woodland cover but will also reduce ecological value and natural heritage impacts due to habitat fragmentation, and a huge negative impact on the ability of the biodiversity (flora and fauna) to respond to the impacts of climate change. Woodland provides habitat for a range of Section 41 Priority Species including all bats. Included within that assessment should be an assessment of any woodlands under an existing woodland grant scheme and / or a felling licence agreement to ensure these agreements will not be negatively impacted and *public money wasted*.

Where woodland loss is unavoidable, it is expected that there will be significant compensation and the use of buffer zones to enhance the resilience of neighbouring woodlands. These zones could include further tree planting or a mosaic of semi-natural habitats. The Government guidance on the design of buffer zones is attached. Please note that **Clifton Plantation**, **Road Wood** and **West Wood** as shown in the Scoping Report, Appendix A map, are examples of woodlands where it is proposed solar panels would be immediately adjacent to their perimeters and so will require buffer zones. In addition there are two woodlands to the west of Road Wood, that were planted via a woodland grant scheme, where it is proposed to surround them with solar panels (they are at grid references SK 8473 7344, and SK 8459 7304.) These grant scheme woodlands will need buffer zones and access tracks to enable future management of the woodlands. Effective and practicable proposals for managing the boundary of the woodland and any likely increased access, proportionate to the degree of likely future access, planned or unplanned will need to be planned carefully and hedgerows and

individual trees within a development site considered in terms of their overall connectivity between woodlands affected by the development.

For any woodland within the development boundary, land required for temporary use or land where rights are required for the diversion of utilities you must take into consideration the Root Protection Zone. The Root Protection Zone (as specified in British Standard 5837) is there to protect the roots of trees, which often spread out further than the tree canopy. Protection measures include taking care not to cut tree roots (e.g., by trenching) or causing soil compaction around trees (e.g., through vehicle movements or stacking heavy equipment) or contamination from poisons (e.g., site stored fuel or chemicals).

The mitigation hierarchy set out in [Paragraph 180 NPPF](#) July 2021. sets out a useful structure for considerations of mitigation and compensation. Whilst the NPPF does not apply to NSIPs this ethos remains the same.

With the Government aspirations to plant 30,000 ha per year across the UK by 2025. The Forestry Commission is seeking to ensure that tree planting is a consideration in every development not just as compensation for loss. However, as already mentioned there are a number of issues that need to be considered when proposing significant planting schemes :

- Biosecurity of all planting stock needs to be considered.
- Woodlands need to be climate and pest and disease resilient.
- Maximise the ecosystem services benefits of all new woodland wherever possible (flood reduction)
- Planting contributes to a 'resilient treescape' by maximising connectivity across the landscape.
- Plans are in place to ensure long term management and maintenance of woodland.

Yours sincerely,

N. C. Jarvis.

Neil Jarvis
Local Partnership Advisor
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IP27 0TJ

Mobile [REDACTED]

Please note that my working days are Monday, Tuesday and Wednesday.

As found on GOV.UK

<https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences>

Use of buffer zones

A buffer zone's purpose is to protect ancient woodland and individual ancient or veteran trees. The size and type of buffer zone should vary depending on the scale, type and impact of the development.

For ancient woodlands, you should have a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, you're likely to need a larger buffer zone. For example, the effect of air pollution from development that results in a significant increase in traffic.

A buffer zone around an ancient or veteran tree should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter.

Where possible, a buffer zone should:

- contribute to wider ecological networks
- be part of the green infrastructure of the area

It should consist of semi-natural habitats such as:

- woodland
- a mix of scrub, grassland, heathland and wetland planting

You should plant buffer zones with local and appropriate native species.

You should consider if access is appropriate and can allow access to buffer zones if the habitat is not harmed by trampling.

You should avoid including gardens in buffer zones.

You should avoid sustainable drainage schemes unless:

- they respect root protection areas
- any change to the water table does not adversely affect ancient woodland or ancient and veteran trees



Historic England

Mr Joseph Briody
The Planning Inspectorate
oneearth solar@planninginspectorate.gov.uk
By Email

Our ref: PL00794127

Your ref: EN010159

Telephone: [REDACTED]

07 December 2023

Dear Sir,

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11

Application by One Earth Solar Farm Ltd (the Applicant) for an Order granting Development Consent for the One Earth Solar Farm (the Proposed Development)

Scoping Report Consultation

Thank you for contacting us on 13 November 2023 regarding a Scoping Opinion in relation to the above Proposed Development. We note that the Proposed Development includes the construction and installation of solar photovoltaic panels, Battery Energy Storage Systems (BESS) and associated grid connection infrastructure which would allow for the generation of an anticipated 740 megawatts (MW) of electricity across approximately 1,500 hectares (ha) of arable agricultural land, located to the east and west of the River Trent in Lincolnshire and Nottinghamshire.

Historic England Advice

Historic England has the following specific comments to make regarding the proposed content of the EIA as set out in the Scoping Report:

Archaeological Issues and Monuments

Preservation in situ, and Hydrology and Hydrogeology

In paragraph 9.22 it is mentioned that preservation in situ may be required for significant remains. Historic England's guidance (2016) on preserving archaeological remains will be useful to consider and will help guide the decision-making process:

Historic England, 2016, Preserving Archaeological Remains: Decision-taking for Sites under Development. London:

<https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/>



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Please note that Historic England operates an access to information policy.

Correspondence or information which you send us may therefore become publicly available.





Where important archaeology is known or suspected to exist, and it is planned to preserve it in situ (paragraph 9.22) there is a need to consider more than construction related impacts. Any changes to the burial environment that the development introduces could lead to the degradation of materials and the loss of information beyond the development boundary (particularly if there are any remains dependent on a stable water environment). To ensure that such impacts (if present) are properly accounted for we would recommend ensuring that opportunities are taken to seek synergies with other topic areas, such as hydrology and hydrogeology. Integrating models from this with an understanding of any potential water dependent heritage assets identified in desk-based work will enable effective early identification of, and engagement with, any sites or areas that may need greater consideration of preservation approaches.

Fieldwalking

Historic England welcomes the recognition given to the earlier prehistoric material (Mesolithic and Neolithic) in paragraphs 9.7 and 9.8. Much of this activity was discovered through fieldwalking and, as the project moves forwards, it should be borne in mind that standard archaeological methodologies (such as trial trenching currently proposed in paragraph 9.21) may not be sufficient to ensure the effective identification and characterisation of any similar lithic scatters elsewhere within the landscape.

Deposit Modelling

Further Baseline Data (9.19) should also include existing borehole data, and the applicants should seek to construct desk-based deposit model as part of the DBA. This is in line with Historic England's guidance on geoarchaeology (2015) and deposit modelling (2020):

Historic England, 2015, *Geoarchaeology: Using earth sciences to understand the archaeological record*, London:

<https://historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record/>

Historic England 2020, *Deposit Modelling and Archaeology: Guidance for Mapping Buried Deposits*, London:

<https://historicengland.org.uk/images-books/publications/deposit-modelling-and-archaeology/>

A deposit modelling led approach will help delimit the presence / absence and nature of Pleistocene and Holocene deposits within different areas the site. Through this process, it may be possible to divide the site into landscape zones according to variations in the depositional sequence which will help in identifying areas of risk for unknown archaeology and where different types of activity may be expected.

Palaeolithic



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Presently the Scoping Report only covers the Holocene, and the potential for earlier material isn't included. Historic England's guidance on the Palaeolithic states that all DBAs should address the potential for Palaeolithic archaeological remains:

Historic England, 2023, *Curating the Palaeolithic*, London:

<https://historicengland.org.uk/images-books/publications/curating-the-palaeolithic/>

Although Palaeolithic activity isn't currently known within the study area, the potential for there to be some presence shouldn't be completely ignored. Creating a preliminary deposit model will help develop an understanding and model risk in this regard and will be particularly relevant for areas of deeper disturbance such as cable routes etc.

Roman forts

The presence of scheduled Roman military sites (a vexillation fortress and two marching camps) in the immediate vicinity of the scheme indicates the high archaeological potential of the area around the proposal, and there is high potential to harm buried archaeological remains associated with the Scheduled Monument. It should be noted that the area of the Scheduled Monument represents only what was visible from aerial photos at the point in time that the scheduling decision was made, and not the actual extent of the camps or the surviving archaeology.

The southern area of protection at Newton on Trent (*Roman Vexillation Fortress, two Roman Marching Camps, and a Royal Observer Corps monitoring post*), appears to comprise the northern part of second camp. This potential for nationally significant remains at the site has previously been demonstrated during a 2011-12 program of evaluation for Anglian Water's Hall Reservoir (Gilmour 2012), which discovered a Roman oven containing the remains of Roman bread. This is an exceptionally rare discovery:

Gilmour, N. 2012. *Lincoln Water Treatment Works, Newton on Trent, Lincolnshire*. OAE Report 1259, Oxford: Oxford Archaeology:

<https://eprints.oxfordarchaeology.com/1998/>

It will also be very important to develop an understanding of movement along and across this part of the Trent from the Roman through the Early Medieval periods (including Viking).

Medieval monuments

Particular consideration should be given to the landscape setting and context of the scheduled monuments at *Whimpton Moor medieval village and moated site* and the *Ringwork at Kingshaugh Farm*, in the latter instance a close understanding of how/if the ringwork articulated to the topography, roads and river will be important.

Built Heritage and Landscape





The Scoping Report identifies a number of designated heritage assets that are considered to have the potential to be affected by the proposed development. The impact will be more harmful in some areas than in others, especially as the boundary comes right up to assets or into their setting and views.

Due to the extent of the proposed works and the overtly rural character of the area, impacts are likely upon the significance of listed buildings, designated assets and non-designated heritage assets through change to their rural historic landscape setting, and which contributes to their significance. A spreadsheet of Listed Buildings, one Conservation Area and a number of settlements that have the potential to be impacted by the development is attached without prejudice to such other heritage matters as may emerge through the EIA process. It includes an early assessment of the potential impact of the proposed development on the significance of the relevant heritage asset.

The former parkland shown on the OS 1" 1st edition mapping to the west of Ragnall Hall should be considered in the context of its setting as should the planning shown to either side of the road extending north. Rather than scope out the scheduled Cross at St Peter and St Paul's Churchyard, Kettlethorpe we suggest it is rolled in with the assessment of the closely associated Church.

Whilst some areas will be less impacted by the proposals, other areas will be affected by industrial features such as battery storage units, infrastructure of highways and other services, and types of fencing. There is existing landscaping which will mitigate impact, although hedges and trees may be cut down or lost due to weather or diseases, and therefore cannot be relied upon to remain to reduce impact.

A good understanding of topography as part of a heritage assessment would be very useful to ascertain degrees of impact on heritage assets. It is noted that options for locations, design, and mitigation methods such as soft landscaping are proposed, but also an assessment of the impact on heritage assets from noise and vibrations, and infrastructure should be provided as a means of explaining and justifying any proposed scheme.

We advise that there should be consideration of interconnecting views from within settlements and along settlement boundaries. We are pleased to see that additional fieldwork is proposed to be undertaken and at different seasons, to understand how this affects views, and we also welcome the proposal to carry out a Landscape Visual Impact Assessment (please see below for further comments).

With regard to likely significant effects scoped out of the detailed assessment, we would advise that with regard to Low Marnham, whilst there is existing power infrastructure evident, further infrastructure could increase the impact on the setting and significance of the heritage assets and therefore we consider that these should be included within the scope of the EIA. Please also refer to our attached spreadsheet for other settlements with heritage assets, which we consider should be scoped into the EIA.





Historic England recommends that any assessment should take account of our Historic Environment Good Practice Advice in Planning Notes which provide supporting information on good practice including:

Historic Environment Good Practice Advice in Planning: 2 - Managing Significance in Decision-Taking in the Historic Environment:

<https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking>

Historic Environment Good Practice Advice in Planning: 3 (2nd edition) - The Setting of Heritage Assets:

<https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/>

Landscape and Visual

Historic England recommends that the EIA should ensure that designated heritage assets are considered as individual receptors under either the Landscape and Visual or more appropriately in Cultural Heritage chapters, and that the list of selected viewpoints takes this into account in addition to the assessment of effects on general landscape character.

Setting impacts upon the significance of Grade II Listed Buildings outside of the 1km study area should not be all scoped out of the detailed assessment. A more flexible approach grounded in professional judgement should identify those assets where design, topography or associate renders them particular sensitive at distance. It is important in the assessment of setting impacts upon designated heritage assets kinetic and sequential views (as one moves through the landscape) are consider alongside those from fixed points, likewise views from private ground and the key rooms or accessible roof areas of should be considered alongside those from ore publicly accessible areas where those views contribute to significance.

Recommendation

Historic England advises that the issues set out above are addressed with the applicant to ensure that the EIA will provide a sound basis on which to assess the significance of any heritage assets affected and the impacts on heritage significance as a result of the proposed scheme.

Yours faithfully,

Elizabeth Boden

Elizabeth Boden
Historic Environment Planning Adviser
E-mail: elizabeth.boden@historicengland.org.uk



Area	Asset	Grade	Potential Impacts (without prejudice to EIA process)
Ragnall	Whimpton House	II	Impact on the significance of building in rural setting. See also Scheduled Monument.
	Ragnall House	II	Impact on the significance of building in rural setting. Consider former parkland and planting.
	Barn at Ragnall Stables	II	
With all these, there will be great overall impact to the rural character and appearance of these villages and buildings with great landscape change which will impact on their rural setting and therefore their significance	Church of St Leonard	II*	Impact on the significance of building in rural setting
	Church gateway	II	Include with Church
	Ragnall Hall and outbuildings	II	Impact on the significance of building in rural setting
Darlton	Chest tombs	II	Include with Church
	Lychgate and walls of church	II	Include with Church
	St Giles Church	II*	Impact on the significance of building in rural setting. See also Scheduled Monument to West.
	Pigeoncote, stables, outbuildings to Hall Farm	II	Impact on the significance of building in rural setting
	Manor farm barn	II*	Impact on the significance of building in rural setting
Skegby	Manor Farmhouse	II	Impact on the significance of building in rural setting
	Skegby Manor	II	Impact on the significance of building in rural setting
Normanton on Trent	Skegby Manor Pigeoncote	II	Impact on the significance of building in rural setting
	Church of St Matthew	II*	Impact on the significance of building in rural setting
Low Marnham	Crew Yard and barn - Grange Farm	II	Impact on the significance of building in rural setting
	Grange Farmhouse	II	Impact on the significance of building in rural setting
	Village Hall	II	
	St Wilfred Church	I	Impact on the significance of building in rural setting
High Marnham	Marnham Hall	II	Impact on the significance of building in rural setting
Fledborough	Manor House	II	Impact on the significance of building in rural setting
	St Gregory's Church	I	Impact on the significance of building in rural setting
	Headstones	II	Impact on the significance of building in rural setting
	Marples' Cottages	II	Impact on the significance of building in rural setting
	Church of St Oswald	I	Impact on the significance of building in rural setting
	Gateway to Church	II	Impact on the significance of building in rural setting
	Headstones	II	Impact on the significance of building in rural setting
	Church Gateway	II	Impact on the significance of building in rural setting
	Bridge Inn	II	Impact on the significance of building in rural setting
	Dunam House	II	Impact on the significance of building in rural setting
West End Farm and Stables		II	Impact on the significance of building in rural setting
			Impact on the significance of building in rural setting. See also Scheduled Monument.
Newton on Trent	Hall Farmhouse	II	Impact on the significance of building in rural setting. See also Scheduled Monument.
North Clifton	Old Hall Farmhouse	II	Impact on the significance of building in rural setting. See also Scheduled Monument.
	Trent Lane Farmhouse	II	Impact on the significance of building in rural setting
	Hall Farmhouse	II	Impact on the significance of building in rural setting
	Church of St George	II*	Impact on the significance of building in rural setting
South Clifton	Lychgate and railings to church	II	Impact on the significance of building in rural setting
	Conservation Area		impact on character. The setting is overtly rural, landscaping is soft and open with long distance views from within the settlement.
	Manor House	II	Impact on the significance of building in rural setting
	Vine House	II	Impact on the significance of building in rural setting
	Stables at the Hall	II	Impact on the significance of building in rural setting
	The Hall and extension	II	Impact on the significance of building in rural setting
	The Old Farmhouse	II	Impact on the significance of building in rural setting
	Pigeoncote, Old Farmhouse	II	Impact on the significance of building in rural setting
	Bonington	II	Impact on the significance of building in rural setting
	Old Schoolhouse	II	Impact on the significance of building in rural setting
Thorney	St Helens Church	II*	Impact on the significance of building in rural setting
	Thorney War Memorial	II	Impact on the significance of building in rural setting
	Ruins of old church	II	Impact on the significance of building in rural setting
	House, Thorney Hall	II	Impact on the significance of building in rural setting
	Cottage, Thorney Hall	II	Impact on the significance of building in rural setting
	Old Manor House	II	Impact on the significance of building in rural setting
	Firs Farmhouse	II	Impact on the significance of building in rural setting
Tuxford	several listed buildings and conservation area		Potential for visual impact - topography will need to be better utilised to assess impact
Weston	several listed buildings		Potential for visual impact - topography will need to be better utilised to assess impact
Grassthorpe	several listed buildings		Potential for visual impact - topography will need to be better utilised to assess impact
North Scarle	several listed buildings		Potential for visual impact - topography will need to be better utilised to assess impact
Harby	several listed buildings		Potential for visual impact - topography will need to be better utilised to assess impact
Kettlethorpe	several listed buildings		Potential for visual impact - topography will need to be better utilised to assess impact. See also Scheduled Monument.
East Markham	several listed buildings		Potential for visual impact - topography will need to be better utilised to assess impact
Fenton	several listed buildings		Potential for visual impact - topography will need to be better utilised to assess impact
Laneham	several listed buildings		Potential for visual impact and impact on rural setting - assess topography
East Drayton	several listed buildings and conservation area		Potential for visual impact - topography will need to be better utilised to assess impact
	St Peter's Church	I	Impact on the significance of building in rural setting. Potential for visual impact at high level from the tower
Misc listed buildings			Potential for visual impact and impact on rural setting - assess topography
	Kingshaugh House	II	Potential for visual impact and impact on rural setting - assess topography
	Merryfields Farm	II	Potential for visual impact and impact on rural setting - assess topography
	The Windmill	II	Potential for visual impact and impact on rural setting - assess topography
	Scarthingmoor Mill Farmhouse	II	Potential for visual impact - topography will need to be better utilised to assess impact
Scarthingmoor House			Potential for visual impact - topography will need to be better utilised to assess impact

The Planning Inspectorate
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Justine Proudler
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Sent by E-Mail to:
oneearthsolar@planninginspectorate.gov.uk

Ref: EN010159

Date: 11 December 2023

Dear Sir/Madam

Proposal: Scoping Consultation under The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11

Application by One Earth Solar farm Ltd (the Applicant) for an Order granting Development Consent for the One Earth Solar Farm project (the Development)

Location: One Earth Solar Farm

Thank you for your letter dated 13 November 2023 consulting Lincolnshire County Council (LCC) on the Environmental Impact Assessment Scoping Report produced by One Earth Solar Farm Ltd dated November 2023.

The Council have reviewed the information and have the following comments to make.

Planning Policy Context

Chapter 4 of the Scoping Report sets out relevant national and local planning policies that are proposed to be reviewed within the Environmental Statement (ES). However, no reference is made to the Lincolnshire Minerals and Waste Local Plan 2016 (LMWLP), which is part of the Development Plan for the area and should therefore be considered as part of the assessment.

Minerals Safeguarding

Areas of site are located within a Minerals Safeguarding Area (MSA) for sand and gravel, as shown on Figure 1: Lincolnshire Minerals Safeguarding Areas map of the LMWLP. The site also contains a safeguarded oil site (Newton on Trent Oil Well). A Minerals Assessment should therefore be undertaken assessing the impact of the development on the safeguarded mineral resource and site, in accordance with policies M11: Safeguarding of Mineral Resources and M12: Safeguarding of Existing Mineral Sites and Associated Minerals Infrastructure of the LMWLP. The proposals will need to ensure that the safety and operation of the safeguarded site is not prejudiced.

Approach to EIA

The Council wishes to raise concern about the time period over which the impacts of the development are proposed to be assessed. The assumption that the development would be operational for 45 years made in Chapter 5 paragraph 5.22, for the purpose of the assessment of the impact of decommissioning, is noted. However, the Applicant is not seeking a time limited consent and paragraph 5.22 goes on to state that the operational phase of the development may continue beyond this point and therefore it follows that decommissioning would be at more than 45 years.

For the ES to be an open and robust assessment of the likely significant effects it should provide an assessment over the anticipated life of the development, as far as reasonably possible, so that the full impact of the development can be understood. In general it is not clear over what time period the impacts are proposed to be assessed for the operational phase. However, it is noted at paragraph 5.29 that a distinction would be made between short, medium and long term, permanent and temporary effects. Consideration should be given to any likely significant effects that may occur as a result of not decommissioning the site at the 45 year point. Would a longer operational phase (timeframe unknown) and later decommissioning period or the site becoming a permanent feature change any of the assessed effects or introduce any other or different effects not considered?

The Scoping Report contains conflicting statements in respect of time periods, for example:

Chapter 8: Land and Soils at paragraph 8.14 states *“It should be noted that no land will be permanently lost from agriculture as the scheme is temporary, albeit is assumed that decommissioning will be at least 45 years in the future.”*

However, chapter 6: Biodiversity at paragraph 6.36 refers to likely significant effects that are scoped into the assessment as including ‘permanent’ land take and ‘permanent’ infrastructure.

Therefore, it is considered that clarification and consistency regarding the duration of the development as part of the approach to EIA assessment is necessary. The Council would wish to see a clearly defined timescale over which the impacts of the development are being assessed, rather than it being open ended.

Cumulative Effects

The applicants approach to the assessment of cumulative effects set out in chapter 5 of the Scoping Report and the inclusion of a separate chapter on cumulative assessment in the PEIR and ES, in addition to the assessment of cumulative impacts in each technical topic chapter is welcomed. The cumulative assessment should cover both intra project and inter projects effects which in addition to setting out the approach and methodology clearly identifies other relevant projects and the potential for cumulative effects, any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources. It should also provide an assessment of the significance of the potential cumulative impacts identified, likely duration of the impacts (including phasing details) and mitigation measures.

The Council wishes to highlight the potential for significant cumulative effects with other Nationally Significant Infrastructure Projects (NSIP). The applicant should take into consideration the geographical scale of the NSIP projects in Lincolnshire and Nottinghamshire such as Cottam, West Burton, Gate Burton and Tillbridge solar schemes in combination and consequently the scale of the study area that will be necessary to identify the full extent of the developments and the potential significant cumulative impacts which could occur over a wide geographical area.

Paragraph 5.32 of the Scoping Report suggests a study area of 5 km from the proposed development. Given the number and scale of projects currently in consideration under the Development Consent order (DCO) process, this distance is unlikely to be sufficient to identify and assess the full extent of any cumulative impacts.

The applicants attention is drawn to the interrelationship report entitled 'Joint Report on Interrelationships between Nationally Significant' that has been jointly prepared by the developers of the solar schemes referred to above and can be viewed on the National Infrastructure Planning website under the relevant applications.

Hydrology and Hydrogeology

The Scoping Report, in respect of Surface Water and Flood Risk, is considered to be acceptable. The Lead Local Flood Authority will require a Flood Risk Assessment to demonstrate that the risk to the development, and from the development, is acceptable. A Drainage Strategy will also be required to demonstrate that the proposals to mitigate and attenuate and flood risk will need to be SUDs compliant as required for all major developments under the National Planning Policy Framework (NPPF). These documents are proposed to be produced as referenced in paragraph 7.30 of the Scoping Report.

Land and soils

The Council will expect the ES to include a detailed Agricultural Land Classification (ALC) assessment and notes that survey work to inform this assessment is anticipated to be completed in Q1 2024. The majority of site is indicated to be grade 3 (good to moderate agricultural land). The ES should clearly identify how much of the land is assessed to be grade 3a and above (Best and Most Versatile (BMV) land). The Council will wish to see solar arrays and other built infrastructure located in areas that are not classified as BMV land.

Chapter 8, Table 8.1 details topics scoped out of the Land and Soil assessment and states that there are no records of mineral extraction within the site. I refer to my comments above regarding MSA's and a safeguarded oil site within the red line boundary. The impact of the development on the MSA and site should be scoped in to the EIA and a Minerals assessment undertaken.

The Council are concerned about the use of the 20ha threshold in The Town and Country Planning (Development Management Procedure) (England) Order 2010 (as amended), as stated in paragraph 8.17 of the Scoping Report, as an appropriate threshold for the assessment of impacts. This is merely a threshold for Local Planning Authorities to consult Natural England before granting planning permission for a non-agricultural development that is not consistent with an adopted local plan, which would involve the loss of Grades 1, 2 or 3a agricultural land. The 2010 procedure order referred to has been replaced by the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended).

Buried Heritage

The Council has grave concerns regarding Chapter 9 - Buried Heritage section of the Scoping Report.

The standard full suite of archaeological evaluation techniques is required as we need an approach with sufficient evaluation in order to understand the archaeological potential and to inform a reasonable and appropriate mitigation strategy in the ES which will need to be submitted with the DCO application. The full suite of available desk-based information needs to be competently assessed including all available records, air photos, LiDAR assessments and local sources. This understanding and the geophysical survey results will inform a robust programme of trial trenching to provide evidence for the site-specific archaeological potential of the development and provide the basis for an effective mitigation strategy to deal with the archaeological impact.

The proposed lack of evaluation (geophysics and evaluation trenching) is of very significant concern to the Council. Failure to undertake sufficient evaluation now while there's time, pushing evaluation and subsequent agreement of the mitigation strategy to post consent is a high-risk strategy which can easily lead to significant construction delays and escalating costs as well as unnecessary destruction of heritage assets. It may also lead to consent for a scheme which is subsequently found to be undeliverable in terms of the information submitted with the application.

The full extent of the proposed impact area including the connector route corridors must be included in the evaluation process. Archaeological impacts and subsequent mitigation have the potential for significant impacts so sufficient evaluation is essential in informing the selection process and in ensuring the subsequent design and work programme is devised with an understanding of the level of archaeological work which may be required before and during the construction phase.

The Scoping Report recognises the extensive and diverse range for archaeological remains within the site boundary and acknowledges the high potential for the survival of as yet unknown archaeological remains (paragraph 9.11).

At paragraph 9.19 the Scoping Report proposes the production of an Archaeological Desk-Based Assessment (DBA) in support of the ES chapter and outlines the elements that will be contained within that document. We agree that a DBA is necessary and broadly support the outline proposal in this regard. It is vital that a competent full DBA be completed at the earliest opportunity in order to inform further phases of work.

However, at paragraph 9.20, the Scoping Report makes it clear that the ES Chapter will be based entirely on the DBA without the support of further non-intrusive or intrusive fieldwork. This is wholly insufficient to assess the archaeological potential of the site, nor will it be sufficient to inform an appropriate mitigation strategy.

It is critical that the applicant have the baseline evidence to be able to assess and understand the site-specific impact of the development on the archaeological resource. Non-intrusive survey (ie. geophysics and fieldwalking) must be tested with site-wide evaluation trenching as a minimum requirement to properly understand the archaeological potential within the developmental impact area.

The evaluation work must be completed in time to inform the mitigation strategy which will lay out how the developmental impact on archaeology will be dealt with, therefore this will need to be submitted as part of the EIA. We would expect the DBA to be complete and the field evaluation to be well underway by the time the PEIR is produced.

The Scoping Report anticipates undertaking a limited programme of field evaluation prior to construction (paragraph 9.21). Again, we strongly disagree that post-consent is the correct time to undertake investigative work that should be informing the application. Discovery of previously unknown significant archaeological remains may lead to the project be undeliverable in the terms that the applicant submits, and provision of this data in the ES chapter is vital in support of the application.

We would further raise the issue of only targeting areas identified in the DBA (paragraph 9.21) which is necessarily limited to known data. This approach is flawed and would lead to a limited understanding of the archaeological resource based on confirmation bias rather than a genuine programme of investigation.

Paragraphs 9.17 and 9.23 seek to scope out impacts from the operational phase. We do not accept that there will be no impact from maintenance of the site. Many older solar farms are undergoing significant redevelopment during their mid-life, including complete removal of panel infrastructure and highly intrusive groundworks. For areas where preservation *in-situ* is preferred, measures will need to be implemented in the OEMP to ensure there is no impact to the archaeological resource.

Paragraph 9.24, we do not agree with the applicant's belief that decommissioning will result in no impact to the archaeological resource. The removal of infrastructure can be more

damaging in many circumstances than the initial installation. Decommissioning impacts will need to be considered at the application stage and appropriate mitigation secured as part of the DCO requirements.

In conclusion, the EIA will require the full suite of comprehensive desk-based research, non-intrusive surveys, and intrusive field evaluation for the full extent of proposed impact. The results should be used to minimise the impact on the historic environment through informing the project design and an appropriate programme of archaeological mitigation. The provision of sufficient baseline information to identify and assess the impact on known and potential heritage assets is required by Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Regulation 5 (2d)), National Planning Statement Policy EN1 (Section 5.8), and the NPPF.

Sufficient information on the archaeological potential must include evidential information on the depth, extent and significance of the archaeological deposits which will be impacted by the development. The results will inform a fit for purpose mitigation strategy which will identify what measures are to be taken to minimise or adequately record the impact of the proposal on archaeological remains which must be submitted with the EIA.

This is in accordance with The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 which states "*The EIA must identify, describe and assess in an appropriate manner...the direct and indirect significant impacts of the proposed development on...material assets, cultural heritage and the landscape.*" (Regulation 5 (2d)).

Cultural Heritage

The assessment methodology proposed in the Cultural Heritage section of the Scoping Report appears reasonable. However, the Council does have concern about 'scoping out' all of the heritage assets in Newton on Trent from further assessment in the ES due to the applicant's view that the A57 provides a strong perceptive barrier. Whilst the proposed site is located to the south of Newton and the A57 is a busy road which intersects the village from the site, there is however a substantial group of heritage assets in the village core which have a group value. On balance, the Council is of opinion that this cluster of assets should be 'scoped in' to the EIA assessment.

Landscape and Visual

A review of landscape and visual issues and elements has been carried out by AAH Consultants on behalf of LCC, based upon a review of the relevant sections of the Scoping Report and masterplan, attached as Appendix A to the Scoping Report.

Overall, we would expect that the assessment of potential Landscape and Visual matters and evolving proposals relating to the One Earth Solar Project, as a NSIP, follow an iterative process of engagement and consultation to ensure the following are not fixed at this stage and are discussed, developed and agreed at subsequent technical meetings:

- Landscape and Visual Impact Assessment (LVIA) Methodology;
- Development, and subsequent ZTV, parameters;
- Study Area extents (distance);

- Landscape and Visual Receptors;
- Viewpoint quantity and locations;
- Photomontage/Accurate Visual Representations (AVRs):
 - Quantity and location;
 - Phase depiction;
 - AVR Type and Level.
- Mitigation Measures/Landscape Scheme/Site Layout;
- Cumulative effects, including surrounding developments to be considered; and
- The extent as to which a Residential Visual Amenity Assessment (RVAA) should be considered (based on the Landscape Institute TGN 2/19) if there are residential properties with receptors likely to experience significant effects to their visual amenity.

We would also expect the production of the Landscape and Visual chapter of the ES, which would be in the form of a Landscape and Visual Impact Assessment (LVIA), and any supporting information (such as plans or figures) reflect current best practice and guidance from, as a minimum, the following sources:

- *‘Guidelines for Landscape and Visual Impact Assessment’*, (GLVIA3), April 2013 by the Landscape Institute (LI) and Institute of Environmental Management and Assessment (IEMA);
- *‘An Approach to Landscape Character Assessment’*, Natural England (2014);
- *‘Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals’*, 17th September 2019 by the Landscape Institute (LI);
- *‘Technical Guidance Note (TGN) 1/20 Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs)’*, 10th January 2020 by the Landscape Institute (LI); and
- *‘Technical Guidance Note (TGN) 2/21 Assessing landscape value outside national designations’*, May 2021 by the Landscape Institute (LI).

At this initial stage of the NSIP process, the content and level of information provided by the developer within Chapter 11 (Landscape and Visual), and Appendix A, are generally considered satisfactory, however, as stated previously, we would expect to discuss this content and approach as part of the iterative process, and the following should be considered in the evolving assessment and layout.

Viewpoints

At this stage, no representative viewpoints have been selected, but within and beyond the initial 2km study area a number of villages and hamlets have been identified. These, along with identified Public Rights of Way and other key aspects within the study area, will form the basis for assessment and dialogue in regards viewpoint selection. The final locations would be agreed with LCC and other relevant stakeholders.

Photomontages

To gain an understanding of the visibility of the development and how the panels and infrastructure would appear in the surrounding landscape, Photomontages/Accurate Visual Representations (AVRs) should be produced. The number and location of the agreed

viewpoints to be developed as Photomontages/AVRs should be agreed with LCC and other relevant stakeholders and produced in accordance with *TGN 06/19 Visual Representation of Development Proposals*. At this stage, it is deemed appropriate that these should be produced to illustrate the proposals at different phases: Existing Situation (baseline), Operational (year 1) and Residual with planting established (typically 15 years). The Photomontage/AVR Level and Type is to be discussed and agreed.

Methodology

The Scoping Report confirms that the LVIA will be carried out in accordance with the GLVIA3 and undertaken by suitably qualified personnel. The methodology provided from paragraph 11.50 is typical of those used for ES Chapters and standalone LVIA's where potential significant effects can be considered and reflects the guidance in GLVIA3. We would request that the most up to date technical guidance also be used, such as the recently published LI *TGN 2/21 Assessing landscape value outside national designations*.

Figure 11-1 provides an overview of the methodology and this is followed by a stage review of the methodology within paragraph 11.54. This is a detailed and standard process and at this stage is an acceptable approach.

Scope of the Study Area:

In preparation of the Scoping Report a desk-based assessment has been combined with a site visit to determine the baseline. For the purpose of the Scoping Report, the study area is confirmed as 'preliminary' and will cover 2kms from the site boundary. It should be noted that experience with other solar developments of comparable scale shows that the potential of visual impact does spread beyond the 2km range. The approach behind the assessment being constrained to 2kms needs to be tested further on site to determine potential for views beyond this current extent.

At this stage, the details of the development, for example, array heights and dimensions of structures which will form part of the development, such as battery storage are not itemised. Consequently, any ZTV may be unrepresentative of the full extent of visibility and the ZTV should clearly demonstrate the full extent of the proposed development stating what has been included and the ultimate height/scale.

Landscape

The landscape context is identified in detail from paragraph 11.9 including a description of the landform and land-use including settlements. The Public Rights of Way (PROW) are identified as points to consider in regards sensitive receptors alongside the landscape designations within the study area and a reference to the CPRE's Tranquillity Map.

Published landscape character areas have been identified at National and County level. To align with GLVIA3, the LVIA should include an assessment of landscape effects at a range of scales and include a finer grain landscape assessment that includes the Site and immediate area and that also considers individual landscape elements such as trees and hedgerows, woodlands, ponds/water features, or historic landscape features.

Visual

The report identifies that the relatively flat landform, combined with low levels of vegetative cover results in an open landscape across most of the study area. Paragraphs 11.31 to 11.35 considers the extent of visibility in detail across different sectors of the study area and identifies elements contributing or restricting visibility.

The visual assessment should take account of the 'worst case scenario' in terms of winter views, and effects associated with landscape mitigation at the Operational Phase (year 1), Residual Phase with planting having established (typically 15 years), and at the Decommissioning Phase.

The LVIA should ensure all elements associated with the development are considered and assessed, such as battery storage and boundary fencing, which may be more visible than panels due to height and mass.

The visual assessment should include for visual receptors, and not just an assessment of any agreed viewpoints. It should also clearly cross reference viewpoints to associated receptors. Paragraph 11.3 states the LVIA will reference the Glint and Glare Assessment, however this is identified in Chapter 19 to be scoped out of the ES, despite the Justification stating that a Glint and Glare would be carried out and included in an appendix. We would typically expect a Glint and Glare Assessment be carried out (either as a chapter or stand alone report) for a solar farm project, and we would expect the LVIA to reference the findings as appropriate.

Cumulative effects

Cumulative Landscape and Visual effects have not been addressed within the Scoping Report. Cumulative Landscape and Visual effects with other schemes should be assessed as the project progresses, particularly in regards other NSIP or renewable energy projects.

Mitigation and Layout

As this is an iterative process, at this stage it is not relevant to comment on any potential mitigation or layout of the development. However, best practice guidance, relevant published landscape character assessment's and Local and County Council Policy and Guidance shall be referred to and implemented as appropriate. We would also expect the landscape and planting scheme is coordinated with other relevant disciplines, such as ecology or civils (e.g. SuDS features), to improve the value of the landscape and reflect appropriate local and regional aims and objectives. Any Landscape Scheme and associated Outline Management Plan should accompany the ES.

Transport and Access

The Scoping Report, in respect of Transportation, is considered to be acceptable. The Highway Authority will be seeking to ensure the traffic impact is acceptable with regards to highway capacity and safety and promotion of sustainable modes in line with National Planning Policy Framework. We will therefore be seeking a Transport Assessment and Construction Traffic Management Plan (including Travel Plan) to address these issues and ensure that any mitigation necessary is proposed. The Scoping Report mentions that these documents will be produced and that consultation with the Authorities will take place with regard to their scope (paragraphs 12.2 and 12.30).

Human Health

Chapter 11 - Human Health should detail the likely and potentially significant issues associated with the proposed development based on a preliminary judgment of significance. A range of topics with a potential impact on human health have been 'scoped out' of the chapter as they are considered in other chapters. While this approach is generally accepted, it should be ensured that any significant health effects identified across the EIA are still brought together in the Human Health chapter.

A number of PROW cross the proposed site along with a national cycle route and the Trent Valley Way long distance path. The Human Health chapter (table 16.3) acknowledges that access to PROW may be disrupted during the construction phase and this is in scope, but is silent on potential impacts during the operation and decommissioning. The national cycle route (which includes a river crossing linking villages on either side of the River Trent) and PROW provide links between villages presenting opportunities for both exercise, social interaction and access to services, all of which support health and wellbeing. The health impacts of any diversions to both PROW and the cycle route during all phases should be considered, alongside the impacts of any diversions on users associated with other relevant assessments.

There are potential health impacts associated with electromagnetic fields around substations, powerlines and cables. The effects of potential concerns about perceived exposure are suggested as in scope. However, potential actual exposure to radiation (which includes electromagnetic fields) is suggested to be out of scope (table 16.2) on the basis that the development will comply with exposure limits developed by the International Commission on Non –Ionizing Radiation Protection. The Scoping Report does not demonstrate or evidence how compliance will be met or how any combined impacts with the large number of overhead lines referred to in chapter 11 (paragraph 2.26) or the existing substation will be considered. It is considered that the evidence presented to support the scoping out of potential exposure to radiation at this stage is insufficient.

Paragraph 11.41 of Chapter 11 highlights the potential significant adverse visual effects resulting from the introduction of solar panels and associated infrastructure. The Scoping Report proposes that the impacts and any mitigation will in the main be explored in the Landscape and Visual chapter, however, it should be ensured that both the potential effects on mental health and wellbeing as a result of any reduction in landscape amenity and the potential sense of enclosure, are specifically referenced in the Human Health chapter and that this includes reference to how potential impacts across the range of identified sensitive receptors could change over time and during worst case periods.

Socio-economic

The assessment methodology proposed in the socio-economic section of the Scoping Report appears reasonable.

However, we would be keen to see benefits to the local host communities and economy explored, particularly with regards to local energy, as current growth data indicates that there may be local primary substation headroom capacity constraints in the area during the construction phase. Whilst it is noted that the operational life is not proposed to be

specified, we would also welcome consideration of the Circular Economy in any decommissioning strategy.

Consideration should also be given to impacts beyond the effects on agriculture, such as the impacts on other businesses and the socio – economic impacts resulting from compulsory purchase.

Environmental Topics Proposed to be Scoped Out

Chapter 18 sets out the topics the applicant proposes to scope out from the EIA.

Glint and Glare

Concern has been raised under Landscape and Visual above about the scoping out of glint and glare from the EIA. Consideration should also be given to the impacts from glint and glare on the users of PROW and the highway. It is noted that a glint and glare assessment report will be included as a technical appendix to the ES and this should be used to inform other relevant sections of the ES.

Waste

Consideration should be given to the impact of waste generated from the decommissioning phase and/or end of life solar arrays requiring replacement, in terms of how and where it is disposed of and its transportation from the site. Given the number of other solar schemes in the area that would be operating on similar timescales there is potential for significant amounts of waste to be generated at this stage. The impact from replacement and/or decommissioning should also be considered cumulatively with these other developments.

Yours faithfully

Justine Proudler

**for Neil McBride
Head of Planning**



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Joseph Briody
EIA Advisor
One Earth Solar Farm Case Team
oneearthsolar@planninginspectorate.gov.uk
(Email only)

Planning Inspectorate Reference: EN010159

11 December 2023

Dear Joseph Briody

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 & 11

Application by One Earth Solar Farm Ltd (the Applicant) for an Order granting Development Consent for the One Earth Solar Farm (the Proposed Development)

Scoping consultation and notification of the Applicant's contact details and duty to make available information to the Applicant if requested

Thank you for your scoping consultation dated 13 November 2023 and for providing the Marine Management Organisation (MMO) with the opportunity to share our comments with you on the One Earth Solar Farm Scoping Report.

From review of the Scoping Report, there is limited information on the Marine Licensable aspects. Therefore, we cannot provide further details at this stage. It is the responsibility of the applicant to decide whether there is a marine licensable activity involved as part of the project and we encourage early engagement from the applicant where required.

If you require any further information, please do not hesitate to contact me using the details provided below.

Yours Sincerely



Amy Trakos
Marine Licensing Senior Case Manager

D +44 (0) [redacted]
E [redacted] [@marinemanagement.org.uk](mailto:[redacted]@marinemanagement.org.uk)



From: [REDACTED] [k](#)
To: [One Earth Solar](#)
Subject: 20231127_MOD_Response
Date: 27 November 2023 15:40:21

FAO Joseph Briody,

Thank you for consulting the Ministry of Defence (MOD) on Scoping notification reference EN010159.

The Defence Infrastructure Organisation (DIO) Safeguarding Team represents the MOD as a consultee in UK planning and energy consenting systems to ensure that development does not compromise or degrade the operation of defence sites such as aerodromes, explosives storage sites, air weapon ranges, and technical sites or training resources such as the Military Low Flying System.

I can confirm that, following review of the application documents, the proposed development falls outside of MOD safeguarded areas and does not affect other defence interests. The MOD, therefore, has no objection to the development proposed.

Kind Regards

Adam Scott | Assistant Safeguarding Manager

Defence Infrastructure Organisation
Estates | Safeguarding
DIO Head Office | St George's House | DMS Whittington | Lichfield | Staffordshire |
WS14 9PY
Mobile: [REDACTED]
Email: [REDACTED]

From: [Stratton, Mike](#)
To: [One Earth Solar](#)
Subject: EN010159 - One Earth Solar Farm - EIA Scoping Notification and Consultation
Date: 16 November 2023 14:40:40

Dear Sirs,

From our perspective, we would just point out that the developer would need to contact us with regards any diversion requirements to ensure access and supplies are maintained to cover our existing assets.

Regards

Mike Stratton

Planner

Network Serv (E Mid) / Distribution - Chesterfield and Mansfield

nationalgrid

+44 [REDACTED]
[REDACTED] [@nationalgrid.co.uk](mailto:[REDACTED]@nationalgrid.co.uk)

Grange Close, Clover Nook Ind Est, Alfreton, DE55 4QT
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SUBMITTED ELECTRONICALLY:
oneearthsolar@planninginspectorate.gov.uk

11 December 2023

Dear Sir/Madam

APPLICATION BY ONE EARTH SOLAR FARM LTD (THE APPLICANT) FOR AN ORDER GRANTING DEVELOPMENT CONSENT FOR THE ONE EARTH SOLAR FARM (THE PROPOSED DEVELOPMENT)

SCOPING CONSULTATION RESPONSE

I refer to your letter dated 13th November 2023 in relation to the above proposed application. This is a response on behalf of National Grid Electricity Transmission PLC (NGET).

Having reviewed the scoping report, I would like to make the following comments regarding NGET existing or future infrastructure within or in close proximity to the current red line boundary.

NGET has high voltage electricity overhead transmission lines, underground cables and a high voltage substation within the scoping area. The overhead lines and substation forms an essential part of the electricity transmission network in England and Wales.

Substation

- High Marnham 400 kV Substation
- High Marnham 275 kV Substation
- Associated overhead and underground apparatus including cables

Overhead Lines

ZDF 400 kV OHL	Cottam – Staythorpe 1 High Marnham – Stoke Bardolph
ZDA 400 kV OHL	Cottam – Grendon Cottam - Staythorpe 2
ZDA 400 kV OHL	High Marnham – West Burton

ZDA 400 kV OHL	Cottam – Staythorpe 1 High Marnham – Stoke Bardolph Disc High Marnham
4VK 400 kV OHL	Cottam – Eaton Socon – Wymondley 2
4VE 400 kV OHL	Cottam – Grendon Cottam – Staythorpe
4ZV 275 kV OHL	Chesterfield – High Marnham 1 Chesterfield – High Marnham 2
XE 275 kV OHL	High Marnham – Thurcroft – West Melton

Cable Apparatus

- High Marnham 66 kV underground cable

New infrastructure

Please refer to the Holistic Network Design (HND) and the National Grid ESO website to view the strategic vision for the UK's ever growing electricity transmission network. <https://www.nationalgrideso.com/future-energy/the-pathway-2030-holistic-network-design/hnd>

NGET requests that all existing and future assets are given due consideration given their criticality to distribution of energy across the UK. We remain committed to working with the promoter in a proactive manner, enabling both parties to deliver successful projects wherever reasonably possible. As such we encourage that ongoing discussion and consultation between both parties is maintained on interactions with existing or future assets, land interests, connections or consents and any other NGET interests which have the potential to be impacted prior to submission of the Proposed DCO.

The Great Grid Upgrade is the largest overhaul of the electricity grid in generations, we are in the middle of a transformation, with the energy we use increasingly coming from cleaner greener sources. Our infrastructure projects across England and Wales are helping to connect more renewable energy to homes and businesses. To find out more about our current projects please refer to our network and infrastructure webpage. <https://www.nationalgrid.com/electricity-transmission/network-and-infrastructure/infrastructure-projects>. Where it has been identified that your project interacts with or is in close proximity to one of NGET's infrastructure projects, we would welcome further discussion at the earliest opportunity.

These projects are all essential to increase the overall network capability to connect the numerous new offshore wind farms that are being developed, and transport new clean green energy to the homes and businesses where it is needed.

I enclose a plan showing the location of NGET's apparatus in the scoping area.

Specific Comments – Electricity Infrastructure:

- NGET's Overhead Line/s is protected by a Deed of Easement/Wayleave Agreement which provides full right of access to retain, maintain, repair and inspect our asset
- Statutory electrical safety clearances must be maintained at all times. Any proposed buildings must not be closer than 5.3m to the lowest conductor. NGET recommends that no permanent structures are built directly beneath overhead lines. These distances are set out in EN 43 – 8 Technical Specification for “overhead line clearances Issue 3 (2004)”.
- If any changes in ground levels are proposed either beneath or in close proximity to our existing overhead lines then this would serve to reduce the safety clearances for such overhead lines. Safe clearances for existing overhead lines must be maintained in all circumstances.
- The relevant guidance in relation to working safely near to existing overhead lines is contained within the Health and Safety Executive's (www.hse.gov.uk) Guidance Note GS 6 “Avoidance of Danger from Overhead Electric Lines” and all relevant site staff should make sure that they are both aware of and understand this guidance.
- Plant, machinery, equipment, buildings or scaffolding should not encroach within 5.3 metres of any of our high voltage conductors when those conductors are under their worse conditions of maximum “sag” and “swing” and overhead line profile (maximum “sag” and “swing”) drawings should be obtained using the contact details above.
- If a landscaping scheme is proposed as part of the proposal, we request that only slow and low growing species of trees and shrubs are planted beneath and adjacent to the existing overhead line to reduce the risk of growth to a height which compromises statutory safety clearances.
- Drilling or excavation works should not be undertaken if they have the potential to disturb or adversely affect the foundations or “pillars of support” of any existing tower. These foundations always extend beyond the base area of the existing tower and foundation (“pillar of support”) drawings can be obtained using the contact details above.
- NGET high voltage underground cables are protected by a Deed of Grant; Easement; Wayleave Agreement or the provisions of the New Roads and Street Works Act. These provisions provide NGET full right of access to retain, maintain, repair and inspect our assets. Hence we require that no permanent / temporary structures are to be built over our cables or within the easement strip. Any such proposals should be discussed and agreed with NGET prior to any works taking place.
- Ground levels above our cables must not be altered in any way. Any alterations to the depth of our cables will subsequently alter the rating of the circuit and can compromise the reliability, efficiency and safety of our electricity network and requires consultation with National Grid prior to any such changes in both level and construction being implemented.

To download a copy of the HSE Guidance HS(G)47, please use the following link:
<http://www.hse.gov.uk/pubns/books/hsg47.htm>

Further Advice

We would request that the potential impact of the proposed scheme on NGET's existing assets as set out above and including any proposed diversions is considered in any subsequent reports, including in the Environmental Statement, and as part of any subsequent application.

Where any diversion of apparatus may be required to facilitate a scheme, NGET is unable to give any certainty with the regard to diversions until such time as adequate conceptual design studies have been undertaken by NGET. Further information relating to this can be obtained by contacting the email address below.

Where the promoter intends to acquire land, extinguish rights, or interfere with any of NGET apparatus, protective provisions will be required in a form acceptable to it to be included within the DCO.

NGET requests to be consulted at the earliest stages to ensure that the most appropriate protective provisions are included within the DCO application to safeguard the integrity of our apparatus and to remove the requirement for objection. All consultations should be sent to the following email address: box.landandacquisitions@nationalgrid.com

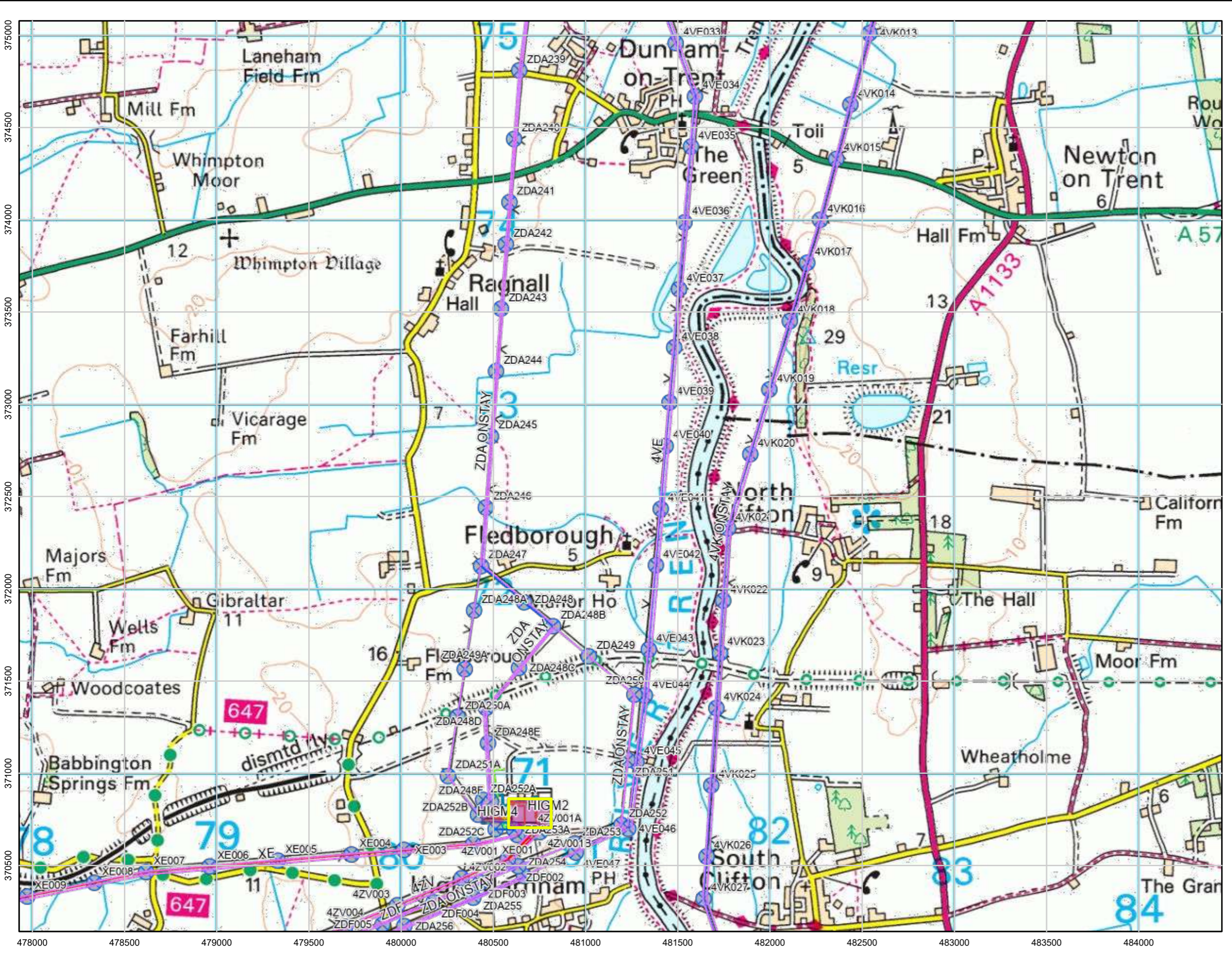
I hope the above information is useful. If you require any further information, please do not hesitate to contact me.

The information in this letter is provided notwithstanding any discussions taking place in relation to connections with electricity customer services.

Yours faithfully



**Tiffany Bate
Development Liaison Officer
Commercial and Customer Connections
Electricity Transmission Property Land and Property**



Legend

Electric Land Ownership	OHL 275Kv
Electric Land Ownership - Leasehold	OHL 275Kv Commissioned
Telecoms	OHL 400Kv
RAMM	OHL 400Kv Commissioned
Fibre Cable	OHL Circuits
Fibre Cable Commissioned	OHL Circuits Commissioned
Buried Cable	OHL Circuits Decommission
Buried Cable Commissioned	OHL Circuits Group
Towers	Substations
Towers Commissioned	Substations Commissioned

Notes

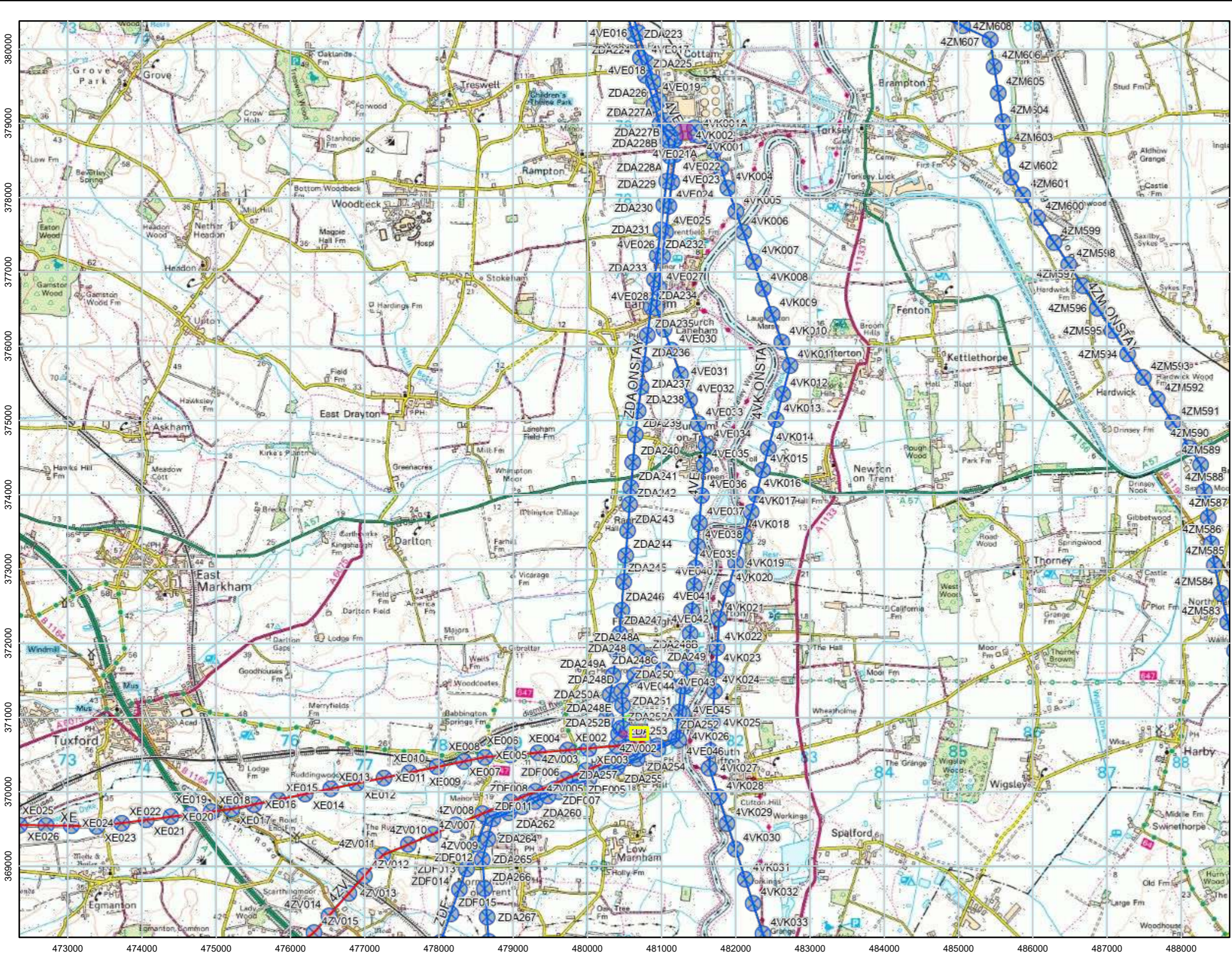




Legend

- Fibre Cable
 - Commissioned
 - Buried Cable
 - Commissioned
- Towers
 - Commissioned
- OHL 275Kv
 - Commissioned
- OHL 400Kv
 - Commissioned
- Substations
 - Commissioned

Notes



0 0.5 1 2 3 4 km
 OS Disclaimer: Background Mapping information has been reproduced from the Ordnance Survey map by permission of Ordnance Survey on behalf of The controller of His Majesty's Stationery Office. © Crown Copyright Ordnance Survey National Grid Electricity Transmission (100024241) & National Gas Transmission (100024886)

Date: 12/11/2023 Page size: A3 Landscape
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 Scale: 1:50,000



NG Disclaimer: National Grid UK Transmission. The asset position information represented on this map is the intellectual property of National Grid PLC (Warwick Technology Park, Warwick, CV346DA) and should not be used without prior authority of National Grid.
 Note: Any sketches on the map are approximate and not captured to any particular level of precision.

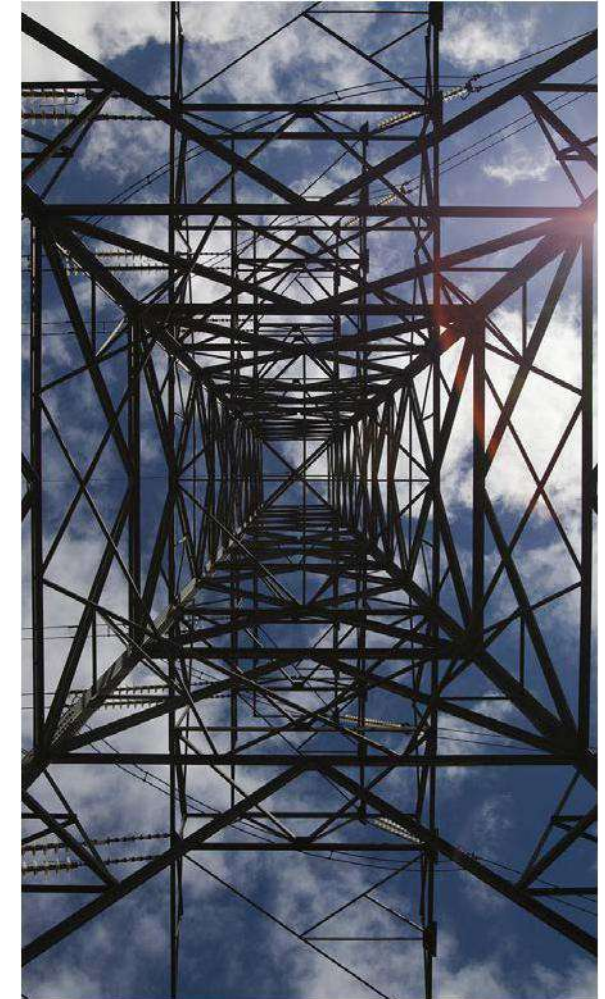
Technical Guidance Note 287

Third-party guidance for working near National Grid Electricity Transmission equipment





Purpose and scope	3	Risk of impact identification	6
Contact National Grid	3	Risks or hazards to be aware of	7
How to identify specific National Grid sites.....	3	Land and access	7
Plant protection.....	3	Electrical clearance from overhead lines.....	7
Emergencies.....	3	Underground cables.....	8
		Impressed voltage	8
Part 1 – Electricity Transmission		Earth potential rise.....	9
infrastructure	4	Noise	9
Overhead lines.....	4	Maintenance access	9
Underground cables.....	4	Fires and firefighting.....	10
Substations	4	Excavations, piling or tunnelling	10
		Microshocks.....	10
Part 2 – Statutory requirements for		Specific development guidance	11
working near high-voltage electricity	4	Wind farms.....	11
Electrical safety clearances	4	Commercial and housing developments	11
Your Responsibilities – Overhead Lines.....	5	Solar farms.....	12
		Asset protection agreements	13
Part 3 – What National Grid will do for		Contact details	13
you and your development	6	Emergency situations	13
Provision of information	6	Routine enquiries.....	13
Drawings.....	6	Appendix A OHL Profile Drawing Guide	14
		Appendix B OHL Tower Stand Off &	
		Reconductoring Area	15



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Purpose and scope

The purpose of this document is to give guidance and information to third parties who are proposing, scheduling or designing developments close to National Grid Electricity Transmission assets.

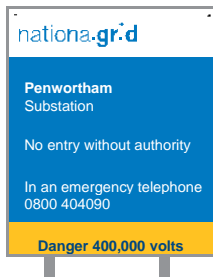
The scope of the report covers information on basic safety and the location of our assets – and also highlights key issues around particular types of development and risk areas.

In the case of electrical assets, National Grid does not authorise or agree safe systems of work with developers and contractors. However, we will advise on issues such as electrical safety clearances and the location of towers and cables. We also work with developers to minimise the impact of any National Grid assets that are nearby.

How to identify specific National Grid sites

Substations

The name of the Substation and emergency contact number will be on the site sign.



Overhead Lines

The reference number of the tower and the emergency contact number will be on this type of sign.



Contact National Grid

Plant protection

For routine enquiries regarding planned or scheduled works, contact the Asset Protection team online, by email or phone.

www.lsbud.co.uk

Email: assetprotection@nationalgrid.com

Phone: 0800 001 4282

Emergencies

In the event of occurrences such as a cable strike, coming into contact with an overhead line conductor or identifying any hazards or problems with National Grid's equipment, phone our emergency number 0800 404 090 (option 1).

If you have apparatus within 30m of a National Grid asset, please ensure that the emergency number is included in your site's emergency procedures.

Consider safety

Consider the hazards identified in this document when working near electrical equipment



Part 1

Electricity transmission infrastructure

National Grid owns and maintains the high-voltage electricity transmission network in England and Wales (Scotland has its own networks). It's responsible for balancing supply with demand on a minute-by-minute basis across the network.

Overhead lines

Overhead lines consist of two main parts – pylons (also called towers) and conductors (or wires). Pylons are typically steel lattice structures mounted on concrete foundations. A pylon's design can vary due to factors such as voltage, conductor type and the strength of structure required.

Conductors, which are the 'live' part of the overhead line, hang from pylons on insulators. Conductors come in several different designs depending on the amount of power that is transmitted on the circuit.

In addition to the two main components, some Overhead Line Routes carry a Fibre Optic cable between the towers with an final underground connection to the Substations.

In most cases, National Grid's overhead lines operate at 275kV or 400kV.

Underground cables

Underground cables are a growing feature of National Grid's network. They consist of a conducting core surrounded by layers of insulation and armour. Cables can be laid in the road, across open land or in tunnels. They operate at a range of voltages, up to 400kV.

Substations

Substations are found at points on the network where circuits come together or where a rise or fall in voltage is required. Transmission substations tend to be large facilities containing equipment such as power transformers, circuit breakers, reactors and capacitors. In addition Diesel generators and compressed air systems can be located there.

Part 2

Statutory requirements for working near high-voltage electricity

The legal framework that regulates electrical safety in the UK is *The Electricity Safety, Quality and Continuity Regulations (ESQCR) 2002*. This also details the minimum electrical safety clearances, which are used as a basis for the Energy Networks Association (ENA) TS 43-8. These standards have been agreed by CENELEC (European Committee for Electrotechnical Standardisation) and also form part of the *British Standard BS EN 50341-1:2012 Overhead Electrical Lines exceeding AC 1kV*. All electricity companies are bound by these rules, standards and technical specifications. They are required to uphold them by their operator's licence.

Electrical safety clearances

It is essential that a safe distance is kept between the exposed conductors and people and objects when working near National Grid's electrical assets. A person does not have to touch an exposed conductor to get a life-threatening

electric shock. At the voltages National Grid operates at, it is possible for electricity to jump up to several metres from an exposed conductor and kill or cause serious injury to anyone who is nearby. For this reason, there are several legal requirements and safety standards that must be met.

Any breach of legal safety clearances will be enforced in the courts. This can and has resulted in the removal of an infringement, which is normally at the cost of the developer or whoever caused it to be there. Breaching safety clearances, even temporarily, risks a serious incident that could cause serious injury or death.

National Grid will, on request, advise planning authorities, developers or third parties on any safety clearances and associated issues. We can supply detailed drawings of all our overhead line assets marked up with relevant safe areas.



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Your Responsibilities - Overhead lines

Work which takes place near overhead power lines carries a significant risk of coming into proximity with the wires. If any person, object or material gets too close to the wires, electricity could 'flashover' and be conducted to earth, causing death or serious injury. You do not need to touch the wires for this to happen. The law requires that work is carried out in close proximity to live overhead power lines only when there is no alternative, and only when the risks are acceptable and can be properly controlled. Statutory clearances exist which must be maintained, as prescribed by the Electricity Safety, Quality and Continuity Regulations 2002.

Under the Health and Safety at Work etc. Act 1974 and Management of Health and Safety at Work Regulations 1999, you are responsible for preparing a suitable and sufficient risk assessment and safe systems of work, to ensure that risks are managed properly and the safety of your workforce and others is maintained. Your risk assessment must consider and manage all of the significant risks and put in place suitable precautions/controls in order to manage the work safely. You are also responsible for ensuring that the precautions identified are properly implemented and stay in place throughout the work.

Work near overhead power lines must always be conducted in accordance with GS6, 'avoiding danger from overhead power lines', and any legislation which is relevant to the work you are completing.

What National Grid will provide

National Grid can supply profile drawings in PDF and CAD format showing tower locations and relevant clearances to assist you in the risk assessment process.

What National Grid will not provide

National Grid will not approve safe systems of work or approve design proposals



Part 3

What National Grid will do for you and your development

Provision of information

National Grid should be notified during the planning stage of any works or developments taking place near our electrical assets, ideally a minimum notification period of 8 weeks to allow National Grid to provide the following services:

Drawings

National Grid will provide relevant drawings of overhead lines or underground cables to make sure the presence and location of our services are known. Once a third party or developer has contacted us, we will supply the drawings for free.

Risk or impact identification

National Grid can help identify any hazards or risks that the presence of our assets might bring to any works or developments. This includes both the risk to safety from high-voltage electricity and longer-term issues, such as induced currents, noise and maintenance access that may affect the outcome of the development. National Grid will not authorise specific working procedures, but we can provide advice on best practice.

400kV

The maximum nominal voltage of the underground cables in National Grid's network





Risks or hazards to be aware of

This section includes a brief description of some of the hazards and issues that a third party or developer might face when working or developing close to our electrical infrastructure.

Land and access

National Grid has land rights in place with landowners and occupiers, which cover our existing overhead lines and underground cable network. These agreements, together with legislation set out under the *Electricity Act 1989*, allow us to access our assets to maintain, repair and renew them. The agreements also lay down restrictions and covenants to protect the integrity of our assets and meet safety regulations. Anyone proposing a development close to our assets should carefully examine these agreements.

Our agreements often affect land both inside and outside the immediate vicinity of an asset. Rights will include the provision of access, along with restrictions that ban the development of land through building, changing levels, planting and other operations. Anyone looking to develop close to our assets must consult with National Grid first.

For further information, contact Asset Protection:

Email: assetprotection@nationalgrid.com
Phone: 0800 001 4282

Electrical clearance from overhead lines

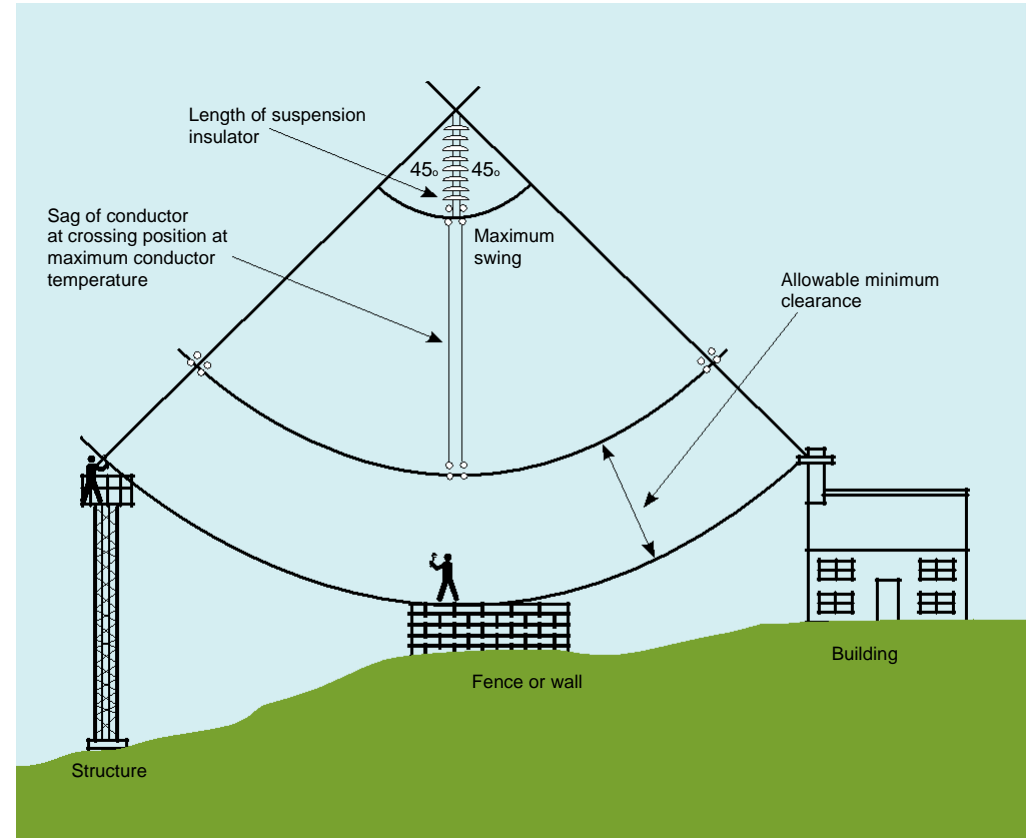
The clearance distances referred to in this section are specific to 400kV overhead lines. National Grid can advise on the distances required around different voltages i.e. 132kV and 275kV.

As we explained earlier, *Electrical Networks Association TS 43-8* details the legal clearances to our overhead lines. The minimum clearance between the conductors of an overhead line and the ground is 7.3m at maximum sag. The sag is the vertical distance between the wire's highest and lowest point. Certain conditions, such as power flow, wind speed and air temperature can cause conductors to move and allowances should be made for this.

The required clearance from the point where a person can stand to the conductors is 5.3m. To be clear, this means there should be at least 5.3m from where someone could stand on any structure (i.e. mobile and construction equipment) to the conductors. Available clearances will be assessed by National Grid on an individual basis.

National Grid expects third parties to implement a safe system of work whenever they are near Overhead Lines.

Diagram not to scale



There should be at least 5.3m between the conductors and any structure someone could stand on

We recommend that guidance such as *HSE Guidance Note GS6 (Avoiding Danger from Overhead Power Lines)* is followed, which provides advice on how to avoid danger from all overhead lines, at all voltages. If you are carrying out work near overhead lines you must contact National Grid, who will provide the relevant profile drawings.

7.3m

The required minimum clearance between the conductors of an overhead line, at maximum sag, and the ground

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The undergrounding of electricity cables at Ross-on-Wye

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Underground cables Underground cables operating at up to 400kV are a significant part of the National Grid Electricity Transmission network. When your works will involve any ground disturbance it is expected that a safe system of work is put in place and that you follow guidance such as *HSG 47 (Avoiding Danger from Underground Services)*.

You must contact National Grid to find out if there are any underground cables near your proposed works. If there are, we will provide cable profiles and location drawings and, if required, on-site supervision of the works. Cables can be laid under roads or across industrial or agricultural land. They can even be layed in canal towpaths and other areas that you would not expect.

Cables crossing any National Grid high-voltage (HV) cables directly buried in the ground are required to maintain a minimum separation that will be determined by National Grid on a case-by-case basis. National Grid will need to do a rating study on the existing cable to work out if there are any adverse effects on either cable rating. We will only allow a cable to cross such an area once we know the results of the re-rating. As a result, the clearance distance may need to be increased or alternative methods of crossing found.

For other cables and services crossing the path of our HV cables, National Grid will need confirmation that published standards and clearances are met.

Impressed voltage

Any conducting materials installed near high-voltage equipment could be raised to an elevated voltage compared to the local earth, even when there is no direct contact with the high-voltage equipment. These impressed voltages are caused by inductive or capacitive coupling between the high-voltage equipment and nearby conducting materials and can occur at distances of several metres away from the

equipment. Impressed voltages may damage your equipment and could potentially injure people and animals, depending on their severity. Third parties should take impressed voltages into account during the early stages and initial design of any development, ensuring that all structures and equipment are adequately earthed at all times.

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Earth potential rise

Under certain system fault conditions – and during lightning storms – a rise in the earth potential from the base of an overhead line tower or substation is possible. This is a rare phenomenon that occurs when large amounts of electricity enter the earth. This can pose a serious hazard to people or equipment that are close by.

We advise that developments and works are not carried out close to our tower bases, particularly during lightning storms.

Noise

Noise is a by-product of National Grid's operations and is carefully assessed during the planning and construction of any of our equipment. Developers should consider the noise emitted from National Grid's sites or overhead lines when planning any developments, particularly housing. Low-frequency hum from substations can, in some circumstances, be heard up to 1km or more from the site, so it is essential that developers find adequate solutions for this in their design. Further information about likely noise levels can be provided by National Grid.

Maintenance access

National Grid needs to have safe access for vehicles around its assets and work that restricts this will not be allowed. In terms of our overhead lines, we wouldn't want to see any excavations made, or permanent structures built, that might affect the foundations of our towers. The size of the foundations around a tower base depends on the type of tower that is built there. If you wish to carry out works within 30m of the tower base, contact National Grid for more information. Our business has to maintain access routes to tower bases with land owners. For that reason, a route wide enough for an HGV must be permanently available. We may need to access our sites, towers, conductors and underground cables at short notice.

30m

If you wish to carry out work within this distance of the tower base, you must contact National Grid for more information

Section continues on next page »





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Fires and firefighting

National Grid does not recommend that any type of flammable material is stored under overhead lines. Developers should be aware that in certain cases the local fire authority will not use water hoses to put out a fire if there are live, high-voltage conductors within 30m of the seat of the fire (as outlined in ENA TS 43-8).

In these situations, National Grid would have to be notified and reconfigure the system – to allow staff to switch out the overhead line – before any firefighting could take place. This could take several hours.

We recommend that any site which has a specific hazard relating to fire or flammable material should include National Grid's emergency contact details (found at the beginning and end of this document) in its fire plan information, so any incidents can be reported.

Developers should also make sure their insurance cover takes into account the challenge of putting out fires near our overhead lines.

Excavations, piling or tunnelling

You must inform National Grid of any works that have the potential to disturb the foundations of our substations or overhead line towers. This will have to be assessed by National Grid engineers before any work begins.

BS ISO 4866:2010 states that a minimum distance of 200m should be maintained when carrying out quarry blasting near our assets. However, this can be reduced with specific site surveys and changes to the maximum instantaneous charge (the amount of explosive detonated at a particular time).

All activities should observe guidance layed out in *BS 5228-2:2009*.

Microshocks

High-voltage overhead power lines produce an electric field. Any person or object inside this field that isn't earthed picks up an electrical charge. When two conducting objects – one that is grounded and one that isn't – touch, the charge can equalise and cause a small shock, known as a microshock. While they are not harmful, they can be disturbing for the person or animal that suffers the shock.

For these reasons, metal-framed and metal-clad buildings which are close to existing overhead lines should be earthed to minimise the risk of microshocks. Anything that isn't earthed, is conductive and sits close to the lines is likely to pick up a charge. Items such as deer fences, metal palisade fencing, chain-link fences and metal gates underneath overhead lines all need to be earthed.

For further information on microshocks please visit www.emfs.info.



200m

The minimum distance that should be maintained from National Grid assets when quarry blasting



Specific development guidance

Wind farms

National Grid's policy towards wind farm development is closely connected to the *Electricity Networks Association Engineering Recommendation L44 Separation between Wind Turbines and Overhead Lines, Principles of Good Practice*. The advice is based on national guidelines and global research. It may be adjusted to suit specific local applications.

There are two main criteria in the document:

(i) The turbine shall be far enough away to avoid the possibility of toppling onto the overhead line

(ii) The turbine shall be far enough away to avoid damage to the overhead line from downward wake effects, also known as turbulence

The toppling distance is the minimum horizontal distance between the worst-case pivot point of the wind turbine and the conductors hanging in still air. It is the greater of:

- the tip height of the turbine plus 10%
- or, the tip height of the turbine plus the electrical safety distance that applies to the voltage of the overhead line.

To minimise the downward wake effect on an overhead line, the wind turbine should be three times the rotor distance away from the centre of the overhead line.

Wake effects can prematurely age conductors and fittings, significantly reducing the life of the asset. For that reason, careful consideration should be taken if a wind turbine needs to be sited within the above limits. Agreement from National Grid will be required.

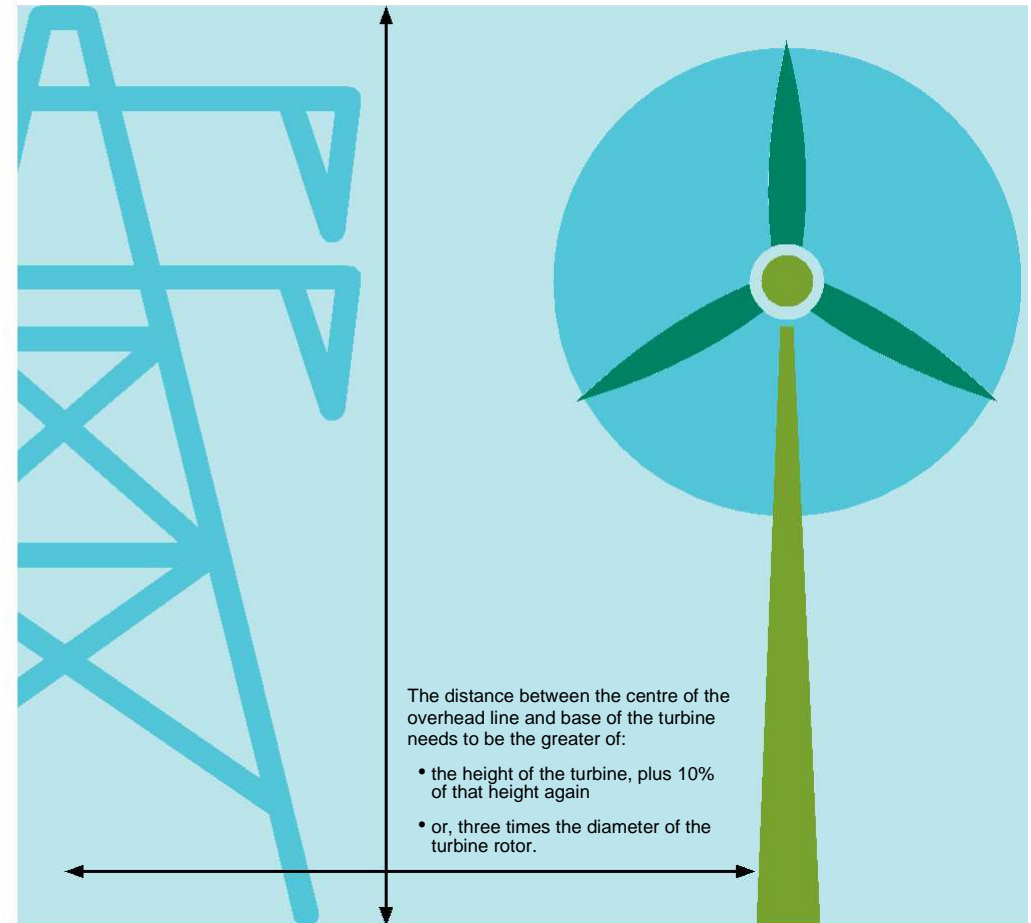
Commercial and housing developments

National Grid has developed a document called *Design guidelines for development near pylons and HVO power lines*, which gives advice to anyone involved in planning or designing large-scale developments that are crossed by, or close to, overhead lines.

The document focuses on existing 275kV and 400kV overhead lines on steel lattice towers, but can equally apply to 132kV and below. The document explains how to design large-scale developments close to high-voltage lines, while respecting clearances and the development's visual and environmental impact.

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Diagram not to scale



Turbines should be far enough away to avoid the possibility of toppling onto the overhead line



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The advice is intended for developers, designers, landowners, local authorities and communities, but is not limited to those organisations.

Overall, developers should be aware of all the hazards and issues relating to the electrical equipment that we have discussed when designing new housing.

As we explored earlier, National Grid's assets have the potential to create noise. This can be low frequency and tonal, which makes it quite noticeable. It is the responsibility of developers to take this into account during the design stage and find an appropriate solution.

Solar farms

While there is limited research and recommendations available, there are several key factors to consider when designing Solar Farms in the vicinity of Overhead Power Lines.

Developers may be looking to build on arable land close to National Grid's assets. In keeping with the safety clearance limits that we outlined earlier for solar panels directly underneath overhead line conductors, the highest point on the solar panels must be no more than 5.3m from the lowest conductors.

This means that the maximum height of any structure will need to be determined to make sure safety clearance limits aren't breached. This could be as low as 2m. National Grid will supply profile drawings to aid the planning of solar farms and determine the maximum height of panels and equipment.

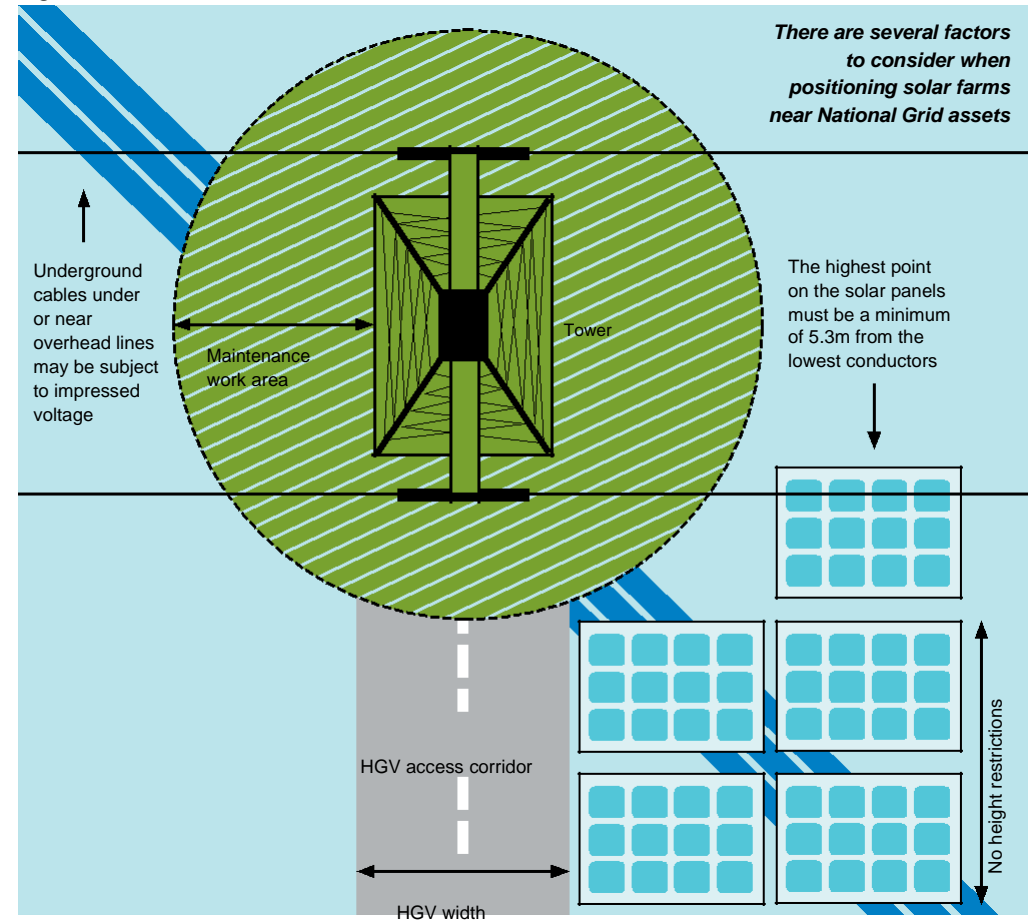
Solar panels that are directly underneath power lines risk being damaged on the rare occasion that a conductor or fitting falls to the ground. A more likely risk is ice falling from conductors or towers in winter and damaging solar panels.

There is also a risk of damage during adverse weather conditions, such as lightning storms, and system faults. As all our towers are earthed, a weather event such as lightning can cause a rise in the earth potential around the base of a tower. Solar panel support structures and supply cables should be adequately earthed and bonded together to minimise the effects of this temporary rise in earth potential.

Any metallic fencing that is located under an overhead line will pick up an electrical charge. For this reason, it will need to be adequately earthed to minimise microshocks to the public.

For normal, routine maintenance and in an emergency National Grid requires unrestricted access to its assets. So if a tower is enclosed in a solar farm compound, we will need full access for our vehicles,

Diagram not to scale



Including access through any compound gates. During maintenance – and especially re-conductoring – National Grid would need enough space near our towers for winches and cable drums. If enough space is not available, we would require solar panels to be temporarily removed.



Asset protection agreements

In some cases, where there is a risk that development will impact on National Grid's assets, we will insist on an asset protection agreement being put in place. The cost of this will be the responsibility of the developer or third party.

Contact details

Emergency situations

If you spot a potential hazard on or near an overhead electricity line, do not approach it, even at ground level. Keep as far away as possible and follow the six steps below:

- Warn anyone close by to evacuate the area
- Call our 24-hour electricity emergency number: 0800 404 090 (Option 1)¹
- Give your name and contact phone number
- Explain the nature of the issue or hazard
- Give as much information as possible so we can identify the location – i.e. the name of the town or village, numbers of nearby roads, postcode and (ONLY if it can be observed without putting you or others in danger) the tower number of an adjacent pylon
- Await further contact from a National Grid engineer

¹ It is critically important that you don't use this phone number for any other purpose. If you need to contact National Grid for another reason please use our Contact Centre at www2.nationalgrid.com/contact-us to find the appropriate information or call 0800 0014282.

Routine enquiries

Email:
assetprotection@nationalgrid.com

Call Asset Protection on:
0800 0014282

Opening hours:
Monday to Friday 08:00-16:00

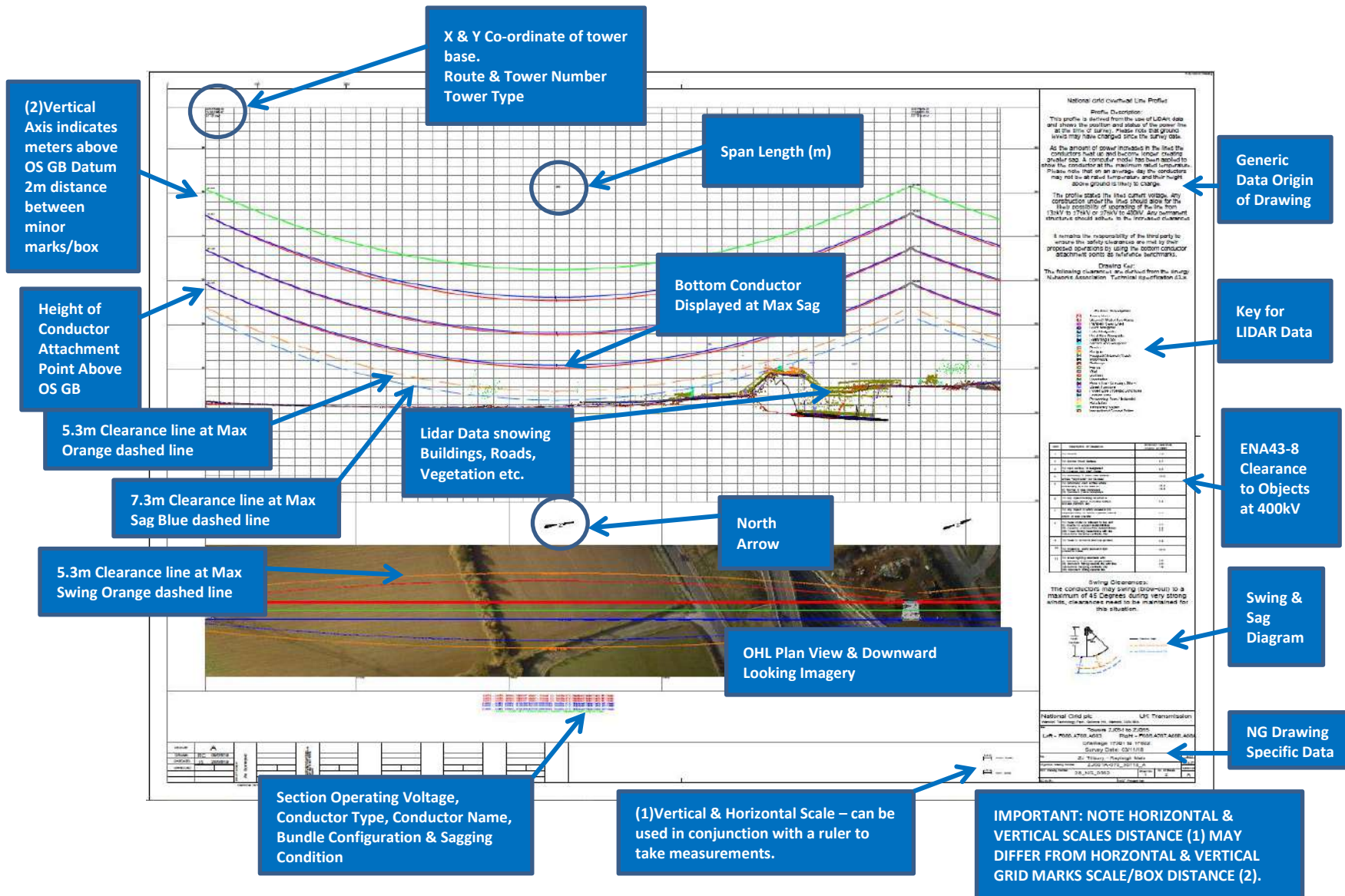
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14 APPENDIX A

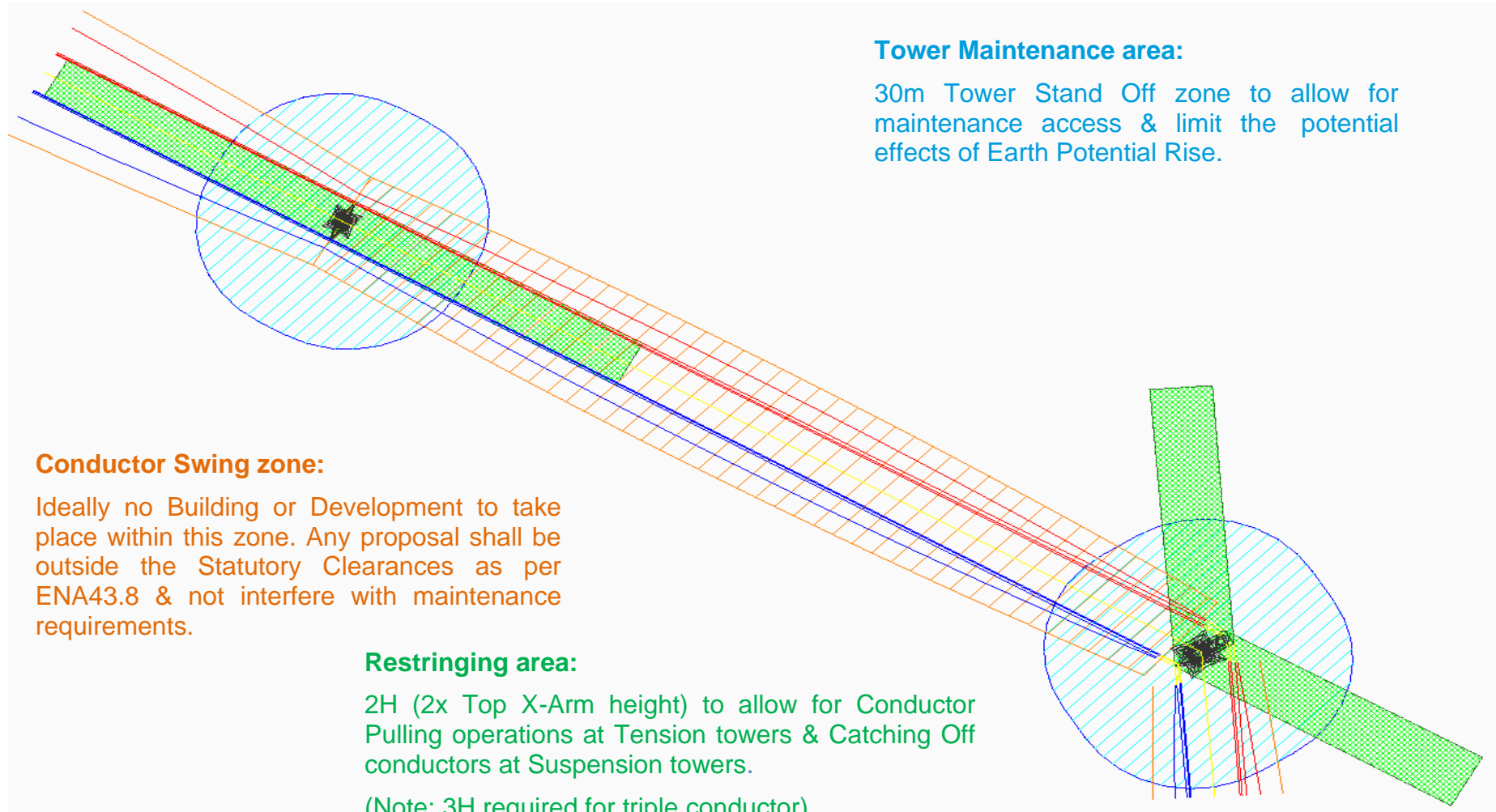


OHL Profile Drawing Guide





OHL Tower Stand Off & Reconducting Area



Conductor Swing zone:

Ideally no Building or Development to take place within this zone. Any proposal shall be outside the Statutory Clearances as per ENA43.8 & not interfere with maintenance requirements.

Restringing area:

2H (2x Top X-Arm height) to allow for Conductor Pulling operations at Tension towers & Catching Off conductors at Suspension towers.

(Note: 3H required for triple conductor)

Tower Maintenance area:

30m Tower Stand Off zone to allow for maintenance access & limit the potential effects of Earth Potential Rise.



Our ref: NH/23/03800

Your ref: EN010159

The Planning Inspectorate
Environmental Services
Central Operations
Temple Quay House
2 The Square
Bristol, BS1 6PN

Email: oneearth solar@planninginspectorate.gov.uk

Steve Freek

Assistant Spatial Planner

Midlands Operations Directorate

National Highways

The Cube

199 Wharfside Street

Birmingham

B1 1RN

Tel: [REDACTED]

22 November 2023

Dear Sir or Madam,

EIA Scoping Opinion – One Earth Solar Farm

Thank you for providing National Highways with the opportunity to respond on the Environmental Impact Assessment (EIA) scoping request for the One Earth Solar Farm.

National Highways has been appointed by the Secretary of State for Transport as a strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). It is our role to maintain the safe and efficient operation of the SRN whilst acting as a delivery partner to national economic growth. In relation to this consultation, our principal interest is in safeguarding the A1 trunk road located approximately 7 miles to the west of the site, the A46 trunk road, located approximately 9 miles to the east of the site.

In responding to sustainable development consultations, we have regard to DfT Circular 01/2022 - The Strategic Road Network and the Delivery of Sustainable Development ('the Circular'). This sets out how interactions with the Strategic Road Network should be considered in the making of local plans and development management proposals. In addition to the Circular, the response set out below is also in accordance with the National Planning Policy Framework (NPPF) and other relevant policies.

We note that this consultation is in accordance with EIA Regulations 10 and 11 and is the first pre-application consultation being undertaken to inform a subsequent Development Consent Order (DCO) application. It is understood that a DCO submission is necessary as the proposal is considered to be a Nationally Significant Infrastructure Project (NSIP) given the site's energy output is expected to exceed 50 Megawatts.

In relation to this Stage One consultation, National Highways has reviewed the submitted Scoping Report (dated November 2023). We understand from this that the Planning Inspectorate has identified National Highways as a consultation body which must be

consulted prior to adopting its Scoping Opinion and developing a subsequent Environmental Statement.

The following sets out our initial review of this proposal and the further information that we will require to fully consider the proposal's impact on our network:

National Highways' Considerations

Site Access and Boundary

It is noted that the site will not be accessed directly from the SRN and is located far enough from the SRN that there should be no physical impacts to our network. Consequently, we have no comments regarding site access or boundary matters.

Operation - Traffic Impacts

It is anticipated that during normal operations vehicle trips to the site for maintenance purposes will be minimal. In view of this, we are unlikely to have any concerns relating to traffic impacts on our network once the site is operational, particularly considering the distance from our network.

Construction - Traffic Impacts

National Highways will require information on the number of HGVs and private vehicles that will be travelling on the SRN to transport materials, equipment and staff to the site. We also require an understanding of what route these vehicles will take to the site as well as the time of day they will likely be arriving and leaving.

Information regarding the access and exit routes and arrival/departure times of workers during the construction period should also be provided to enable sufficient management of construction traffic and to minimise impacts on the SRN.

Recommended Transport Assessment

In light of the above comments, we would expect any formal planning application to be accompanied by a Transport Assessment prepared in accordance with Planning Practice Guidance on Travel Plans, Transport Assessments and Statements (March, 2014). In addition, due to the proximity of the site to the SRN, the Transport Assessment should be produced in accordance with DfT Circular 01/2022: The Strategic Road Network and the Delivery of Sustainable Development.

We suggest that the Transport Assessment include the following:

- Development proposal details– information about the scale of the proposed development (and its construction) including any phasing, parking, access points, hours/days of operation, timescales for the construction period, and anticipated year of opening.

- Trip generation – information about the anticipated levels of traffic the development would generate. This should include a breakdown of staff commuting trips, and HGV/delivery trip generation for the operational and construction phases. The data should include an hourly breakdown of trips to/from the site.
- Trip assignment – information about traffic routings (for construction and operational phases) in relation to the SRN. This should be presented in absolute numbers and percentages.
- Depending on the scale and distribution of new trips, it may also be necessary to indicate how traffic associated with the development proposal will impact on the SRN in the peak hours. These impacts should be considered for the site both as a standalone operation, and cumulatively with other nearby solar farm applications, (plus any wider committed developments), to consider whether the development will result in material implications for SRN junctions. Junctions of interest for the SRN are likely to be the A1 / 57 and the A46 / A57 junctions.
- Where further assessments are deemed necessary these should be carried out for the proposed opening year of the development (or where applicable, the start of construction).

It may be beneficial for the above assessment work to be agreed in a staged approach with the first stage being to agree the trip generation and trip distribution. This will determine if any further assessments with respect of the SRN are required.

In addition to a Transport Assessment, National Highways should also be consulted on a Construction Traffic Management Plan (CTMP). This should set out how the environmental impacts of construction traffic will be minimised and mitigated.

We hope this is useful in the progression of the DCO application. If I can be of any further assistance, please do not hesitate to contact me.

Yours sincerely,

S Freek

Steve Freek
Midlands Operations Directorate
Email: [REDACTED] [@nationalhighways.co.uk](mailto:[REDACTED]@nationalhighways.co.uk)

From: [NATS Safeguarding](#)
To: [One Earth Solar](#)
Subject: RE: EN010159 - One Earth Solar Farm - EIA Scoping Notification and Consultation [SG36473]
Date: 14 November 2023 15:48:31
Attachments: [image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
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[image015.png](#)
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Our Ref: SG36473

Dear Sir/Madam

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NATS (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NATS in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours faithfully

NATS

NATS Safeguarding

E: natssafeguarding@nats.co.uk

4000 Parkway, Whiteley,
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www.nats.co.uk



Date: 29 November 2023
Our ref: 456535
Your ref: EN010159



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BY EMAIL ONLY

Dear Joseph

Environmental Impact Assessment Scoping consultation under Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulation 11

Proposal: One Earth Solar Farm and BESS proposal

Location: Nottinghamshire and Lincolnshire

Thank you for seeking our advice on the scope of the Environmental Statement (ES) in the consultation dated 13 November 2023, received on 13 November 2023.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

A robust assessment of environmental impacts and opportunities, based on relevant and up to date environmental information, should be undertaken prior to an application for a Development Consent Order. Annex A to this letter provides Natural England's advice on the scope of the Environmental Impact Assessment (EIA) for the proposed development.

The information provided by the applicant allows us to make detailed comments on the scope of the Environmental Statement. Detailed advice on scoping the Environmental Statement is available in the attached Annex.

For any further advice on this consultation please contact the case officer Lucy Collins and copy to consultations@naturalengland.org.uk.

Yours sincerely

Lucy Collins
Planning & Environment Lead Advisor
East Midlands Area Team

Annex A – Natural England Advice on EIA Scoping

1. General Principles

Regulation 11 of the Infrastructure Planning Regulations 2017 - (The EIA Regulations) sets out the information that should be included in an Environmental Statement (ES) to assess impacts on the natural environment. This includes:

- A description of the development – including physical characteristics and the full land use requirements of the site during construction and operational phases
- Appropriately scaled and referenced plans which clearly show the information and features associated with the development
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen is considered within the ES
- A description of the aspects and matters requested to be scoped out of further assessment with adequate justification provided.
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation etc.) resulting from the operation of the proposed development
- A description of the aspects of the environment likely to be significantly affected by the development including biodiversity (for example fauna and flora), land, including land take, soil, water, air, climate (for example greenhouse gas emissions, impacts relevant to adaptation, cultural heritage and landscape and the interrelationship between the above factors
- An outline of the structure of the proposed ES

2. Cumulative and in-combination effects

The ES should fully consider the implications of the whole development proposal. This should include an assessment of all supporting infrastructure.

An impact assessment should identify, describe, and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment (subject to available information):

- a. existing completed projects;
- b. approved but uncompleted projects;
- c. ongoing activities;
- d. plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
- e. plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Plans or projects that Natural England are aware of that might need to be considered in the ES	
Project /Plan	Status
Springwell Solar Farm	Plans and projects which are reasonably foreseeable
Beacon Fen Energy Park	Plans and projects which are reasonably foreseeable

Cottam Solar	Plans or projects for which an application has been made and which are under consideration by the consenting authorities
West Burton	Plans or projects for which an application has been made and which are under consideration by the consenting authorities
Mallard Pass	Plans or projects for which an application has been made and which are under consideration by the consenting authorities
Gate Burton	Plans or projects for which an application has been made and which are under consideration by the consenting authorities
Tillbridge Solar Farm	Plans and projects which are reasonably foreseeable
Oaklands Farm	Plans and projects which are reasonably foreseeable
Heckington Fen	Plans or projects for which an application has been made and which are under consideration by the consenting authorities
Temple Oaks Renewable Energy Scheme	Plans and projects which are reasonably foreseeable
Outer Dowsing Offshore Wind - Onshore	Plans and projects which are reasonably foreseeable

3. Environmental data

Natural England is required to make available information it holds where requested to do so. National datasets held by Natural England are available at <http://www.naturalengland.org.uk/publications/data/default.aspx>.

Detailed information on the natural environment is available at www.magic.gov.uk.

Natural England's SSSI Impact Risk Zones are a GIS dataset which can be used to help identify the potential for the development to impact on a SSSI. The dataset and user guidance can be accessed from the [Natural England Open Data Geoportal](#).

Natural England does not hold local information on local sites, local landscape character, priority habitats and species or protected species. Local environmental data should be obtained from the appropriate local bodies. This may include the local environmental records centre, the local wildlife trust, local geo-conservation group or other recording society.

4. Biodiversity and Geodiversity

The [National Planning Policy Framework](#) (paragraphs 174-175 and 179-182) sets out how to take account of biodiversity and geodiversity interests in planning decisions. Further guidance is set out in Planning Practice Guidance on the [natural environment](#).

The potential impact of the proposal upon sites and features of nature conservation interest and opportunities for nature recovery and biodiversity net gain should be included in the assessment.

Ecological Impact Assessment (EclA) is the process of identifying, quantifying, and evaluating the potential impacts of defined actions on ecosystems or their components. EclA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal. [Guidelines](#) have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Conserving biodiversity can include habitat restoration or enhancement. Further information is available [here](#).

5. Designated Nature Conservation Sites

The proposal is unlikely to adversely impact any European or internationally designated nature conservation sites (including 'habitats sites' under the NPPF) or nationally designated sites (Sites of Special Scientific Interest, National Nature Reserves or Marine Conservation Zones).

6. Regionally and Locally Important Sites

The ES should consider any impacts upon local wildlife and geological sites, including local nature reserves. Local Sites are identified by the local wildlife trust, geoconservation group or other local group and protected under the NPPF (paragraph 174 and 175). The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for enhancement and improving connectivity with wider ecological networks. Contact the relevant local body for further information.

7. Protected Species

The conservation of species protected under the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017 is explained in Part IV and Annex A of Government Circular 06/2005 [Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System](#).

Applicants should check to see if a mitigation licence is required using NE guidance on licencing [NE wildlife licences](#). Applicants can also make use of Natural England's (NE) charged service [Pre Submission Screening Service](#) for a review of a draft wildlife licence application. NE then reviews a full draft licence application to issue a Letter of No Impediment (LONI) which explains that based on the information reviewed to date, that it sees no impediment to a licence being granted in the future should the DCO be issued. This is done to give the Planning Inspectorate confidence to make a recommendation to the relevant Secretary of State in granting a DCO. See [Advice Note Eleven, Annex C – Natural England and the Planning Inspectorate | National Infrastructure Planning](#) For details of the LONI process.

The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats). Natural England does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area.

The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.

Natural England has adopted [standing advice](#) for protected species, which includes guidance on survey and mitigation measures. A separate protected species licence from Natural England or Defra may also be required.

8. District Level Licensing for Great Crested Newts

District level licensing (DLL) is a type of strategic mitigation license for great crested newts (GCN) granted in certain areas at a local authority or wider scale. A [DLL scheme for GCN](#) may be in place at the location of the development site. If a DLL scheme is in place, developers can make a financial contribution to strategic, off-site habitat compensation instead of applying for a separate license or carrying out individual detailed surveys. By demonstrating that DLL will be used, impacts on GCN can be scoped out of detailed assessment in the Environmental Statement.

There is currently no DLL scheme in Lincolnshire or Nottinghamshire within the project boundary.

9. Priority Habitats and Species

Priority Habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. Lists of priority habitats and species can be found [here](#). Natural England does not routinely hold species data. Such data should be collected when impacts on priority habitats or species are considered likely.

Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. Sites can be checked against the (draft) national Open Mosaic Habitat (OMH) inventory published by Natural England and freely available to [download](#). Further information is also available [here](#).

An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present.

The Environmental Statement should include details of:

- Any historical data for the site affected by the proposal (e.g. from previous surveys)
- Additional surveys carried out as part of this proposal
- The habitats and species present
- The status of these habitats and species (e.g. whether priority species or habitat)
- The direct and indirect effects of the development upon those habitats and species
- Full details of any mitigation or compensation measures
- Opportunities for biodiversity net gain or other environmental enhancement

Reference to local Biodiversity Opportunity Mapping and the Local Nature Recovery Strategy should inform any priority habitats and opportunities for increasing size, quality and connections of habitats to contribute to the Nature Recovery Network.

10. Ancient Woodland, Ancient and Veteran Trees

The ES should assess the impacts of the proposal on any ancient woodland, ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement.

Ancient woodland is an irreplaceable habitat of great importance for its wildlife, its history, and the contribution it makes to our diverse landscapes. Paragraph 180 of the NPPF sets out the highest level of protection for irreplaceable habitats and development should be refused unless there are wholly exceptional reasons, and a suitable compensation strategy exists.

Natural England maintains the Ancient Woodland [Inventory](#) which can help identify ancient woodland. The [wood pasture and parkland inventory](#) sets out information on wood pasture and parkland.

The [ancient tree inventory](#) provides information on the location of ancient and veteran trees.

Natural England and the Forestry Commission have prepared [standing advice](#) on ancient woodland, ancient and veteran trees.

11. Biodiversity Net Gain

The Environment Act 2021 includes NSIPs in the requirement for Biodiversity Net Gain (BNG), with the biodiversity gain objective for NSIPs defined as at least a 10% increase in the pre-development biodiversity value of the on-site habitat. It is the intention that BNG should apply to all terrestrial NSIPs accepted for examination from November 2025. Natural England welcome the Project's commitment to include BNG in the project in advance of this date, including this project.

Biodiversity Net Gain outcomes can be achieved on-site, off-site or through a combination of both, however, on-site provision should be considered first. Natural England advise that the latest version of the [biodiversity metric](#) should be used to calculate the biodiversity impact of the development. It should be noted that the same version of the BNG metric should be used pre- and post-development to ensure consistency, as each version of the metric may give altered biodiversity unit scores as the calculator is updated.

Natural England recognises the high opportunity for the development to deliver BNG and it is recommended that the following guidance is applied in order to achieve this:

- [Biodiversity Net Gain: Good Practice Principals for Development](#)
- [BS 8683: 2021 Process for designing and implementing Biodiversity Net Gain](#)

In addition, the applicant should be aware of forthcoming guidance and legislation in relation to the Environment Act 2021, which may be released in the interim prior to submission of the DCO application.

In order to maximise nature recovery and target habitat enhancement where it will have the greatest local benefit it is recommended that locally identified opportunities should be acknowledged and incorporated into the design of BNG (both on and off-site). This should include any locally mapped ecological networks and priority habitats identified by Newark & Sherwood District Council, Bassetlaw District Council and Central Lincolnshire Local Authorities. In addition, Local Nature Recovery Strategies (LNRS) are a new mandatory system of spatial strategies for nature established by the Environment Act 2021 which will contribute to the national Nature Recovery Network (NRN). Work is currently underway to develop these strategies, which will identify strategic priorities for nature protection, recovery, and enhancement. Given the size, scale and opportunities afforded by the application it is therefore recommended that engagement with relevant local planning authorities, responsible authorities and statutory consultees (including Natural England) is undertaken to align habitat enhancement through the development with any emerging plans and policies in relation to LNRS.

12. Landscape and visual impacts

The environmental assessment should refer to the relevant [National Character Areas](#). Character area profiles set out descriptions of each landscape area and statements of environmental opportunity.

The EIA should include a full assessment of the potential impacts of the development on local landscape character using [landscape assessment methodologies](#). We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing, and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character.

A landscape and visual impact assessment should also be carried out for the proposed development and surrounding area. Natural England recommends use of the methodology set out in *Guidelines for Landscape and Visual Impact Assessment 2013* ((3rd edition) produced by the Landscape Institute and the Institute of Environmental Assessment and Management. For National Parks and AONBs, we advise that the assessment also includes effects on the 'special qualities' of the designated landscape, as set out in the statutory management plan for the area. These identify the particular landscape and related characteristics which underpin the natural beauty of the area and its designation status.

The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. This should include an assessment of the impacts of other proposals currently at scoping stage.

To ensure high quality development that responds to and enhances local landscape character and distinctiveness, the siting and design of the proposed development should reflect local characteristics and, wherever possible, use local materials. Account should be taken of local design policies, design codes and guides as well as guidance in the [National Design Guide](#) and [National Model Design Code](#). The ES should set out the measures to be taken to ensure the development will deliver high standards of design and green infrastructure. It should also set out detail of layout alternatives, where appropriate, with a justification of the selected option in terms of landscape impact and benefit.

The National Infrastructure Commission has also produced Design Principles [Design Principles for National Infrastructure - NIC](#) endorsed by Government in the National Infrastructure Strategy.

13. Heritage Landscapes

The ES should include an assessment of the impacts on any land in the area affected by the development which qualifies for conditional exemption from capital taxes on the grounds of outstanding scenic, scientific, or historic interest. An up-to-date list is available at www.hmrc.gov.uk/heritage/lbsearch.htm.

14. Connecting People with Nature

The ES should consider potential impacts on access land, common land, public rights of way and, where appropriate, the England Coast Path and coastal access routes and coastal margin in the vicinity of the development, in line with NPPF paragraph 100. It should assess the scope to mitigate for any adverse impacts. Rights of Way Improvement Plans (ROWIP) can be used to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.

Measures to help people to better access the countryside for quiet enjoyment and opportunities to connect with nature should be considered. Such measures could include reinstating existing footpaths or the creation of new footpaths, cycleways, and bridleways. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Access to nature within the development site should also be

considered, including the role that natural links have in connecting habitats and providing potential pathways for movements of species.

Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate.

15. Soils and Agricultural Land Quality

Soils are a valuable, finite natural resource and should also be considered for the ecosystem services they provide, including for food production, water storage and flood mitigation, as a carbon store, reservoir of biodiversity and buffer against pollution. It is therefore important that the soil resources are protected and sustainably managed. Impacts from the development on soils and best and most versatile (BMV) agricultural land should be considered in line with paragraphs 174 and 175 of the NPPF. Further guidance is set out in the Natural England [Guide to assessing development proposals on agricultural land](#).

As set out in paragraph 211 of the NPPF, new sites or extensions to sites for peat extraction should not be granted planning permission.

The following issues should be considered and, where appropriate, included as part of the Environmental Statement (ES):

- The degree to which soils would be disturbed or damaged as part of the development
- The extent to which agricultural land would be disturbed or lost as part of this development, including whether any best and most versatile (BMV) agricultural land would be impacted.

This may require a detailed Agricultural Land Classification (ALC) survey if one is not already available. For information on the availability of existing ALC information see www.magic.gov.uk.

- Where an ALC and soil survey of the land is required, this should normally be at a detailed level, e.g. one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres. The survey data can inform suitable soil handling methods and appropriate reuse of the soil resource where required (e.g. agricultural reinstatement, habitat creation, landscaping, allotments and public open space).
- The ES should set out details of how any adverse impacts on BMV agricultural land can be minimised through site design/masterplan.
- The ES should set out details of how any adverse impacts on soils can be avoided or minimised and demonstrate how soils will be sustainably used and managed, including consideration in site design and master planning, and areas for green infrastructure or biodiversity net gain. The aim will be to minimise soil handling and maximise the sustainable use and management of the available soil to achieve successful after-uses and minimise off-site impacts.

Further information is available in the [Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites](#) and The British Society of Soil Science Guidance Note [Benefitting from Soil Management in Development and Construction](#).

16. Air Quality

Air quality in the UK has improved over recent decades but air pollution remains a significant issue. For example, approximately 85% of protected nature conservation sites are currently in exceedance of nitrogen levels where harm is expected (critical load) and approximately 87% of sites exceed the level of ammonia where harm is expected for lower plants (critical level of 1µg) ^[1]. A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The Government's Clean Air Strategy also has a number of targets to reduce emissions including to reduce damaging deposition of reactive forms of nitrogen by 17% over England's protected priority sensitive habitats by 2030, to reduce emissions of ammonia against the 2005 baseline by 16% by 2030 and to reduce emissions of NO_x and SO₂ against a 2005 baseline of 73% and 88% respectively by 2030. Shared Nitrogen Action Plans (SNAPs) have also been identified as a tool to reduce environmental damage from air pollution.

The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly, or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land. The ES should take account of the risks of air pollution and how these can be managed or reduced. This should include taking account of any strategic solutions or SNAPs, which may be being developed or implemented to mitigate the impacts on air quality. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk).

Information on air pollution modelling, screening and assessment can be found on the following websites:

- SCAIL Combustion and SCAIL Agriculture - <http://www.scail.ceh.ac.uk/>
- Ammonia assessment for agricultural development <https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit>
- Environment Agency Screening Tool for industrial emissions <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>
- Defra Local Air Quality Management Area Tool (Industrial Emission Screening Tool) – England <http://www.airqualityengland.co.uk/laqm>

17. Water Quality

NSIPs can occur in areas where strategic solutions are being determined for water pollution issues and they may not have been factored into the local planning system as they are delivered through National Policy Statements.

The planning system plays a key role in determining the location of developments which may give rise to water pollution, and hence planning decisions can have a significant impact on water quality, and land. The assessment should take account of the risks of water pollution and how these can be managed or reduced. A number of water dependent protected nature conservation sites have been identified as failing condition due to elevated nutrient levels and nutrient neutrality is consequently required to enable development to proceed without causing further damage to these sites. The ES needs to take account of any strategic solutions for nutrient neutrality or Diffuse Water Pollution Plans, which may be being developed or implemented to mitigate and address the impacts of elevated nutrient levels.

18. Climate Change

The ES should identify how the development affects the ability of the natural environment (including habitats, species, and natural processes) to adapt to climate change, including its ability to provide adaptation for people. This should include impacts on the vulnerability or resilience of a natural feature (i.e. what's already there and affected) as well as impacts on how the environment can accommodate change for both nature and people, for example whether the development affects species ability to move and adapt. Nature-based solutions, such as providing green infrastructure

[1] [Report: Trends Report 2020: Trends in critical load and critical level exceedances in the UK - Defra, UK](#)

on-site and in the surrounding area (e.g. to adapt to flooding, drought and heatwave events), habitat creation and peatland restoration, should be considered. The ES should set out the measures that will be adopted to address impacts.

Further information is available from the [Committee on Climate Change's \(CCC\) Independent Assessment of UK Climate Risk](#), the [National Adaptation Programme \(NAP\)](#), the [Climate Change Impacts Report Cards](#) (biodiversity, infrastructure, water etc.) and the [UKCP18 climate projections](#).

The Natural England and RSPB [Climate Change Adaptation Manual](#) (2020) provides extensive information on climate change impacts and adaptation for the natural environment and adaptation focussed nature-based solutions for people. It includes the Landscape Scale Climate Change Assessment Method that can help assess impacts and vulnerabilities on natural environment features and identify adaptation actions. Natural England's [Nature Networks Evidence Handbook](#) (2020) also provides extensive information on planning and delivering nature networks for people and biodiversity.

The ES should also identify how the development impacts the natural environment's ability to store and sequester greenhouse gases, in relation to climate change mitigation and the natural environment's contribution to achieving net zero by 2050. Natural England's [Carbon Storage and Sequestration by Habitat report](#) (2021) and the British Ecological Society's [nature-based solutions report](#) (2021) provide further information.

19. Contribution to local environmental initiatives and priorities

The ES should consider the contribution the development could make to relevant local environmental initiatives and priorities to enhance the environmental quality of the development and deliver wider environmental gains. This should include considering proposals set out in relevant local strategies or supplementary planning documents including landscape strategies, green infrastructure strategies, Sustainable Drainage System (SuDS) strategies, tree and woodland strategies, biodiversity strategies or biodiversity opportunity areas. Opportunities for wider environmental gains often include multifunctional benefits and can improve environment for people, nature and climate.



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Your Ref: EN010159
Our Ref: 23/02003/CONSUL

Sent via email to:

oneearthsolar@planninginspectorate.gov.uk

Date: 06 December 2023

Dear Sir/Madam

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11

Application by One Earth Solar Farm Ltd (the Applicant) for an Order granting Development Consent for the One Earth Solar Farm (the Proposed Development)

Scoping Consultation

Thank you for your consultation request under regulation 10(6) of the Environmental Impact Assessment (EIA) Regulations which was received by this Authority on 13th November 2023 and requests this Council's comments by 11th December 2023.

Newark & Sherwood District Council (NSDC), as a consultation body and host authority, wishes to make the following comments regarding information to be provided with the Environmental Statement (ES). The comments enclosed are made following the structure of the One Earth Solar Farm Scoping Report prepared by Logika Group Ltd on behalf of One Earth Solar Farm Ltd (dated November 2023).

Reference/ Pages	Description	NSDC's Comments
Chapter 1 Pg. 2-10	Introduction	NSDC agrees that the development falls under Paragraph 3 of Schedule 2 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations). In the absence of an EIA Screening Opinion, NSDC considers the Development is likely to have significant effects on the environment and agrees with the Applicant's intention that they will submit an Environmental Statement (ES) with their application (para. 1.10).
Chapter 2 Pg. 11-17	Description of the Site and Surrounding Area	No comments to make.
Chapter 3 Pg. 18-29	The Development Proposals	<p><u>The Proposed Development</u></p> <p>NSDC supports the suggested approach that the EIA will be based on the principles of the "Rochdale envelope" in accordance with PINS Advice Note 9 (para. 3.1). As per paragraph 4.9 of the Advice Note: <i>"The assessment should establish those parameters likely to result in the maximum adverse effect (the worst-case scenario) and be undertaken accordingly to determine significance."</i></p> <p>The ES should therefore be very clear in setting out which parameters are not yet fixed and where maximum parameters are being applied. It should include the maximum parameters such as the maximum footprint of development, the maximum size and heights of development components and the maximum capacities for output and storage; the likely foundation design for the solar panels and their construction method e.g., if piling will be required; and the locations and voltages of overhead and underground cables.</p> <p><u>Module Height and Specification</u></p> <p>Para. 3.11 refers to the maximum height of the top of the Solar PV modules being 3.8m in areas without flood risk and where flood depths are less than 1m. It goes on to explain that the maximum heights of the panels in areas of flood risk >1m will be</p>

		<p>determined following further discussions with the Environment Agency (EA) and detailed in the Development Consent Order (DCO) application. NSDC considers that the maximum height of all the development components, including in areas of flood risk, must be detailed in the ES as one of the maximum parameters of the development.</p> <p><u>Solar PV Module Mounting Structures</u> The likely foundation design for the solar panels and their construction method including any relevant piling method should be detailed in the ES (para. 3.12).</p> <p><u>Battery Storage</u> No indication of the battery energy storage capacity of the site is given, nor is an approximation of the amount of land within the site that would be set aside for this element of the Development. The ES should describe the maximum parameters/the worst-case scenario of the proposed battery storage areas including the likely foundation design. (paras. 3.17-3.22).</p> <p><u>Substations</u> Para. 3.23 explains that the size and number of substations is unknown – the ES should consider the final quantum and positioning of the proposed substations, and we would invite PINS to require that the worst-case scenario is tested based on maximum described dimensions.</p> <p><u>Onsite Cabling</u> It is considered that the precise details of the cabling method as well as its voltage and routing, be it underground or above ground, is likely to have significant environmental effects and that this must be covered in the scope of the ES (para. 3.27).</p> <p><u>Electricity Export and Point of Connection to the National Electricity Transmission System</u> Para. 3.29 explains that cabling will be required to cross the River Trent. It is not explicit whether this would be overground or underground - precise details of the cabling method as well as its voltage and routing should be detailed within the ES.</p>
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		<p><u>Fencing, Security & Ancillary Infrastructure</u> Para. 3.33 notes that there will be “lighting, to the appropriate standards, of the substation and BESS compounds”. The Landscape and Visual Impact Assessment (LVIA) must therefore consider the type, location and lux levels of any proposed light fittings, their spacings, whether permanently illuminated during certain hours or whether lighting will be sensor triggered and the associated cowling/mitigation. Whilst the site is not within an identified ‘dark skies’ location, it is considered that the scale of the site and the unknown extent and type of external lighting at this stage nevertheless means that sky glare and glow should be scoped into the terms of the LVIA.</p> <p><u>Landscaping, habitat management and biodiversity enhancement</u> Whilst measures for achieving biodiversity net gain are noted (para. 3.41), the ES must take into account the time and nature of any new landscaping being established and maturing during the lifetime of the development.</p> <p><u>Construction Phase of the Proposed Development</u> The construction phasing, and proposals to provide a Construction Environmental management Plan (CEMP) are noted (para. 3.51). NSDC considers the ES should provide details regarding the location, construction, operation, decommissioning and proposed duration of temporary construction compounds required and assess the likely environmental effects during the construction phases of development.</p> <p><u>Maintenance</u> Maintenance is noted as being required (para. 3.54). A number of aspect chapters reference this. However, the Scoping Report does not set out what maintenance may involve. It is noted that effects are likely to be similar to those during construction however the frequency and scale of maintenance is not explained. The ES should clearly explain what maintenance would be required, how this is assessed and any likely significant effects arising from such activity.</p> <p><u>Decommissioning Phase</u> It is noted that para. 3.55 states “The operational life of the Proposed Development is</p>
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		<p><i>not proposed to be specified in the application and at this stage the Applicant is not seeking a time limited consent, although a decision will be made following the preparation of the EIA, depending on whether there are any effects which would justify limiting the time period of the consent.” (emphasis added). However, in other chapters of the Report an operational time period of 45-years is cited.</i></p> <p>If the Applicant is not seeking a time limited consent NSDC considers the ES should assess the development as if it is permanent and therefore any identified significant effects should not be tempered by the justification that the Development would be ‘temporary’ or that any impacts identified could be reversed when the development is decommissioned. The ES should therefore make the intended lifetime of the Proposed development explicit.</p> <p>The Scoping Report states that a Decommissioning Environmental Management Plan would be secured via a DCO requirement (para. 3.56) however, NSDC would expect to see the inclusion of an Outline Decommissioning Plan or similar with the Application. The ES should clearly set out if and how decommissioning is to be assessed and any components which may remain following decommissioning.</p> <p><u>Other Comments</u></p> <p>Within this section of the Scoping Report, it is clear that a number of aspects of the Development in terms of its design are yet to be determined. Consequently, the ES should detail any alternatives considered within this section.</p>
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<p>Chapter 4 Pg. 30-39</p>	<p>Planning Policy Context</p>	<p><u>Planning Act 2008</u> Whilst the Applicant considers (para. 4.5) that Section 105 of the Planning Act 2008 (Decisions in cases where no National Policy Statement has effect) will be engaged, it is recognised that under the Energy White Paper, draft National Policy Statements have been published and have been subject to consultation. The draft NPS EN-3 (Renewable Energy) does now expressly consider Solar Photovoltaic Generation. Consequently, at the time a Development Consent Order (DCO) is applied for, and during consideration of the Application, it is likely that it will be S104 of the Planning Act 2008 (Decisions in cases where NPS has effect) that should be applied, not S105. In any event, it is considered that the draft NPS (particularly draft EN-1 and EN-3) should be material considerations.</p> <p><u>Local Planning Policy</u> Paras. 4.39-4.42 consider NSDCs Development Plan Policies with specific reference to Core Policy 10 (Climate Change) of the Amended Core Strategy (2019) and Policy DM4 (Renewable and Low Carbon Energy Generation) of the ADMDPD (2013). NSDC would highlight that other Development Plan policies contained within the two cited documents will be relevant to this Application and notes that some are referenced within other Chapters of the Scoping Report.</p> <p>However, the Scoping Report does not make any reference to the current review of NSDCs Amended Allocations & Development Management Development Plan Document (ADMDPD) which is currently underway with the representation period on the Second Publication document having closed on 06.11.2023. The current timetable and process for the review of the ADMDPD is set out within our Local Development Scheme - July 2023 (PDF File, 274kb). It envisages submission to the Secretary of State in December 2023. Consequently, it is expected that the draft amended ADMDPD is likely to be at an advanced stage by the time an application for the DCO is made and may even be adopted prior to the consideration of this NSIP application. It should therefore be taken into consideration within the ES.</p>
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<p>Chapter 5 Pg. 40-49</p>	<p>Approach to EIA</p>	<p><u>Consultation</u> Consultation should include Parish Councils for whom the development falls within or adjoins their respective Parish. For example, it is noted that the list at para. 5.14 does not reference the Parishes of Thorney, Spalford or Harby. Consultation should also include Ward members whose Ward will be affected by the development.</p> <p><u>Cumulative Effects</u> The ES should set out how projects included in the assessment are identified and these should be agreed with the local authorities. The assessments should consider all relevant types of development (including other NSIPs) and not be limited to solar farm projects. The ES should consider whether regional scale likely significant effects could occur with other large scale solar projects e.g., arising from changes in land use and disposal of waste.</p> <p>Para. 5.32 references a 5km search area to be used for the cumulative impact assessment. No information is given as to how this search area has been derived. In the event that this search area is determined to be reasonable, NSDC would request that this search area relates to the whole development.</p> <p>The structure of the ES should make it clear whether an assessment of cumulative effects will be on a topic-by-topic basis, or a standalone chapter.</p> <p><u>Other Comments</u> The Applicant’s proposed methodology would appear to accord with general practice.</p>
<p>Chapter 6 Pg. 50-65</p>	<p>Biodiversity</p>	<p><u>Likely Significant Effects Scoped Out from Detailed Assessment</u> <i>Table 6-2: Likely Significant Effects Scoped out from the Biodiversity Detailed Assessment</i></p> <p>Construction and Decommissioning Emissions: In the absence of information to in relation to traffic movements NSDC considers it to be premature to scope out potential effects from traffic and construction plant during the construction and decommissioning phases. The ES should provide information on trip generation, traffic routing and distances from receptors including any measures that are to be secured to</p>

		<p>avoid or reduce likely significant effects.</p> <p>Electro-magnetic Fields (EMF): It is noted that reference here is only made to buried cables despite the proposed cabling design and routing having yet to be determined.</p> <p><u>Other Comments</u> NSDC notes there is no reference to provision of an Arboricultural Impact Assessment within the Scoping Report. NSDC consider the ES should identify any trees (including protected, ancient, veteran trees or woodlands) which may be affected by the Proposed Development and assess any likely significant effects.</p> <p>Para. 6.26 refers to the Development providing opportunities for delivering Biodiversity Net Gain (measured using Natural England’s Biodiversity Metric 4.0). NSDC considers the ES should distinguish between measures intended to avoid or reduce the potential for likely significant effects and those which have been identified for enhancement only.</p> <p><u>Comments from the Council’s Ecologist</u> <i>“Table 6-1: Ecological Features, Zol and Information Sources</i> <i>Legally protected and notable species – bats and aquatic mammals (otter and water vole) & Legally protected and notable species – all other species (Page 53).</i> <i>In addition to the identified Data Sources, useful ecological information is sometimes available in supporting documentation submitted as part of other planning applications. This is often not captured within local record centre datasets or has a relatively long lead-in time before being included. If such information exists, this might get captured as part of the EIA process to consider cumulative effects. However, many projects that might contain this information are likely to be screened out as being cumulative schemes.</i> <i>Whilst not suggesting that it should be a requirement of the ecological assessment to consider these as other potential sources of information, the assessment may wish to include some review of submitted planning applications within or immediately adjacent to the proposed application site, which are not included in the cumulative schemes list.</i></p>
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	<p><u>Extended Phase 1 Habitat Survey and Habitat Condition Assessment (para. 6.6)</u> <i>Despite the heading title, there is no detail regarding Habitat Condition Assessment. This should be completed using the published Statutory Biodiversity Metric Condition Assessments¹. The assessments should be undertaken at an appropriate time of the year for the specific habitat types, to enable accurate assessment of the relevant condition assessment criteria.</i></p> <p><u>Bat Surveys (para. 6.10)</u> <i>I am concerned that the Site has been determined to have ‘Low’ suitability for bats. This initial assessment is important in terms of determining a proportionate survey effort for bat activity surveys.</i></p> <p><i>Paragraph 2.6 of the Scoping Report describes the Site as “...predominantly arable agricultural land and includes a network of hedgerows, drains and ditches, and blocks of woodland.” I consider this represents a landscape type likely to be used extensively by bats for foraging and commuting.</i></p> <p><i>The River Trent, which bisects the Site, is likely to form an important foraging and commuting linear feature for the local bat assemblage. That part of the Site that falls on the east side of the river corridor is formed by a network of agricultural fields bounded by hedgerows, with this hedgerow network providing good connectivity to a series of blocks of existing woodland running along the east boundary of the Site. Consequently, if considered against the guidelines that were appropriate at the time of determining the proposed survey effort, I would have expected this eastern side of the Site to be of ‘Moderate’ to ‘High’ suitability for commuting and foraging bats. Similarly, there are likely to be other, more localised areas of similar level of suitability.</i></p> <p><i>Acknowledging that the proposal will retain the existing hedgerow network with any losses restricted to minor removals for access points, and the need for survey effort to be proportional, I would agree that surveys of every field across the Site would be</i></p>
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¹ [https://assets.publishing.service.gov.uk/media/6565d39762180b000dce82e0/Statutory Biodiversity Metric Condition Assessments.xlsx](https://assets.publishing.service.gov.uk/media/6565d39762180b000dce82e0/Statutory_Biodiversity_Metric_Condition_Assessments.xlsx)

	<p><i>disproportionate. However, I consider it likely that rather than applying a blanket 'Low' suitability across the Site, it could have been broken down to include localised areas of 'Moderate' and 'High' suitability which should then have been subjected to monthly sampling surveys, particularly for the east side of the Site.</i></p> <p><i>In the absence of additional survey work to address this comment, I consider it is likely when the Environmental Statement has been prepared, that it will be my view that insufficient survey effort has been undertaken for bat activity to form a reliable baseline, and subsequent assessment of effects for this species group.</i></p> <p><u><i>Riparian Mammal Survey (Otter and Water Vole) (para. 6.12)</i></u></p> <p><i>It is noted that surveys for riparian mammals appear to have been restricted to searches for the signs of activity for water vole and otter, rather than specific surveys for these species, utilising the survey methodologies and survey effort that are outlined in the two referenced documents.</i></p> <p><i>However, this appears to be addressed in para. 6.25, which notes that further survey work for water vole and otter are to be undertaken in 2024. I consider this additional survey effort is required to determine a reliable baseline for these species.</i></p> <p><u><i>Common Reptiles (para. 6.14)</i></u></p> <p><i>Given the presence of the River Trent corridor and a network of drains and ditches, I would have expected grass snake to be more likely present within the Site than common lizard and slow worm which have been specifically mentioned. However, I note that in para. 6.17 there is an indication that some ditches are dry, but also that there is a network of wet ditches and standing open water habitat (para. 6.20).</i></p> <p><i>Whilst acknowledging that habitat features likely to be utilised by grass snake will likely be mostly retained, and there would be opportunities to enhance habitats for this species, this is a Species of Principal Importance as listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Also, there are specific selection criteria within the Nottinghamshire Local Wildlife Selection guidelines for reptiles which require survey data. Therefore, I consider that there should be some</i></p>
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		<p><i>assessment via targeted survey work for reptiles, particularly grass snake.</i></p> <p><i>In the absence of additional survey work to address this comment, I consider it is likely when the Environmental Statement has been prepared, that it will be my view that insufficient survey effort has been undertaken for reptiles to form a reliable baseline, and subsequent assessment of effects for this species group.</i></p> <p><u><i>Environmental Measures (para. 6.26-6.31)</i></u> <i>The Government’s current timetable is for mandatory Biodiversity Net Gain (BNG) to be implemented for Nationally Significant Infrastructure Projects (NSIP) in 2025. However, the proposed scheme is intending to provide a BNG assessment that demonstrates at least a 10% net gain. This approach is welcomed and supported.</i></p> <p><i>At the time of writing the draft secondary legislation required to enable mandatory BNG for development proposals that are not an NSIP development have just been published and will be laid before Parliament shortly. Also, supporting guidance documentation has also just been published, but some in draft format.</i></p> <p><i>Para. 6.26 indicates that the BNG assessment will utilise the Natural England Biodiversity Metric 4.0. Since the scoping report was prepared, there is now a Statutory Biodiversity Metric and associated publications². I consider that the BNG assessment should utilise the Statutory Biodiversity Metric and follow the principles and processes associated with the legislation for mandatory BNG for non-NSIP developments, if at the time of the assessment the proposed development is not bound by specific BNG legislation for NSIPs.</i></p> <p><u><i>Scope of Assessment</i></u> <u><i>Important Receptors Identified</i></u> <i>Based on the comments I have made regarding reptiles; it might be subsequently concluded that reptiles should be included on the list.</i></p>
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² [Statutory biodiversity metric tools and guides - GOV.UK](https://www.gov.uk/guidance/statutory-biodiversity-metric-tools-and-guides)

		<p><u>Methodology proposed to Undertake Detailed Assessment</u> <u>Further Baseline Data</u> <i>Based on comments made above, I consider that additional survey work for bat activity and reptiles is required.</i></p> <p><u>Approach to Ecological Impact Assessment</u> <i>Where appropriate, I consider that use should be made of the Nottinghamshire Local Wildlife Site (LWS) Handbook as part of the assessment process to determine importance.”</i></p> <p><u>Comments from the Council’s Tree Officer</u> NSDC would expect to see a plan demonstrating where any TPO, veteran and ancient trees/woodlands are located within the site and that consideration is given to suitable working distances within proximity to trees. Consideration should also be given to any important hedgerows as defined under the Ancient Hedgerow Act 1997.</p>
<p>Chapter 7 Pg. 66-81</p>	<p>Hydrology and Hydrogeology</p>	<p><u>Flood Risk</u> Para. 7.11 states that <i>“The EA Flood Risk from Surface Water mapping indicates the majority of the Site is at very low risk of flooding from fluvial sources [...]”</i>. NSDC would query whether this statement is correct as surface water relates to pluvial flooding and para. 7.6 explains that the Site is at a medium-high risk of flooding from tidal and fluvial sources.</p> <p><u>Likely Significant Effects Scoped into the Detailed Assessment</u> NSDC would highlight that the effect that the proposed development could have on the hydrogeology and groundwater flows (para. 7.28) should consider the proposed worst-case scenario for the foundations of the solar modules (for example, whether steel poles will be driven into the ground). NSDC considers the ES should include the cumulative impact of the proposed foundations across the entirety of the developable area and the potential effect on the drainage patterns within the site and the study area.</p> <p><u>Other Comments</u></p>

		<p>NSDC considers the ES should include a Flood Risk Assessment based on the requirements of the Environment Agency’s standing advice (acknowledged at para. 7.30). This should include a description of how the Proposed Development satisfies the requirements of the sequential and exception test, where relevant, and the interplay with the consideration of alternative sites. The FRA should demonstrate the Proposed Development including flood suitable mitigation measures and flood resilient construction that will allow the development to remain operational for its intended lifespan (noting previous queries made in relation to whether the intention is for the Development to be time limited). This includes confirming that all the flood sensitive equipment associated with the Proposed Development would remain operational during flood events.</p> <p>Furthermore, the FRA should consider the surface water drainage/flood risk impacts that may occur off site and the potential of increased flood risk beyond the site boundary (including where this could impact nearby residential receptors). This should include consideration of the potential for the solar installation to increase the rate of runoff from the Site.</p>
<p>Chapter 8 Pg. 82-89</p>	<p>Land and Soils</p>	<p>NSDC does not presently have in-house expertise to cover this topic area but expects to commission a consultant to advise on this matter.</p> <p><u>Approach to Collection of Baseline Data</u> NSDC notes that the baseline Agricultural Land Classification (ALC) has been established by reference to the Provisional ALC Map of England and ALC Grades – Post 1988 Survey (para. 8.3) and not based on any ALC surveys undertaken on the Site. An important consideration will be whether the site contains land classified as Best and Most Versatile (BMV) agricultural land and NSDC notes the intention at para. 8.21 for a detailed ALC survey to be undertaken prior to production of the ES.</p> <p><u>Other Comments</u> NSDC notes that no mention is made to the potential for cumulative agricultural land</p>

		effects within this chapter and considers that this should be included within the scope of the ES given the proximity of this site to other NSIP projects in the vicinity ³ and potential for cumulative agricultural land effects through the removal of land from arable production.
Chapter 9 Pg. 90-95	Buried Heritage	<p>NSDC does not have in-house expertise to cover this topic area but has a contract in place with Lincolnshire County Council’s Archaeologist who we understand has been consulted separately on this Scoping Report.</p> <p><u>Methodology proposed to Undertake Detailed Assessment</u> Construction: Para. 9.21 appears to suggest that intrusive investigations would be carried out post-consent in advance of construction rather than informing the ES. However, without sufficient information on the presence, character, date and significance of deposits, there cannot be a robust assessment of impact or development of a mitigation strategy and NSDC therefore resists this proposal.</p>
Chapter 10 Pg. 96-107	Cultural Heritage	<p><u>Baseline Conditions</u> <u>Approach to Collection of Baseline Data</u> NSDC would draw attention to our Non-Designated Heritage Assets: Criteria (March 2022) document which should be considered within this Chapter (para. 10.3).</p> <p>NSDC notes the intention for a study area of 2km proposed for built heritage assets, within which non-designated heritage assets (NDHAs) are proposed to be considered within a 1km radius only with a selective approach taken beyond this. NSDC agrees with this approach.</p> <p>In relation to para. 10.14 NSDC would draw attention to the Conservation Officers comments provided below which identifies buildings that NSDC has reviewed as being potential NDHAs within the study area which should be considered within the ES.</p>

³ Great North Road Solar Park, West Burton Solar Project, Gate Burton Energy Park, Cottam Solar Project

	<p><u>Scope of Assessment</u></p> <p><u>Important Receptors Identified</u></p> <p>In reference to para. 10.18, NSDC would encourage consideration of the group value between North and South Clifton via the connecting road and intermediary assets that includes the Listed Church and School as a potential NDHA. We would also encourage consideration of the NDHA Station at North Clifton (particularly given its position on the former railway track now used as a footway).</p> <p><u>Methodology proposed to Undertake Detailed Assessment</u></p> <p>NSDC notes the intention to agree a shortlist of assets requiring full detailed assessment and a selection of viewpoints for heritage-focussed photomontages to support the understanding of potential effects with the Authorities Conservation Officers and Historic England (para. 10.27).</p> <p><u>Comments from the Council’s Conservation Officer</u></p> <p><i>“The masterplan covers several authority areas comprising Bassetlaw, West Lindsey and Newark. The part that impacts us is the south-eastern portion that includes North and South Clifton, as well as Thorney. The River Trent corridor is a broadly low-lying flat area with only limited undulating landscape areas further to the east of the river. North and South Clifton contain a number of heritage assets and are linked by a road that has some shared amenities such as the church and school. The river is an important feature with remnants of our industrial past that have some heritage value. Given the rural character of the area, there are a number of isolated features with potential heritage value.</i></p> <p><i>In the cultural heritage section of the submitted report, it is anticipated that a 2km study area will be utilised for built heritage assets, and 1km for NDHA with a selective approach for things beyond this radius. We are happy with this approach. In terms of designated heritage assets, these appear to have been correctly identified insofar as NSDC sites is concerned. In terms of NDHAs, we can see that the Notts HER has been used to highlight potential assets such as local interest buildings, unregistered parks and gardens and archaeology. We would like to draw attention to our recently adopted Criteria document for assessing NDHAs and the status of our draft Local List.</i></p>
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	<p><i>Essentially, the Conservation Team has been given delegated authority to survey the District and create a new Draft List of NDHA to be submitted to Members for potential adoption at the end of the process (estimated to be 3 years). Limited weight can only be given therefore to identified NDHAs through this process. The only buildings I am aware of that are not on the HER but have been reviewed as being a potential NDHA within the study area are North Clifton Primary School and North Clifton Station. In addition, we have had a submission to include remnants of the Marnham ferry docks as potential NDHAs. These have not yet been reviewed. Wigsley air tower has been identified as a NDHA, but sits at the fringe of the 2km zone, and it is accepted that impact is not likely to break the threshold for assessment outlined above (albeit, it does have some landmark qualities owing to its form and position within the former airfield).</i></p> <p><i>We are content with the approach to receptors. We would encourage consideration of the group value between North and South Clifton via the connecting road and intermediary assets that includes the listed church and school as a potential NDHA. We would also encourage consideration of the NDHA station at North Clifton (particularly given its position on the former railway track now used as a footway).</i></p> <p><i>We have no objection to the suggested scoping out outlined in para 10.21-23.</i></p> <p><i>Archaeology is clearly an important consideration and we defer to our specialist. However, we would remind decision-makers that in some cases there are intrinsic relationships between sensitive historic environments, including those encapsulated in conservation areas and/or in medieval historic cores (typically around churches/manorial areas) with archaeological interest of a NDHA nature. It is accepted, as outlined in the methodology, that individually these NDHAs are not likely to be impacted due to their limited significance. It is possible, however, that such features resonate with important designated heritage assets. Potential examples of this include the earthworks to the east of Hall Farm in North Clifton. Similarly, the relationship between NDHAs can be an important factor in their identification (as explained in our Criteria document). There is a connection for example between the Fledborough Viaduct and North Clifton Station. However, I do not think this contradicts the</i></p>
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		<i>assumptions made in the proposed methodology and limits of the scoping.”</i>
Chapter 11 Pg. 108-123	Landscape and Visual	<p><u>Introduction</u> NSDC does not presently have in-house expertise to cover this topic area but expects to commission a consultant to advise on this matter. However, it is noted that the LVIA will follow Guidelines for Landscape and Visual Impact Assessment, Third Edition, 2013 (GLVIA3) (para. 11.3).</p> <p><u>Local Planning Policy</u> NSDC would highlight its previous comments in relation to the Draft ADMDPD. In addition to the policies cited in the Scoping Report is also considered that the following policies are of relevance: Core Policy 9 of the Amended Core Strategy (2019) and Policies DM4 and DM5 of the ADMDPD (2013). NSDC’s Landscape Character Assessment Supplementary Planning Document (2013) should also be considered.</p> <p><u>Baseline Conditions</u> Para. 11.7 explains a preliminary LVIA study area of 2km from the Site boundary. NSDC considers this to be comparatively small to other local NSIP projects and their ES’ and therefore would raise concerns as to the adequacy of this study area. NSDC note that the local landscape is relatively flat with low levels of vegetation cover and considers the study area should be informed by a Zone of Theoretical Visibility (ZTV) and in consultation with the local authorities.</p> <p><u>Scope of Assessment</u> <u>Important Receptors Identified</u> <i>Table 11-1 Landscape and Visual Receptors to be Scoped In</i> Residents of villages: NSDC considers the residents of the village of Harby should be considered as a visual receptor. NSDC also agrees that representative viewpoints should be agreed with the local authorities.</p> <p><u>Likely Significant Effects Scoped Out from Detailed Assessment</u> <i>Table 11-2: Likely Significant Effects Scoped out from the Landscape and Visual</i></p>

		<p><u>Detailed Assessment</u> Lighting: NSDC considers that whilst the site is not within an identified ‘dark skies’ location, given the scale of the site and the unknown extent and type of external lighting at this stage, a quantitative lighting assessment considering sky glare and glow should be scoped-in to the LVIA for all stages of the Development and not reserved for consideration solely in the Construction Environmental Management Plan and Demolition Environmental Management Plan.</p> <p><u>Methodology proposed to Undertake Detailed Assessment</u> NSDC notes the intention to agree the visual receptors who have the potential to be impacted by the Development and the locations of viewpoints to represent these views (para. 11.48) – the Authority is in the process of appointing a Landscape Consultant and it is requested that the Applicant continue to liaise with the Authority on this matter.</p> <p><u>Assessment methodology for Construction, Operation and Decommissioning</u> NSDC agrees this a Residential Visual Amenity Assessment should be undertaken in the event that the visual assessment identifies major adverse effects on residents at year 15 of operation (para. 11.54).</p> <p><u>Assumptions, Limitations and Uncertainties</u> The applicant should use all endeavours to visit any residential properties potentially affected and not solely rely upon aerial photography and fieldwork observations (para. 11.55).</p>
<p>Chapter 12 Pg. 124-132</p>	<p>Transport and Access</p>	<p><u>Likely Significant Effects Scoped Out from Detailed Assessment</u> NSDC notes the low movements that would be generated through the operations phase and does not object to this being scoped out (para. 12.20). However, the ES description of development should still evidence the likely operational traffic movements to demonstrate that transport effects will not be significant.</p> <p><u>Likely Significant Effects Scoped into the Detailed Assessment</u> NSDC notes that the potential interaction between construction traffic and the Public</p>

		<p>Rights of Way within the site is not included into this section (para. 12.21), however the Authority considers the ES should include this information to enable this matter to be scoped out of the assessment.</p> <p><u>Other Comments</u></p> <p>It is noted that there is no reference made to an assessment of the potential cumulative transport impacts of this Development with other Developments in the local area. This should be scoped into the assessment.</p>
<p>Chapter 13 Pg. 133-144</p>	<p>Air Quality</p>	<p><u>Likely Significant Effects Scoped Out from Detailed Assessment</u></p> <p><i>Table 13-3: Likely Significant Effects Scoped out from the Air Quality Detailed Assessment</i></p> <p>Operational Effects: NSDC agrees that operational vehicle emissions can be scoped out from further assessment, subject to the description of development demonstrating that vehicle numbers are sufficiently low as to not trigger the thresholds for an air quality assessment.</p> <p><u>Comments from the Council’s Environmental Health Technical Officer</u></p> <p><i>“I have now had the opportunity to review the Air Quality chapter (13) of the Scoping Report (November 2023) submitted in support of this proposal. This describes the approach that will be taken and factors which will be considered as part of the detailed air quality assessment that is proposed. Some factors have been scoped out of the assessment using appropriate guidance and the report has identified those matters which require further detailed assessment using ADMS Roads dispersion modelling. I can broadly agree with the methodology and breadth of the proposed detailed assessment.”</i></p>
<p>Chapter 14 Pg. 145-151</p>	<p>Carbon and Climate Change</p>	<p><u>Likely Significant Effects Scoped into the Detailed Assessment</u></p> <p>NSDC considers an assessment of the impact of the Proposed Development and future climate change in relation to flood risk should be scoped into the ES. The Site is located adjacent to the River Trent which is tidal in this location. Significant effects are likely to occur in that flooding risk will be increased from climate change during the lifetime of the development. It is therefore suggested that an assessment of sea level rise in</p>

		climate change resilience review should be scoped-in to the ES.
<p>Chapter 15 Pg. 152-163</p>	<p>Noise and Vibration</p>	<p><u>Likely Significant Effects Scoped Out from Detailed Assessment</u> <i>Table 15-1: Likely Significant Effects Scoped out from the Noise and Vibration Detailed Assessment</i></p> <p>On Site Construction and Decommissioning Traffic: In the absence of information to in relation to traffic movements NSDC considers it to be premature to scope out potential effects from vibration from traffic movements during construction and decommissioning. The ES should provide information on trip generation, traffic routing, noise emissions and distances from receptors including any measures that are to be secured to avoid or reduce likely significant effects.</p> <p>Operational Traffic: The Scoping Report anticipates minimal numbers of road traffic movements during the operational phase. NSDC agrees that this matter could be scoped-out, however the ES description of development should confirm the anticipated trip generation during operation to justify this.</p> <p>Solar PV Arrays: Given the type of panels proposed has not been set the ES should include an assessment of noise generated by tracking panels and its potential impact on residential and ecological receptors.</p> <p><u>Comments from the Council’s Environmental Health Officer</u> <i>“Operational Noise: At present, exact details of the proposal are not known, including the layout of the development and the number, specification and positioning of the above potentially noisy plant. As such, it is not possible to comment in detail in relation to noise. However, I am aware that some modelling of exiting noise levels arising from road traffic has been undertaken, and that background noise monitoring is proposed in several locations within the development area. Given the size of the development area, it is likely that plant can be accommodated in areas distant from residential receptors which may be affected by noise.</i></p> <p><i>I would therefore suggest that noise disturbance is taken into account when designing</i></p>

		<p><i>the scheme, and that an assessment of noise at the nearest receptors be submitted with any forthcoming application.</i></p> <p><i>Construction Noise: It is likely that construction of the solar farm will require the creation of access roads and plant areas, as well as the installation of the solar panels and cable connections. Given the scale of the proposal, this is likely to take place over a prolonged period. I would therefore recommend a Construction Management Plan be submitted with the application, taking into account hours of operation, vehicle routing, etc.”</i></p>
<p>Chapter 16 Pg. 164-182</p>	<p>Human Health</p>	<p><u>Likely Significant Effects Scoped into the Detailed Assessment</u> <i>Table 16-3 Consideration of Wider Determinants of Health to be Scoped In</i> Health related behaviours - Physical activity [...]: NSDC agrees that this is an important consideration but notes reference is only made to ‘<i>physical health</i>’ and does not include mental health as a wider determinant. NSDC considers the recreational value and enjoyment of the Public Right of Way network should be scoped-in to the ES.</p>
<p>Chapter 17 Pg. 183-189</p>	<p>Socio-Economics</p>	<p><u>Likely Significant Effects Scoped into the Detailed Assessment</u> The Development is proposed on areas of agricultural land. Consequently, the ES should consider the socio-economic effects of the loss of productive agricultural land, including the potential for displacement of tenant farmers.</p>
<p>Chapter 18 Pg. 190-193</p>	<p>Environmental Topics Scoped Out</p>	<p><u>Table 18-1: Technical Aspects Scoped Out</u> <u>Glint and Glare</u> Given the scale of the Site and the fact that the design parameters of the Proposed Development are not set NSDC does not agree that the potential for significant effects from Glint and Glare should be scoped-out of the ES. The Glint and Glare Assessment should assess a worst-case scenario, which at present includes the consideration of tracking and stationary panels, and the conclusions of the assessment should inform the LVIA.</p> <p>The Council’s Environmental Health Officer has also provided the following comments: <i>Glint and Glare Assessment: A glint and glare assessment should be carried out to:</i></p>

		<ul style="list-style-type: none"> • <i>Determine the locations, numbers and orientations of the solar panels.</i> • <i>Identify local areas that could be affected by glint or glare from the panels throughout the year.</i> • <i>Identify geographical and vegetation features that might shield sensitive locations from glint and glare.</i> • <i>Provide recommendations for mitigating measures that would reduce or eliminate the effects of glint and glare.”</i> <p><u>Risk of Major Accidents and Disasters</u> Whilst it is not proposed to have a standalone chapter, NSDC considers that the risk of battery fire/explosion should be addressed in the ES, including where any measures designed to minimise impacts on the environment in the event of such an occurrence are proposed.</p> <p><u>Waste</u> NSDC notes the initial reference within the Scoping Report to the Applicant not seeking a time limited consent and has queried whether the Development should therefore be assessed as a permanent proposal. It is understood that solar developments are typically considered to be 30 to 40 year developments with panel degradation cited as a limiting factor on project lifespan. On this basis, some panels may need to be replaced during the operational life of the Development. The Scoping Report states that waste during construction would be recycled where practicable however does not address the potential for component replacement during operation. Irrespective of whether a time-limit is stated for the Development the ES should include an assessment of the likely impact of component replacement (e.g., batteries and panels) and outline what measures, if any, are in place to ensure that these components are able to be diverted from the waste chain.</p> <p>NSDC considers the ES should also assess the likely significant effects from waste at decommissioning to the extent possible at this time. The Scoping Report does not refer to provision of a Decommissioning Plan (only a Site Waste Management Plan during enabling and construction works), however NSDC would expect to see an Outline Decommissioning Plan or similar with the Application. The ES should also clearly set</p>
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		out how decommissioning is to be assessed and any components which may remain following decommissioning.
	NSDC Summary	Subject to the comments above, NSDC is generally in agreement with the proposed scope of the ES.

Please consider the comments made above to constitute Newark & Sherwood District Council's formal consultation response under regulation 10(6) of the EIA Regulations.

Yours faithfully,



Honor Whitfield MRTPI MSc
Planner, Planning Development Business Unit
On behalf of Newark & Sherwood District Council

From: [Honor Whitfield](#)
To: [One Earth Solar](#)
Subject: RE: EN010159: Newark & Sherwood District Council Scoping Consultation Response
Date: 11 December 2023 16:10:06
Attachments: [image001.png](#)
[LLFA Comments 23-02003-CONSUL.pdf](#)
[N-23-02003-CONSUL.pdf](#)

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OFFICIAL

OFFICIAL

Good afternoon,

Please also find attached consultation comments NSDC has received today from Notts County Council as the LLFA and the Highway Authority.

Many thanks,

Honor Whitfield MRTPI MSc

Planner

Planning Development Business Unit

Newark and Sherwood District Council

Tel: [REDACTED]

Email: [REDACTED]

www.newark-sherwooddc.gov.uk

Please note that any advice is given at officer level only and will not prejudice any future decision made by the Council.



This matter is being dealt with by:

Ross Marshall

T
E



Planning ref:
23/02003/CONSUL
Consultation received:
22/11/23

Mr Matt Lamb
Director of Growth and Regeneration
Newark and Sherwood District Council
Castle House
Great North Road
Newark
NG24 1BY

11 December 2023

Dear Mr Lamb

PROPOSAL: Development Consent for the One Earth Solar Project - Scoping Consultation

To view the documents, please follow the link;

<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010159/EN010159-000005-One%20Earth%20-%20Scoping%20Report.pdf>

LOCATION: One Earth Solar Project,

Nottinghamshire County Council as the Lead Local Flood Authority (LLFA) has reviewed the pre-app advice application which was received on the 22 Nov 2023.

As no specific information has been submitted with regards to drainage for this pre-app enquiry, we have made some general comments on the information that we would expect see when the application is submitted for planning approval.

Given the proposed scale of the development to satisfy the National Planning Policy Framework (NPPF) further details would need to be submitted to support this application. Paragraph 163 fn.50 of the NPPF requires that applications in Flood Zone 2, 3 and in Flood Zone 1 over 1 hectare should be accompanied by a site-specific flood risk assessment, reviewing the potential flood risks to the development from all sources. An FRA is vital if the local planning authority is to make an informed planning decision.

As LLFA we also require details of the proposed surface water drainage strategy for the development. Paragraph 165 of the NPPF states that major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate. The LLFA expect that any proposed drainage strategy is in accordance with CIRIA C753 and current best practice guidance. Any FRA or drainage strategy should include following information:

- An assessment of the nature of SuDS proposed to be used and demonstration that design is in accordance with CIRIA C753 and NPPF Paragraph 169.
- Details of a proven outfall from site in accordance with the drainage hierarchy. The following options should be considered in order of preference:
 - Infiltration
 - Discharge to watercourse

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Nottinghamshire County Council, County Hall, West Bridgford, Nottingham NG2 7QP

- Discharge to surface water sewer
- Discharge to combined sewer
- Justification for the use or not of infiltration, including the results of soakaway testing, in accordance with BRE 365.
- Evidence the maximum discharge is set to the QBar Greenfield run-off rate for the positively drained area of development.
- Demonstrate the site drainage system should cater for all rainfall events up to and including the 1 in 100-year event including a 40% allowance for climate change.
- Provide details for exceedance flows; surface water should be contained within the site boundary without flooding any properties in a 1 in 100 year plus 40% climate change storm.
- Evidence to demonstrate the viability (e.g Condition, Capacity and positive onward connection) of any receiving watercourse to accept and convey all surface water from the site.
- Details of STW approval for connections to existing network and any adoption of site drainage infrastructure.
- Evidence of approval for drainage infrastructure crossing third party land where applicable.
- A surface water management plan demonstrating how surface water flows will be managed during construction to ensure no increase in flood risk off site.
- Evidence of how the on-site surface water drainage systems shall be maintained and managed after completion and for the lifetime of the development to ensure long term effectiveness, and the party responsible for this.

This is only a brief outline of the minimum information we would be expecting to see and not an exhaustive list.

Informative

1. SuDS involve a range of techniques and SuDS methods can be implemented on all sites. SuDS are a requirement for all major development as set out within paragraph 165 of the NPPF.
2. The LLFA does not consider oversized pipes or box culverts as sustainable drainage. Should infiltration not be feasible at the site, alternative sustainable drainage should be used, with a preference for above ground solutions.
3. Surface water run-off should be controlled as near to its source as possible through a sustainable drainage approach to surface water management. Sustainable Drainage Systems (SuDS) are an approach to managing surface water run-off which seeks to mimic natural drainage systems and retain water on-site as opposed to traditional drainage approaches which involve piping water off-site as quickly as possible.

Yours sincerely

Ross Marshall

Ross Marshall
Principal Flood Risk Management Officer
Nottinghamshire County Council
Please ensure any consultations are sent to flood.team@nottscc.gov.uk

TOWN AND COUNTRY PLANNING ACT

HIGHWAY REPORT ON PROPOSALS FOR DEVELOPMENT

DISTRICT:	Newark	Date received	22/11/2023
OFFICER:	Honor Whitfield		
PROPOSAL:	Development Consent for the One Earth Solar Project - Scoping Consultation	D.C. No.	N/23/02003/CONSUL
LOCATION:	One Earth Solar Project		
APPLICANT:	One Earth Solar Farm Ltd		

The approach of the scope set out appears to be in accordance with DMRB and DfT Guidance so the principle appears acceptable.

Specific details of the Transport Assessment should be agreed with the Highway Authority at a later date.

Please note that we are a direct consultee for this proposal so further formal consultation from the District Council will not be necessary (but we will be happy to make such consultation responses available if requested).

Sarah Hancock
Principal Officer – Highway Development Control

11th December 2023

From: Stephen Faulkner [REDACTED]
Sent: 15 November 2023 15:24
To: One Earth Solar oneearthsolar@planninginspectorate.gov.uk
Cc: Alice Craske alice.craske@norfolk.gov.uk
Subject: FW: EN010159 - One Earth Solar Farm - EIA Scoping Notification and Consultation

FAO Neva Johnson

Planning Inspectorate.

Thank you for your email below.

Given the location of the proposed development on the Nottinghamshire / Lincolnshire Border, I can confirm that Norfolk County Council does not have any cross-boundary comments / issues to raise at this stage.

Stephen Faulkner BA(Hons), MSc, DipTP, MRTPI Principal Planner - National Infrastructure Planning Lead Officer Strategy and Transformation

Norfolk County Council
Tel: [REDACTED]

From: [Nick Feltham](#)
To: [One Earth Solar](#)
Subject: 23/1341/NSIP (EN010159) - One Earth Solar Farm - EIA Scoping Notification and Consultation
Date: 13 November 2023 14:55:55
Attachments: [image474690.png](#)
[image342300.png](#)
[image968244.png](#)
[image453435.png](#)

Dear Sir, Madam

Thank you for consulting North Kesteven District Council in relation to the EIA Scoping Report for the One Earth Solar Farm Nationally Significant Infrastructure Project (NSIP).

The Council's comments are primarily in relation to section 5.3 'Cumulative Effects' onwards. Paragraph 5.32 states that;

'Details of the cumulative schemes to be considered within the detailed assessment will be identified based on information available on the local authorities planning registers and on PINS website and discussed during the consultation stages. The current criteria for inclusion in the study are as follows:

- > other projects within the local vicinity (at this stage assumed to be within 5km of the Proposed Development);
- > that have planning permission (or development consent) but are not yet built; or
- > schemes where a planning application (or DCO application) has been submitted but a decision not yet made; or
- > major projects likely to occur due to existing policy'

It is assumed that the applicant only intends to review cumulative effects in relation to other NSIP proposals within 5km of the site; which is not supported. The applicant is requested to consider cumulative land use and agricultural impacts (BMV land) alongside all currently registered/examined NSIP solar projects in Lincolnshire/Rutland; including within North Kesteven District namely Fosse Green, Springwell, Beacon Fen and Heckington Fen. The Lincolnshire Reservoir NSIP should also be included in this assessment, along with the recently registered Great North Road solar farm NSIP in Newark and Sherwood. The location of the site is such that we have no objection to cumulative effects in relation to other topic areas (including LVIA) being scoped out of the assessment.

We agree with paragraph 11.37/'Table 1 Landscape and Visual Receptors to be Scoped In' in that it proposes assessment of impact on users of the Sustrans cycle route 647. This route passes through into North Kesteven District beyond the eastern boundary of the proposed development and we consider that it should be assessed as having higher receptor significance and sensitivity by virtue of it being part of a longer distance national cycle route.

Regards
Nick Feltham

 Nick Feltham



Assistant Development Manager

Tel: [REDACTED]

Email: [REDACTED]

www.n-kesteven.gov.uk

Kesteven Street, Sleaford, NG34 7EF

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From: [Andrew Law](#)
To: [One Earth Solar](#)
Subject: EN010159 - Scoping Response NLC
Date: 07 December 2023 15:01:04

You don't often get email from andrew.law@northlincs.gov.uk. [Learn why this is important](#)

Good afternoon,

Thank you for giving North Lincolnshire Council the opportunity to comment on the Scoping Request in respect of the One Earth Solar Farm Project.

Having reviewed the Scoping Report and giving due regard to the location and nature of the proposed development I can confirm that North Lincolnshire Council have no comments to make in this instance.

Kind Regards

Andrew Law

Development Management Specialist | Development Management | Economy and Environment

@ [REDACTED]



North Lincolnshire Council, Church Square House, 30 – 40 High Street, Scunthorpe, DN15 6NL

This e-mail expresses the opinion of the author and is not necessarily the view of the Council. Please be aware that anything included in an e-mail may have to be disclosed under the Freedom of Information Act and cannot be regarded as confidential. This communication is intended for the address(es) only. Please notify the sender if received in error. All Email is monitored and recorded. Please think before you print- North Lincolnshire Council greening the workplace.

This matter is being dealt with by:

Stephen Pointer

Reference:

T

E planning.policy@nottscc.gov.uk

W nottinghamshire.gov.uk

The Planning Inspectorate
Environment Services Operations Group 3

Sent by email to
OneEarthSolar@planninginspectorate.gov.uk

11th December 2023

Dear Sir

ONE EARTH SOLAR PROJECT SCOPING CONSULTATION AND NOTIFICATION

I am writing to respond to your letter of 13 November concerning the above. Nottinghamshire County Council is responding to the Scoping Report as follows:

Highways

The Highway Authority (HA) has reviewed the content of the Environmental Impact Assessment (EIA) Scoping Report (SR) dated Nov 23 submitted by Logika Group Ltd on behalf of One Earth Solar Farm Ltd. The application comprises the construction and installation of solar panels, battery energy storage systems and associated grid connections to generate 740 MW of renewable energy/electricity across 1,500 hectares in Lincolnshire, Bassetlaw and Newark & Sherwood. Chapter 12 of the SR determines the extent of the traffic & transportation issues to be considered. The main areas considered are broad transport aspects, with limited detail provided.

A proposal of this magnitude will have significant impact on the existing transportation network mainly during the project's construction phase. Therefore, the HA will require a detailed Transport Assessment (TA) and supporting studies to assess the additional traffic demands and any required mitigation to the highway network. These should be prepared in accordance with current Planning Practice Policy, Nottinghamshire County Council's Design Guide and other industry accepted guidance on TA's. The HA will need to consider the detail of the transportation impacts once the planning application (s) is/(are) made and is likely to secure any necessary mitigation measures through planning condition and S106 obligations.

The TA should include the following details and information: -

1. The access strategy outlining design philosophy and the approach for the scale of development proposed using <https://www.nottinghamshire.gov.uk/transport/roads/highway-design-guide>

2. Note - baseline appraisal data, key analysis parameters and assessment methodology should be agreed with the HA before the full TA work is undertaken.
3. The TA should clearly define the proposed schemes in relation to the different LPA administrative boundaries i.e., Bassetlaw, Lincolnshire, and Newark & Sherwood.
4. The number, size and frequency of the vehicles that will be associated with the construction and completed – operational phases of the proposal.
5. The proposed routing of the construction vehicles from the principal highway network to the proposed sites, including vehicle tracking where necessary to show that the highway network can adequately accommodate construction vehicles access, egress and turning. This will require a Construction Traffic Management Plan (TMP) to be agreed with the HA. Contacts tro@viaem.co.uk abnormalloads@viaem.co.uk
6. Details of the proposed temporary/permanent access(s)/hardstanding in the site, including achievable visibility splays, access widths, finished gradients, surfacing materials and drainage measures. The layout plan(s) should show the proposed access and its interface with the existing public highway network. This must be a topographical plan, accurately showing all street furniture/posts/trees/assets at a minimum scale of 1:500. Access arrangements and proposed highway improvements will require independent Stage I Road Safety Audit (RSA) to be undertaken in accordance with HD 19/15.
7. Details of the proposed welfare compounds/parking/unloading/manoeuvring areas within the site during both the construction and operational phases by use of a comprehensive Construction Management Plan (CMP).
8. All temporary construction sites (expected to be mostly agricultural field) should include proactive measures to prevent deleterious construction material and mud being transferred to the public highway i.e., Wheel wash facilities.
9. The reports should include detailed long-term management strategies to mitigate any negative transport impacts of the development and where possible promote sustainable active movement.
10. The TA should include a chapter that deals with cable routing corridors and utility diversion/installation over/under the public highway for the National Grid connection. Especially, how the main connection of the solar power system will be established at High Marnham substation. The opportunity to share cabling infrastructure with the other solar panel schemes/utilities in the area should be explored.
11. All new cables in public highway need to be installed by a statutory undertaker and use of a Section 50 licence under the NRSW Act for installation by other companies is not acceptable. Contact licences@viaem.co.uk streetworks@viaem.co.uk
12. Some sensitive rural roads will require dilapidation surveys and road condition prior to and after heavy construction work has been undertaken.
13. The proposal must identify any minor public highways affected and their future treatment. This should include definitive/non-definitive rights of way such as public footpaths, public road, bridleway, BOAT or restricted bye way. Contact countryside.access@nottscc.gov.uk.

14. The area appears to contain a limited number of environmental weight limits, but the HA encourages early consultation to limited environmental annoyance to affected villages/residents and to ensure works programmes are not hindered. Contacts

15. Enquiries about adopted public highway records highwaysearches@viaem.co.uk

Please note this list is not exhaustive and the applicant will be expected to provide appropriate assessment information that reflects site conditions and its locality. Furthermore, the HA reserves its right to vary its assessment requirements and the amount of detail required depending on the outcomes of the iterative transport evaluation process.

Ecology

The County Council is satisfied with the proposed scope of survey and assessment as set out in the Scoping Report in terms of Biodiversity. However, we have the following comments:

- The Breeding Bird Survey is described as sampling five areas across the site, rather than providing full site coverage. We are not entirely comfortable with this approach, as it risks missing scarce/rare species which may be present only patchily in the landscape, e.g. Turtle Dove, Tree Sparrow, Corn Bunting. It also risks under-estimating the impact of the development on other breeding birds. However, it is difficult to comment further without knowing the size or location of the sample areas.
- Similarly, bat activity surveys are described as being based on three transect surveys and we would question whether this is sufficient given the size of the application site – but again, it is difficult to comment further without knowing the length or location of the transects (and static detector locations). Whilst it is noted that the site is generally considered to be of low suitability for bats, it is immediately adjacent to higher quality habitats including wetland and woodland, and I would draw the applicant's attention to recent research about the impact of solar PV sites on bats –Tinsley, E., Froidevaux, J. S. P., Zsebők, S., Szabadi, K. L., & Jones, G. (2023). Renewable energies and biodiversity: Impact of ground-mounted solar photovoltaic sites on bat activity. *Journal of Applied Ecology*, 60, 1752–1762. <https://doi.org/10.1111/1365-2664.14474>.

Local Flood matters

Having reviewed section 7 of the EIA Scoping Opinion report which has been submitted this appears to follow all the relevant policy and legislative guidelines and appropriately consider flood risk and drainage at this stage.

Due to the nature of the proposals these do not appear to seek to significantly increase the impermeable area of the site, and as such the LLFA would only like to comment that surface water runoff from the site should not be exacerbated. Any increased runoff from the site, such as from any hardstanding/small buildings, should be appropriately managed on site to prevent increasing runoff from the site and therefore prevent increasing the risk of flooding the surrounding area of the site.

Heritage and Archaeology

The One Earth Solar Park covers a significant area of eastern central Notts, an area which is regionally significant for its density of cropmarks and stretches across the Trent into Lincolnshire. Some of the cropmarks were recorded in the 1980's as part of the then English Heritage funded National Mapping Programme (NMP). We would be interested to know if the consultants have managed to obtain the data from HE, because without it they will inevitably underestimate the archaeological potential of the sands and gravels of the Trent Floodplain. It is not obvious from their recorded sources they have accessed this data directly. This link may be helpful; [Aerial Archaeology Mapping Explorer \(arcgis.com\)](http://arcgis.com)

"Aggregates and Archaeology in Nottinghamshire" (Knight and Spence, 2013) identified that there were at least 7.34 archaeological sites per km² on the sands and gravels, a figure which is now well out of date and consequently a present-day recalculation would be considerably higher. The proportionate response to evaluation methodologies which is mentioned needs to fully recognise the high potential of the area. Obviously, the various evaluations need to be undertaken as soon as possible and certainly before submission of the ES. I think the scope of evaluation needs to be widened considerably. We are seeing a significant number of solar farm developments arguing that there is no need to undertake significant predetermination archaeological evaluation because the damage to such remains is limited. There is NO evidence to back such a view up and a considerable body of evidence which argues to the contrary. This County will proceed on the basis of a worst damage case until we are successfully satisfied otherwise in each case.

The scoping document mentions that there are a significant number of earlier prehistoric sites in the area of the proposed scheme. It would be worth noting the internationally significant Late Upper Palaeolithic site on the Trent sands and gravels at Farndon, on a similar geology to much of the proposed development site. This was not located through DBA, geophysics and trial trenching, the standard evaluation techniques, but through fieldwalking. This difficulty also arises in identifying sites of Mesolithic, Neolithic and Bronze Age date, significant examples of all of which have been identified by the One Earth work so far. Consideration should be given to undertaking fieldwalking and metal detecting survey to locate the very many types of sites which are not conducive to being discovered through the standard evaluation techniques I have just noted, and which are the only ones currently proposed for this site. A reasonable rationale will be expected for not undertaking such surveys, which on current evidence would be difficult to sustain. We are currently developing policy for these major types of development which have an arguably less damaging effect than, for instance, mineral extraction. Our current view is that if insufficient evaluation is undertaken we should regard these developments as potentially on the same scale of potential destruction to archaeological remains as mineral extraction, and as such the recommendations of Knight and Spence 2013, p.41 should apply.

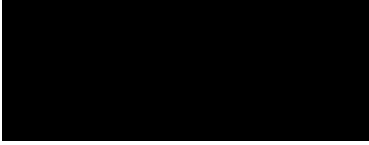
Consideration of Lidar data is noted. For a scheme of such a scale it might be worth commissioning new, high accuracy Lidar.

It was not clear from the cultural heritage section whether the decommissioning phase was scoped in or out of the ES. Clarification on this would be useful. It is our opinion that the less direct evaluation through ground truthing, by field evaluation, that is undertaken, the higher the risk of not locating archaeological sites, and the higher the potential risk to the significant loss of archaeological sites of unknown significance. Our developing policy, which it is planned will be adopted by the East Midlands Association of Local Government

Archaeological Officers, our professional regional body, is seeking a *minimum* of 3% trial trenching across the proposed development site in addition to the other methodologies previously mentioned.

I hope these responses are helpful.

Yours sincerely



Stephen Pointer MRTPI
Team Manager (Planning Policy) Nottinghamshire County Council



Telephone: 01733 453410 (9am - 1pm Mon, Wed, Fri)
Email: planningcontrol@peterborough.gov.uk
Case Officer: Mr A O Jones
Our Ref: 23/00951/CONSUL
Your Ref: EN010159

Mr Joseph Briody
Environmental Services
Operations Group 3
Temple Quay House
2 The Square
Bristol
BS1 6PN

Peterborough Direct: 

29 November 2023

Dear Mr Briody

Planning enquiry

Proposal: Application by One Earth Solar Farm Ltd (the Applicant) for an Order granting Development Consent for the One Earth Solar Farm (the Proposed Development)

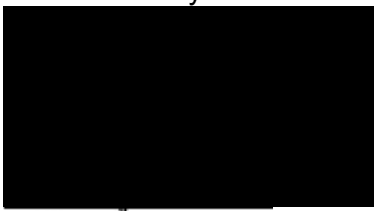
Site address: One Earth Solar

Further to your enquiry received on 13 November 2023, in respect of the above, the Local Planning Authority makes the following comments:

The proposal site is remote from the Peterborough area, and as such, we do not have any comments to make on this Scoping Opinion.

I trust that the above advice is of use however should you have any further queries, please do not hesitate to contact me on the details shown at the top of this letter.

Yours sincerely



Mr A O Jones
Principal Minerals and Waste Officer

From: [Robert Morrell](#)
To: [One Earth Solar](#)
Subject: Your Ref: EN010159
Date: 20 November 2023 11:21:56
Attachments: [image001.png](#)
[image003.png](#)

FAO: Joseph Briody

Dear Joseph

With regard to the above, I am writing to confirm that RMBC do not have any comments to make on this proposal due to the distance from our administrative boundary.

I trust the above information is of use to you.

Regards

**Rob Morrell BA (Hons) MSc
Assistant Development Manager
Development Management
Regeneration and Environment
Rotherham Metropolitan Borough Council**

Tel: [REDACTED]

Email: [REDACTED]

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From: [Andrew Waskett-Burt](#)
To: [One Earth Solar](#)
Subject: EN010159 - One Earth Solar Farm - EIA Scoping Notification and Consultation - Rutland County Council Response
Date: 11 December 2023 10:26:16

You don't often get email from aburt@rutland.gov.uk. [Learn why this is important](#)

Dear Neva,

Thank you for the opportunity to comment on the Scoping Opinion.

It would appear from going through the One Earth Solar Farm materials that the main topics will be covered, including heritage, flooding, landscaping, visual amenity, local wildlife sites and transport and access. Rutland County Council's only other comment at this time would be to underline the need for further survey work to accompany the Agricultural Land Classification system to establish the grade of the proposed sites, as the potential loss of agricultural land would appear to be significant.

Kind regards,

Andrew Waskett-Burt | Principal Planning Officer
Rutland County Council
Catmose, Oakham, Rutland LE15 6HP
T: [REDACTED]

Details regarding your data protection rights and how the Council processes your data can be found at: <http://www.rutland.gov.uk/my-council/data-protection>

If my email finds you outside of your normal working hours, please feel free to read, act on or respond at a time that works for you.

Thank you for the opportunity to provide you with the information that we consider should be included in the Environmental Statement submitted from OneEarthSolarFarm regarding this project. The council has unanimously objected to this proposed development because of its vast size and the impact that will have on the small villages it engulfs and the good farming land it will destroy.

Our environmental considerations can be summarised under three headings –

Environmental

Socio-Economic

Health and Well-being

Environmental Impacts

Water – the development spans the River Trent in an area prone to flooding. How can OneEarthSolarFarm ensure that the flooding of the land either side of the Trent is not made worse? What effects will the development have on the underground water system and the ability to pump water into the dykes and the river? Who will be responsible for this? What effect will the rain water, falling from the panels, have on the land, as it will always be falling on the same area, creating rivulets? Do OneEarthSolarFarm intend to consult with the Land Drainage Board and The Canals and Rivers Trust?

Land – we are very concerned about the degradation of good farming land and resultant effect on the soil over the span of the project (40years?). OneEarthSolarFarm have yet to dismantle an old project, how can they guarantee that the soil will be good enough to return to farming use? They intend to leave any underground ‘infrastructure’ in place – how can farmers farm safely with plastics/metal/copper under their land? We would like to know how many miles of underground cables, their exact make-up/sizes etc, where the underground cables will run, the nature of covering (hardcode or soil?) and how deep they will be situated? How much land will be lost to access roads, and how much top soil will be removed for the access roads and wherever else required? What long-term effects this will have on the land, as well as the insects and other creatures that live underground. Looking ahead, how can OneEarthSolarFarm ensure that our villages are not left surrounded by an industrial wasteland or a brownfield site?

What is the nature of the fund set aside for dismantling this site, how much will this be, who will be holding these funds and what happens in the event of this company going into liquidation? How long are the solar panels expected to last before needing replacing, and where will the old panels go to – what are the recycling options available to avoid land-filling the panels? How will the panels be cleaned, how often and what chemicals will be used?

We would like OneEarthSolarFarm to comment on the huge negative impact on our carbon footprint of producing and importing hundreds of solar panels and their associated infrastructure.

Biological/Wildlife – we live in an area rich in diverse wildlife. How can OneEarthSolarFarm guarantee that the transient animals (deer, hares, snakes and badgers particularly) will not be affected by this vast proposed site. The birds in the area are plentiful (Barn Owls, Tawny Owls, Little Owls, Kestrels, Peregrines as well as a huge variety of garden/hedgerow/waders and meadow birds), how can One Earth ensure that we do not lose this rich diversity and number of birds. Much of the site provides a stop-over point for migrating geese at the end and beginning of their migrating season – what will happen to the birds that normally rest here? We need proof (what academic studies have been done) that the birds are unaffected by the panels and battery/invertor sites (noise, proximity, mistaking them for water) and loss of habitat? We have a healthy bat population in the villages, how are they affected by the noise from the infrastructures?

Socio-Economic Environmental Impacts

Recreation – the area has many bridleways, cycle routes and footpaths that are well used, as well as the Stustrans 647 path linking Fledborough to Lincoln, the Trent Valley Trail and the (newly built) Trent Vale Trail. How will One Earth ensure complete access to these amenities that are used by the wider population, not just the locals, and also, prove that the numbers using these tracks and trails will not decrease?

Negative impact on farming/jobs - the council are concerned with the loss of specific, as well as diverse farming jobs/skills and expertise. How can OneEarthSolarFarm ensure that this does not happen, so that IF, on dismantling the solar farm after 40 years, the land is capable of supporting farming again, it can be used successfully for that purpose? What studies have one earth done on the jobs affected by this, how many farm-hand or contractor jobs will be lost?

Tourism – Our villages are within easy reach of historic Lincoln and Newark. We have many thriving B&Bs and small businesses that will be impacted by this development and stand to lose their income. We also feel no-one else will want to set up business in our area, meaning a loss of investment. The River Trent attracts anglers and boat clubs and is a popular route for boats from the Humber through to Newark. The council is sure the present users will not want to look out on fields of black panels. We want OneEarthSolarFarm to address these negative factors, citing how other developments have been affected and how they will address any negative impacts.

Economics – The council feel that no-one will want to move into an area that is surrounded by fields of solar panels a minimum of 2.7m tall and up to 3.8m tall. This will mean that house prices will drop as those residents wishing to sell their house, cannot do so, which could lead to depopulation of the villages, with the loss of young people and the closure of our school. There a number of family homes that will be very badly affected/surrounded by this site, what is the nature and size of buffer zones around these family homes and what compensation will these families receive for loss of property value? We want OneEarthSolarFarm to look at other solar farms of this size, surrounding populated land and report back on the problems above.

Heritage and Social Heritage – North and South Clifton share a beautiful 12th Century Church that has a long social history. The general area boasts a Victorian Viaduct, a Roman Fort, yet to be investigated Saxon settlements, many listed buildings and a conservation area. We want OneEarthSolarFarm to prove that their proposed development will not negatively impact these sites and other built and buried heritage within the area.

Health and Well-Being

Noise pollution – We have a recording of the noise/humming produced by the batteries and have been made aware of noise from other equipment used to produce, convert and store the electricity. Apart from affecting wildlife, this is bound to negatively affect the local population. What studies have OneEarthSolarFarm done on other solar farms regarding this problem and what results have they found regarding the effects on the health and mental well-being of the people near the installations? What is the nature/size/number of these battery/storage facilities and how will they be sympathetic to their surroundings? Where will the lighting be situated and also CCTV?

Health –the countryside is a proven asset to aid health and well-being. This development will mean there will be reduced access to the countryside for all ages, harming the character of the countryside and the public rights of way. The proposed plans, at the moment, completely envelop our Primary School. Can One EarthSolarFarm prove this will not have a detrimental effect on the health of those living nearby or the youngsters and staff at the school? Also, the use of monitoring cameras on the site will affect the privacy of the villagers. What evidence does OneEarthSolarFarm have to suggest this will not affect the health and well-being of those close by? Will they be instigating independent mental health studies before the final stages of this project goes to government? Looking further into the worries and mental health aspects,

concerned parishioners do not understand and are asking why this production of power cannot be done with off-shore wind turbines such as the Vestas V236 15MW, of which only 12 or 13 would be required to produce the same amount of power and could leave our agricultural land for farming. We would like OneEarthSolarFarm to comment on this.

Accidents – The A1133 has several accident black spot adjacent to the affected villages. With increased construction traffic and the maintenance traffic, how can OneEarthSolarFarm ensure there is not an increase in road accidents? There have also been incidents where batteries have caught fire and been very difficult to extinguish. How will OneEarthSolarFarm ensure this does not happen on their site, bearing in mind the local fire station is tiny? What is the nature/size/area and numbers of batteries/invertors and associated equipment? How will OneEarthSolarFarm ensure the safety of the general public during the construction process, particularly with cables, large equipment being transported and erected?

Vistas and Views – OneEarthSolarFarm has chosen our area because it is flat and there is easy access to High Marnham Sub Station. This means there are extensive views across to Lincoln Cathedral to the east, up the Trent Valley to the north and south and over rolling fields to Tuxford Moor to the west. If this proposed development goes ahead, all the views to the east, north and west will be lost and replaced by fields of black panels. How can OneEarthSolarFarm justify this massive environmental impact on the villages surrounded by the solar farm? Have they also taken into account the new pylon line coming in from the North Sea Wind Turbines bringing 400,000 volts into High Marnham Sub Station, adding another industrial structure to the proposed solar farm development and changing our 'green and pleasant land' forever?

Gill Cobham

On behalf of South Clifton Parish Council pcsouthclifton@gmail.com



Trent Valley Internal Drainage Board

Water Management Consortium

Mr A. McGill, M.A., F.C.M.I.
Chief Executive

Wellington House, Manby Park, Manby,
LOUTH, Lincolnshire, LN11 8UU.

Mr R. Brown, BEng (hons), GMICE
Senior Engineer

Telephone: 01507 328095
E-mail: planning@tvidb.co.uk

Your ref: EN010159

Our ref: TV23020

Please ask for: Darren Cowling

11th December 2023

The Planning Inspectorate
Environmental Services
Operations Group 3
Temple Quay House
2 The Square
Bristol
BS1 6PN

Dear Sir/Madam

Response to Scoping consultation for One Earth Solar Farm

With regard to the request for consultation response regarding the above project I would advise that the extent of the overall development covers areas under the control of Trent Valley Internal Drainage Board.

There are numerous watercourses that are likely to be impacted by the development, either by the position of the proposed arrays, cable route or potential increase in flows. Please see the attached plan which highlights Board maintained watercourses within the project's scoping boundary.

I feel that it is important to raise some specific issues that will need to be considered further and in detail as a part of the DCO process.

All Board watercourses are subject to Byelaws, which are intended to protect the watercourses and the Board's ability to maintain them. With this in mind I would advise the following.

Byelaw Number 3 states that:

No person shall as a result of development (within the meaning of section 55 of the Town and Country Planning Act 1990 as amended ("the 1990 Act")) (whether or not such development is authorised by the 1990 Act or any regulation or order whatsoever or none of them) for any purpose by means of any channel, siphon, pipeline or sluice or by any other means whatsoever introduce any water into any watercourse in the District so as to directly or indirectly increase the flow or volume of water in any watercourse in the District (without the previous consent of the Board)."

Consent will only be granted for the increase in flow to a watercourse where the Board is happy that in doing so no demonstrable harm will be caused. It may be the case that appropriate mitigations are required to be put in place to either attenuate flow or to enhance the existing

watercourse to ensure no detriment. If this is not possible alternative outfall locations may need to be considered.

Byelaw Number 10 states that:

No person without the previous consent of the Board shall erect any building or structure, whether temporary or permanent, or plant any tree, shrub, willow or other similar growth within nine metres of the landward toe of the bank where there is an embankment or wall or within nine metres of the top of the batter where there is no embankment or wall, or where the watercourse is enclosed within nine metres of the enclosing structure.

This will relate primarily to the location of the arrays, compounds and transformer stations.

Byelaw number 17 states that:

No person shall without the previous consent of the Board -

- i. place or affix or cause or permit to be placed or affixed any gas or water main or any pipe or appliance whatsoever or any electrical main or cable or wire in, under or over any watercourse or in, over or through any bank of any watercourse;
- ii. cut, pare, damage or remove or cause or permit to be cut, pared, damaged or removed any turf forming part of any bank of any watercourse, or dig for or remove or cause or permit to be dug for or removed any stone, gravel, clay, earth, timber or other material whatsoever forming part of any bank of any watercourse or do or cause or permit to be done anything in, to or upon such bank or any land adjoining such bank of such a nature as to cause damage to or endanger the stability of the bank;
- iii. make or cut or cause or permit to be made or cut any excavation or any tunnel or any drain, culvert or other passage for water in, into or out of any watercourse or in or through any bank of any watercourse;
- iv. erect or construct or cause or permit to be erected or constructed any fence, post, pylon, wall, wharf, jetty, pier, quay, bridge, loading stage, piling, groyne, revetment or any other building or structure whatsoever in, over or across any watercourse or in or on any bank thereof;
- v. place or fix or cause or permit to be placed or fixed any engine or mechanical contrivance whatsoever in, under or over any watercourse or in, over or on any bank of any watercourse in such a manner or for such length of time as to cause damage to the watercourse or banks thereof or obstruct the flow of water in, into or out of such watercourse.

Provided that this Byelaw shall not apply to any temporary work executed in an emergency but a person executing any work so excepted shall, as soon as practicable, inform the Board in writing of the execution and of the circumstances in which it was executed and comply with any reasonable directions the Board may give with regard thereto.

The Board will require all watercourses to be crossed by means of HDD at a depth no less than 2 metres PLUS the cable safety distance below the hard bed level of all watercourses (to ODN if EA or IDB maintained). This will apply to the primary cable route and any interconnecting cables between array sites. The purpose of this requirement is to allow the IDB to maintain and have the flexibility to improve watercourses in the future due to climate change (works will include deepening & widening of watercourses).

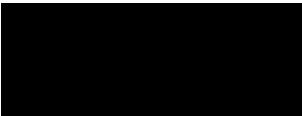
It is anticipated that the above requirements would be covered by SOCGs, MOU, and via Protective Provisions within the DCO. This matter should be discussed further and in more detail as the proposed cable route is refined.

Any culverting or other works within the bed of any riparian watercourse within the Board's district be they temporary or permanent will also require consent. The Board would not look to be disapplying section 23 of the Land Drainage Act (1991).

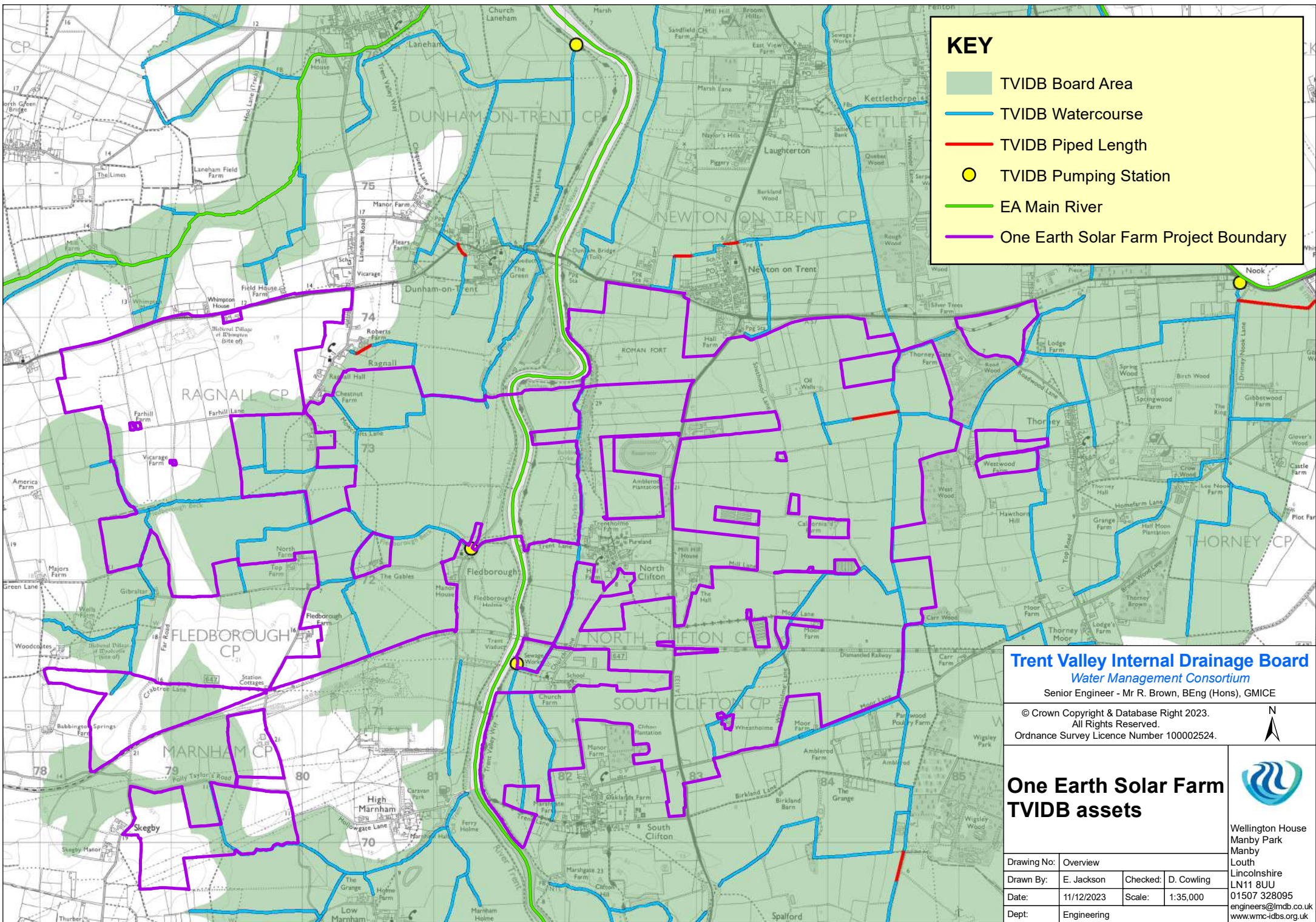
I would advise that any consent issued under the Lane Drainage Act (1991) would be additional to any permission gained under the Town and Country Planning Act 1990. The Board's consent will only be granted where proposals are not detrimental to the flow or stability of the watercourse/ culvert or the Board's machinery access to the watercourse/ culvert which is required for annual maintenance, periodic improvement and emergency works.

I hope that the above is of assistance and I look forward to further ongoing detailed discussions with regard to the proposal.

Yours faithfully

A solid black rectangular box used to redact the signature of the Planning and Development Control Officer.

Planning and Development Control Officer



KEY

- TVIDB Board Area
- TVIDB Watercourse
- TVIDB Piped Length
- TVIDB Pumping Station
- EA Main River
- One Earth Solar Farm Project Boundary

Trent Valley Internal Drainage Board
Water Management Consortium

Senior Engineer - Mr R. Brown, BEng (Hons), GMICE

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One Earth Solar Farm
TVIDB assets



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Drawing No:	Overview		
Drawn By:	E. Jackson	Checked:	D. Cowling
Date:	11/12/2023	Scale:	1:35,000
Dept:	Engineering		



UK Health
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Your Ref: EN010162
Our Ref: CIRIS 64781

Mr Joseph Briody
EIA and Land Rights Advisor
The Planning Inspectorate
Environmental Services
Operations Group 3
Temple Quay House
2 The Square
BRISTOL BS1 6PN

7th December 2023

Dear Mr Briody

**Nationally Significant Infrastructure Project
One Earth Solar Farm; PINS Ref: EN010159
Scoping Consultation Stage**

Thank you for including the UK Health Security Agency (UKHSA) in the scoping consultation phase of the above application. ***Please note that we request views from the Office for Health Improvement and Disparities (OHID) and the response provided below is sent on behalf of both UKHSA and OHID.*** The response is impartial and independent.

The health of an individual or a population is the result of a complex interaction of a wide range of different determinants of health, from an individual's genetic make-up, to lifestyles and behaviours, and the communities, local economy, built and natural environments to global ecosystem trends. All developments will have some effect on the determinants of health, which in turn will influence the health and wellbeing of the general population, vulnerable groups and individual people. Although assessing impacts on health beyond direct effects from for example emissions to air or road traffic incidents is complex, there is a need to ensure a proportionate assessment focused on an application's significant effects.

Having considered the submitted scoping report we wish to make the following specific comments and recommendations:

Environmental Public Health

We recognise the promoter's proposal to include a health section in the Environmental Statement (ES). We believe the summation of relevant issues into a specific section of the report provides a focus which ensures that public health is given adequate consideration. The section should summarise key information, risk assessments, proposed mitigation measures, conclusions and residual impacts, relating to human health. Compliance with the requirements of National Policy Statements and relevant guidance and standards should also be highlighted.

In terms of the level of detail to be included in an ES, we recognise that the differing nature of projects is such that their impacts will vary. UKHSA and OHID's predecessor organisation Public Health England produced an advice document *Advice on the content of Environmental Statements accompanying an application under the NSIP Regime*¹, setting out aspects to be addressed within the ES¹. This advice document and its recommendations are still valid and should be considered when preparing an ES. Please note that where impacts relating to health and/or further assessments are scoped out, promoters should fully explain and justify this within the submitted documentation.

It is noted that emissions to air from construction and decommissioning plant; and operational effects have north been scoped-out of any further assessment in the ES.

It is also noted that likely significant air quality effects that will be scoped-in for detailed assessment in the ES include:

- Impacts on dust soiling and PM₁₀ emissions during the enabling, construction and decommissioning of the Proposed Development, at existing sensitive receptors; and
- Impacts of NO₂, PM₁₀ and PM_{2.5} emissions from vehicles associated with the enabling and construction, and decommissioning, of the Proposed Development during the peak year, at existing sensitive receptors.

Recommendation

Our position is that pollutants associated with road traffic or combustion, particularly particulate matter and oxides of nitrogen are non-threshold; i.e. an exposed population is likely to be subject to potential harm at any level and that reducing public exposure to non-threshold pollutants (such as particulate matter and nitrogen dioxide) below air quality standards will have potential public health benefits. We support approaches which minimise or mitigate public exposure to non-threshold air pollutants, address inequalities (in exposure) and maximise co-benefits (such as physical exercise). We encourage their consideration

¹
<https://khub.net/documents/135939561/390856715/Advice+on+the+content+of+environmental+statements+accompanying+an+application+under+the+Nationally+Significant+Infrastructure+Planning+Regime.pdf/a86b5521-46cc-98e4-4cad-f81a6c58f2e2?t=1615998516658>

during development design, environmental and health impact assessment, and development consent.

It is noted that the applicant has scoped-out any further consideration of the potential risk of fire originating from the operation of the Battery Energy Storage Systems.

Recommendation

Due to our experience with lithium-ion battery fires, and the associated risks, we would recommend that the risks associated with fires is scoped-in for further assessment in the ES.

Human Health and Wellbeing - OHID

This section of OHID's scoping response, identifies the wider determinants of health and wellbeing we expect the Environmental Statement (ES) to address, to demonstrate whether they are likely to give rise to significant effects. OHID has focused its approach on scoping determinants of health and wellbeing under four themes, which have been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements. The four themes are:

- Access
- Traffic and Transport
- Socioeconomic
- Land Use

Having considered the submitted scoping report OHID has no specific comments at this stage.

Electromagnetic Fields (EMFs)

It is noted that the current proposals do not appear to consider possible health impacts of EMF.

Recommendation

The applicant should assess the potential public health impact of EMFs arising from any electrical equipment associated with the development. Alternatively, a statement should be provided explaining why EMFs can be scoped out. For more information on how to carry out the assessment, please see the accompanying UKHSA guidance document referenced below².

Yours sincerely

On behalf of UK Health Security Agency

Please mark any correspondence for the attention of National Infrastructure Planning Administration.



Guildhall
Marshall's Yard
Gainsborough
Lincolnshire DN21 2NA

Telephone 01427 676676
Web www.west-lindsey.gov.uk

Your contact for this matter is:
Danielle Peck

The Planning Inspectorate
Environmental Services, Central Operations
Temple Quay House
2 The Square
Bristol
BS1 6PN

11 December 2023

Dear Sir/Madam,

APPLICATION REFERENCE NO: 147587

PROPOSAL: PINS consultation on behalf of the Secretary of State regarding information (Scoping Opinion) to be provided in an Environmental Statement - Ref: EN010159

LOCATION: One Earth Solar Farm

Thank you for your consultation request under regulation 10 (6) of the EIA Regulations.

West Lindsey District Council as a consultation body and one of the administrative authorities that the site falls within, wishes to make the following comments in regard to the information to be provide within the Environmental Statement. The following comments are made, following the structure of the Environmental Impact Assessment Scoping Report prepared by One Earth Solar- Logika Group Ltd dated November 2023.

1. Introduction (pages 2- 10)

We agree that the development falls under paragraph 3(a) of Schedule 2. In the absence of an EIA Screening Opinion, we believe that the development is likely to have significant effects on the environment, and agree with the applicant's intention that they will submit an Environmental Statement with their application (paragraph 1.10.)

2. Description of the Site and Surrounding Area (pages 11-17)

We agree with the description of the site and its location adjacent to nearby villages and settlements. It is noted that the villages of Laughterton and Thorney have not been explicitly mentioned, however they are located close to the north and east boundaries of the site limits.

3. The Development Proposals (pages 18-29)

We are agreeable to the suggested approach of the 'Rochdale envelope' as per PINS advice note 9 (paragraph 3.1.) As per paragraph 4.9 of the Advice Note: *"The assessment should establish those parameters likely to result in the maximum adverse effect (the worst case scenario) and be undertaken accordingly to determine significance."*

It is noted that paragraph 3.9. states that there are two options for the panels. One of the options would be fixed south facing PV arrays with the other single axis tracker arrays. The ES should be explicitly clear on which type of arrays are proposed. It should be clear on what basis the Environmental Impact Assessment is assessed from. Applying the "Rochdale Envelope" approach, it should be the higher, more visibly prominent of the options.

It is noted that paragraph 3.11. refers to differing heights of the Solar PV modules in areas at risk of flooding. It states that where *flood depths are less than 1m, the maximum height of the top of the Solar PV modules would be 3.8m*. It then goes on to state that the *"The maximum heights in areas of flood risk greater than 1m will be determined following further discussions with the Environment Agency."*

The max height of 3.8m for the Solar PV modules are noted where the flood depths are less than 1m. However there are concerns with the proposed overall height where panels would be located in areas where flood depths exceed 1m.

It has been noted that within the Hydrology and Hydrogeology Section of the report at Paragraph 7.22. that it states: *Solar panels provided within the flood extents however, will be raised on frames to be a minimum of 1.8m above the ground surface therefore ensuring that a 300mm freeboard is provided between the lowest point of the panel and the flood level.*

The ES should be clear on what option array option is proposed and also fully detail the heights of the arrays when they are to be located in flood risk areas (in flood risk depths of more than 1m).

The ES should also be very clear in setting out which parameters fixed and where maximum parameters are being applied. It should include the maximum parameters such as the maximum footprint of development, the maximum size and heights of development components and the maximum capacities for output and storage; the likely foundation design for the solar panels and their construction method e.g. if piling will be required; and the locations and voltages of overhead and underground cables.

The report states (paragraph 3.55.) The operational life of the Proposed Development is not proposed to be specified in the application, the applicant is not seeking a time limited consent until the EIA has been prepared and would be dependant on if there are any effects which would justify limiting the time period of consent. It is noted under the new EN-3 (paragraph 2.10.65) that an upper limit of 40 years is typical. We would therefore expect the ES to be clear as to why the development would be considered to have a longer project lifetime, and be clear in its assessment as to whether the environmental effects of development would be temporary or permanent.

The proposals to include a Construction Environmental Management Plan (CEMP) are noted (para 3.51.) this should also include any details of phasing. The ES should contain details of construction compounds, their locations and likely environmental effects during the construction phases of development.

4. Planning Policy Context (pages 30-39)

It is noted that reference to the most up to date Development Plan for the West Lindsey District is referenced. The Central Lincolnshire Local Plan 2023 was adopted in April 2023. <https://www.n-kesteven.gov.uk/central-lincolnshire>

It does not appear that there are any relevant made neighbourhood plans or neighbourhood plans in preparation either adjoining or adjacent parishes to the site boundaries within the West Lindsey District.

It should also be noted that part of the site which lies within the West Lindsey District is within a Sand and Gravel Minerals Safeguarding Area and therefore Policy M11 of the Lincolnshire County Council Minerals and Waste Local Plan Core Strategy and Development Management policies is relevant. <https://www.lincolnshire.gov.uk/directory-record/61697/minerals-and-waste-local-plan-core-strategy-and-development-management-policies>

Lincolnshire County Council are the minerals authority and would defer to them in this regard.

5. Approach to EIA (pages 40-49)

The proposed approach to EIA is broadly agreeable.

Paragraphs 5.30- 5.35. discusses the consideration of cumulative impacts and details criteria that will be considered, being other projects within 5km of the site, those that have planning permission and schemes where a planning app or DCO has been submitted but a decision not yet made.

Paragraph 4.2.5 of NPS En-1 states that *“When considering cumulative effects, the ES should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (**including projects for which consent has been sought or granted, as well as those already in existence**)”* Furthermore, PINS Advice Note 17 states at paragraph 1.4 that it relates to projects that are ‘*reasonably foreseeable*’, and that the recent High Court judgment *Pearce v Secretary of State for Business, Energy, and Industrial Strategy* [2021] EWHC 326 (Admin) considers the matter of cumulative environmental effects in detail.

It should be noted that West Lindsey currently has a number of NSIP proposals within the District, at differing stages. These include the Gate Burton Energy Park, Cottam Solar Project, West Burton Solar Project and the Tillbridge Solar Project, three of which being already at examination, and the fourth expected to be submitted in early 2024.

Full details of the stages of these applications is available using the following link: <https://www.west-lindsey.gov.uk/planning-building-control/solar-development-proposals-west-lindsey>

There are significant concerns with the cumulative impacts that these proposals will have on the rural landscape of West Lindsey and Lincolnshire as a whole. Further discussion and cumulative consideration should be given to these proposals within the specific technical chapters of the ES.

6. Biodiversity (pages 50-59)

It is noted that some initial surveys have been done and some are ongoing. The ES should include full details of survey results for all species identified, ensuring that these are carried out at the correct time of year where required. It is disappointing that discussion around how the development, including such things as perimeter fencing and construction compounds may impact protected species, particularly those where their movement may be impeded.

Paragraph 6.26.- *The proposed Development provides opportunities for delivering Biodiversity Net Gain (measured using Natural England's Biodiversity Metric 4.0) at a scale in keeping with the Lawton Principles (i.e. more, bigger, better and joined up).* Application of the Metric tool to assess both existing and proposed biodiversity value is encouraged.

Paragraph 6.40. – it is noted that the approach to Ecological Impact Assessment will follow the guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM) (updated 2022).

7. Hydrology and Hydrogeology (pages 66- 81)

The proposed approach to Hydrology and Hydrogeology is broadly agreeable.

Attention is drawn to Paragraph 7.10. which states that Surface water mapping shows that the majority of the site is at very low risk of flooding from fluvial sources. Surface water flood risk is not the same as fluvial flooding.

It is noted in Paragraph 7.29. that a Flood Risk Assessment is proposed and that consultation with the Environment Agency, Nottinghamshire County Council and Lincolnshire County Council to obtain relevant flood risk information and discussion around the approach to surface water drainage will take place, this is encouraged.

It is also recommended that discussion takes place with the relevant Internal Drainage Boards (IDB's), who may maintain or manage of watercourses in the site area. This does not appear to be mentioned within the report.

8. Land and Soils (pages 82- 89)

The ALC identifies that much of the site is Grade 3. It is noted that field work to study soil and site limitations is being undertaken from October 2023 and is expected to be completed in Q1 of 2024 (paragraph 8.15.). The preliminary information will be reported in the PEIR with full results being reported in the ES. It is disappointing that this work has not yet been carried out given that the loss of agricultural land could potentially be a significant impact. We would have expected this information to have been taken into consideration during the site selection and alternatives considered stage.

It is noted that the fieldwork is being done using a hand held 50mm diameter "Dutch" auger and/or spade to a maximum depth of 1.2m however it is not clear as to what spacing intervals this is being carried out at.

9. Buried Heritage (pages 90-95)

Paragraph 9.9. recognises that the most notable known Roman remains on the site are those of the Roman Vexillation Fortress and Marching camps, to the south west of Newton on Trent, located within the West Lindsey District boundary. Impact on this Scheduled Monument should be scoped in.

It is noted that an Archaeological Desk based Assessment covering the whole site will be carried out as well as physical investigations in areas that have been identified as having higher archaeological potential. Liaison with the Historic Environment Team at Lincolnshire County Council as well as Historic England is recommended.

10. Cultural Heritage (pages 96- 107)

The Roman Vexillation Fortress (Scheduled Monument) lies within the West Lindsey District and is included as an important receptor. It is welcomed that the effects of the setting of this Scheduled Monument will be included in the ES. It is also noted that discussions will take place with LPA Conservation Officers and Historic England which is welcomed.

It is noted within paragraph 10.21. that all heritage assets in Newton on Trent and Kettlethorpe are to be scoped out due to ‘*the A57 Dunham Road providing a strong perceptual and visual separation from Site, as observed during fieldwork.*’ As the definition of heritage setting goes beyond direct line of sight in order to appreciate the significance of the asset, there is concern that a number of these assets are being scoped out. These sites are in the 1km zone and should be scoped in. Where any harm is identified, it should be included. Applying the “Rochdale envelope” scenario – the maximum impact of development should be accounted for.

11. Landscape and Visual (pages 108-123)

It is agreed that the LVIA should follow Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3). (Paragraph 11.3.)

Paragraph 11.7. states that the preliminary LVIA study area extends up to 2km radius from the site boundary given the desk-based review, it is noted that the study area from Laughterton and Kettlethorpe (north) and the Fosdyke Navigation (east) are to be included. However, it is noted that no exact viewpoints/ visual receptors have been given in the report, these should be agreed with all relevant LPA’s.

It is noted in that lighting is to be scoped out (Table 11-2), however there are concerns with this given that the exact lighting and if it will be triggered by motion detectors is yet to be decided. It is expected that this element should at least be covered in a chapter within the LVIA.

12. Transport and Access (pages 124 132)

The general approach to Transport and Access is broadly agreeable. It is noted that the users (receptors) of the A57 and A1133 (within the West Lindsey District) will be considered during the construction and decommissioning phases. It is also noted that the eastern parts of the site will be accessed from the A1133.

Liaison with Nottinghamshire and Lincolnshire County Councils who are the relevant Local Highways Authorities is recommended. Vehicle trip generation should be calculated and submitted.

13. Air Quality (pages 133-144)

The proposed methodology to assessing baseline air quality is noted. Any air quality impacts would generally be concentrated to construction/decommissioning. There does not seem to be any reason to doubt this – although final judgment should be reserved upon the submission of the ES. It is noted that many of the initial surveys, i.e transport have not yet been carried out to inform air quality.

14. Carbon and Climate Change (pages 145- 151)

The contents in this section are noted.

15. Noise and Vibration (pages 152- 163)

The proposed methodology to noise and vibration is largely agreeable. The closest settlement within the West Lindsey District is Newton on Trent where existing residential properties are located adjacent to the north of the A57.

It is noted that vibration from the construction and decommissioning traffic, operational traffic and cable routes and solar PV arrays are to be scoped out.

The intention to scope in construction traffic noise is agreeable (paras 15.13.- 15.15.) as well as noise and vibration from construction activities and noise impacts from ancillary equipment. Vehicle trip generation should be calculated and submitted.

16. Human Health (pages 164-182)

The contents in this section are noted.

17. Socio- Economics (pages 183- 189)

The contents in this section are noted, the effects to be scoped into the assessment are broadly agreed with.

18. Environmental Topics Scoped Out (pages 190-193)

It is noted that Glint and Glare is proposed to be scoped out. There are concerns with this element being scoped out. The panels that would be located in flood risk areas could potentially be surrounded by flood water in a future flooding event, meaning that glint and glare could be more prominent, especially if the panels were to be at the predicted heights. This is not consistent with other solar projects in West Lindsey District in which glint and glare is within the scope of EIA – and the scoping report does not set out any site specific factors which should exclude it. It is also recommended that glint and glare consideration is given to the other nearby Solar Parks in the West Lindsey District and the potential for cumulative impacts, it is recommended that this is at least covered by the ES LVIA Chapter.

It is noted that the Risk of Major Accidents and Disasters is to be scoped out. It is noted that a management plan for BESS safety will be prepared and submitted with the DCO, as detailed in Chapter 3- Development Proposals.

It is noted that Waste and Wind Microclimate are to be scoped out. However, the Secretary of State has given the opinion that waste should be in scope, in other solar project developments in the district, including West Burton Solar.

Please consider the above to constitute West Lindsey District Council's formal consultation response under reg10(6) of the EIA Regulations.

Yours faithfully

D Peck

Danielle Peck
Senior Development Management Officer
On behalf of West Lindsey District Council

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