



HELIOS RENEWABLE
ENERGY
PROJECT

PINS Document Number:
EN010140/APP/6.4

Pursuant to:
APFP Regulation 5(2)(a)

Environmental Statement Non-Technical Summary

June 2024



Helios Renewable Energy Project Environmental Statement Non-Technical Summary

Planning Inspectorate Reference: EN010140

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Prepared on behalf of Enso Green Holdings D Limited

Project Ref:	33627/A5/ES/NTS	
Status:	Draft	Final
Issue/Rev:	01	01
Date:	June 2024	June 2024
Prepared by:	MB	AB
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PREFACE

The Environmental Statement (ES) has been prepared by Stantec on behalf of Enso Green Holdings D Limited (the 'Applicant') in relation to an application to be made to the Secretary of State ('SoS') for the Department for Energy Security and Net Zero under Section 37 of the Planning Act 2008 ('the PA2008'), seeking a Development Consent Order ('DCO') for the Helios Renewable Energy Project ('the Proposed Development'). The DCO Application Order Limits comprise 475 hectares ('ha') of land located to the south-west of the village of Camblesforth and to the north of the village of Hirst Courtney in North Yorkshire ('the Site').

This report is a Non-Technical Summary ('NTS') of the Environmental Impact Assessment (EIA) information for the Proposed Development identified in the Environmental Statement (ES). The ES comprises Volume 1 Main Text and Volume 2 Technical Appendices.

A full set of the ES documents can also be provided on a USB drive for £15, or as a hard copy for £1000, on written request to the Applicant via post or email at the details below (reasonable postage charges may also apply).

Please send any responses, requests for copies of documents or queries to:

- Email: info@helios-renewable-energy-project.co.uk
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1. Introduction

1.1. Background

- 1.1.1. This document provides a non-technical summary of the Environmental Statement (ES) prepared to accompany an application seeking a Development Consent Order ('DCO') for the Helios Renewable Energy Project ('the Proposed Development').
- 1.1.2. The ES provides the findings of the assessment of likely significant environmental effects resulting from the construction, operation and maintenance, and decommissioning phases of the Proposed Development, including measures where necessary, to mitigate significant adverse environmental effects.
- 1.1.3. The ES has been prepared in accordance with the EIA Regulations and Planning Inspectorate's Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements (June 2020)¹.

1.2. The Site and Proposed Development

- 1.2.1. The 475 hectares (ha) Site where the Proposed Development will be located, shown on Figure 1.1, comprises land south-west of the village of Camblesforth and north of the village of Hirst Courtney, in the administrative area of North Yorkshire Council. The Site predominantly comprises agricultural land, consisting of fields used for grazing and arable farming.
- 1.2.2. The Proposed Development comprises the construction, operation and maintenance, and decommissioning of a solar Photovoltaic (PV) array electricity generating station, with a total capacity exceeding 50 megawatts with export connection to the national electricity transmission system ('NETS') at National Grid's Drax Substation.

1.3. The Applicant

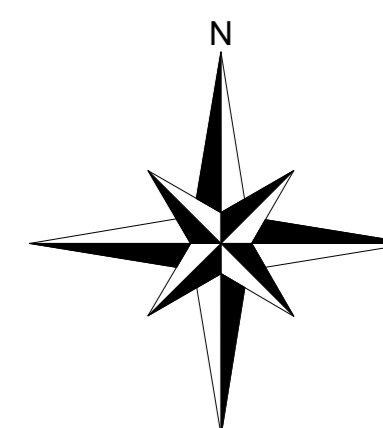
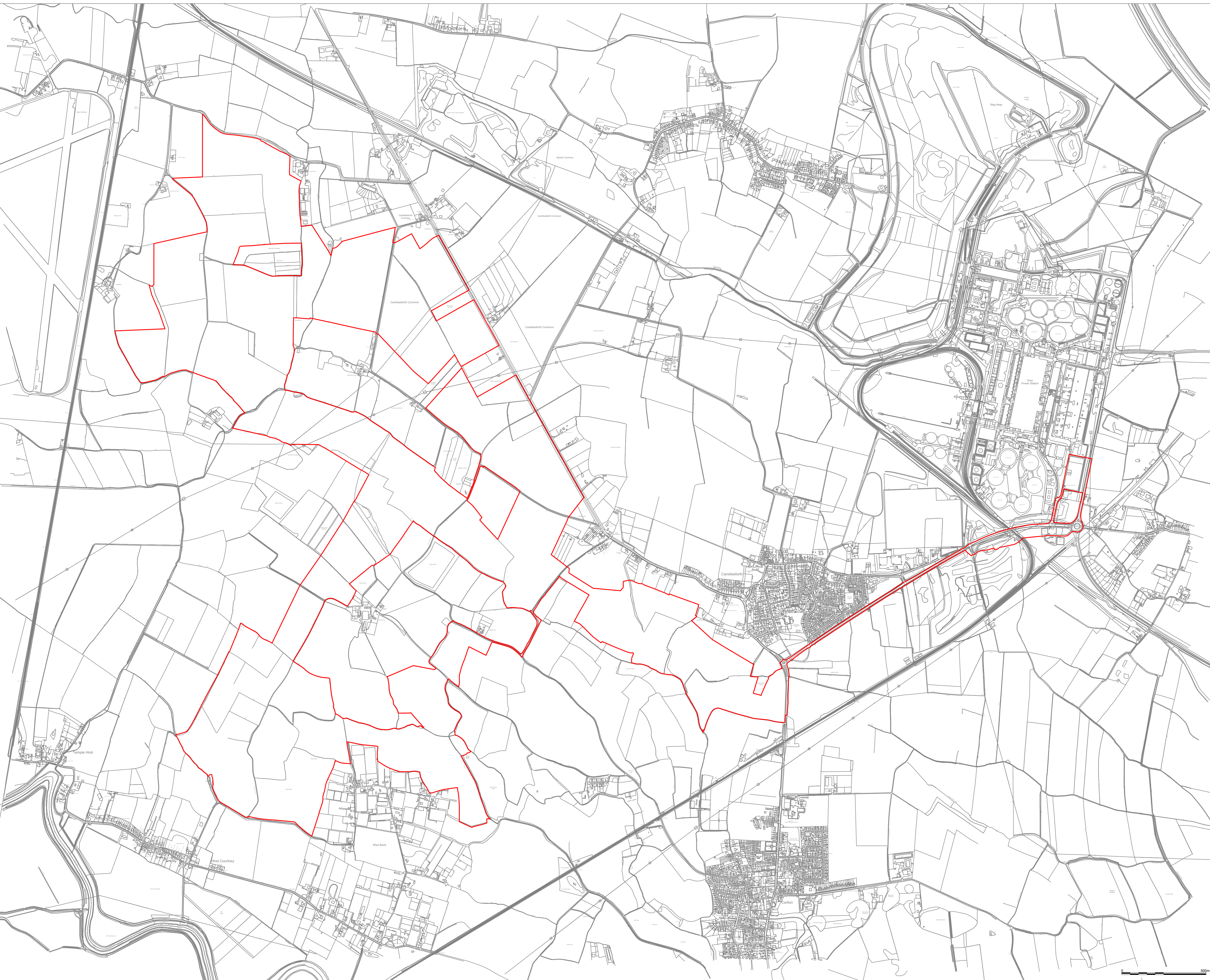
- 1.3.1. Enso Green Holdings D Limited (the 'Applicant') is a joint-venture partnership between Enso Energy and Cero Generation. Enso Energy is one of the UK's most experienced renewable energy developers, with an unparalleled focus on solar energy. Cero Generation is a leading solar energy company, working across Europe

¹ Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/#8> Accessed June 2024.

to support the transition to a net-zero future.

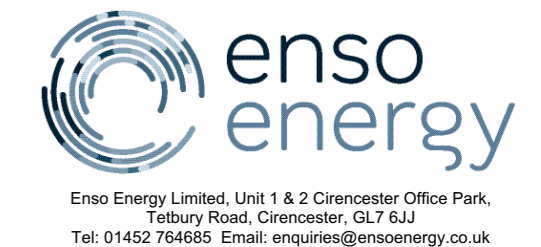
Figure 1.1 Site Location Plan

KEY
Order Limits



Revisions:
First Issue- 11/06/2024 AH

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Location and Order Limits Plan

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Scale: 1:10,000 @ A1	Date: 11/06/2024	

2. Environmental Impact Assessment Methodology

2.1. The Environment Impact Assessment ('EIA') Process

2.1.1. The EIA requirements for Nationally Significant Infrastructure Projects (NSIPs) are transposed into law through the *Infrastructure Planning (Environmental Impact Assessment) Regulations 2017* (the 'EIA Regulations'). The Proposed Development is a 'Schedule 2' development under paragraph 3(a) of the EIA Regulations as it constitutes an '*industrial installation for the production of electricity*' and is not a project listed in Schedule 1. Schedule 2 development are subject to EIA if it is considered '*likely to have significant effects on the environment by virtue of factors such as its nature, size or location*'. The criteria on which this judgement must be made are set out in Schedule 3 to the EIA Regulations.

2.1.2. The EIA Regulations set out the statutory process and minimum requirements for the provision of adequate environmental information to enable the EIA process. The EIA, activities, surveys and studies will be reported in the ES that will be submitted with the DCO application.

2.2. EIA Scoping

2.2.1. The Applicant submitted a Scoping Report in support of a formal request for a Scoping Opinion to the Planning Inspectorate in June 2022, who conduct scoping on behalf of the Secretary of State for Energy Security and Net Zero. The Planning Inspectorate's EIA Scoping Opinion² was adopted in July 2022. The following topics have been scoped into the ES – i.e. included for detailed assessment:

- Cultural Heritage;
- Landscape and Views;
- Biodiversity;
- Water Environment;

² The consenting authority's opinion on the main likely effects of a development.

- Transport and Access;
- Noise and Vibration;
- Climate Change;
- Socio-Economics; and
- Soils and Agricultural Land.

2.2.2. Human Health, Major Accidents and Disasters, Lighting and Waste have also been scoped into the ES but are fully integrated into the assessments for the topics set out above, where relevant, rather than as separate topics.

2.2.3. The topics scoped out of the ES, i.e., those environmental aspects where significant effects are not anticipated as a result of the Proposed Development, comprise:

- Air Quality;
- Land Contamination;
- Electric, Magnetic, and Electromagnetic Fields;
- Telecommunications, Television Reception, and Utilities;
- Wind Microclimate;
- Daylight, Sunlight, and Overshadowing;
- Glint and Glare; and
- Minerals.

2.2.4. Some of the topics scoped out of the ES have been considered separately in technical assessments undertaken as part of the ES process.

2.3. Assessment Methodology

2.3.1. The assessments in the ES identify, describe and assess the likely significant effects of the Proposed Development on the environment during the construction, operation and maintenance, and decommissioning phases. The significance of each

environmental effect identified is generally determined by the following factors:

- The sensitivity, importance or value of the environment (such as people or wildlife); and
- The change taking place to the environment (i.e. the magnitude and duration of the change taking place).

2.3.2. After the magnitude of the impact and the sensitivity of the receptor/resource have been determined, the effect significance will be classified using the matrix in Table 2.1. This illustrates the interaction between impact magnitude and receptor sensitivity. Most environmental disciplines classify effects as adverse or beneficial, where effects are negligible, minor, moderate or major. Major and moderate effects are typically considered to be significant, whilst negligible and minor effects are not considered significant.

Table 2.1: Effect Significance Matrix

Magnitude	Sensitivity			
	High	Medium	Low	Very Low
High	Major Adverse / Beneficial	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor Adverse / Beneficial
Medium	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Negligible
Low	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible

Generic Effect Definitions

2.3.3. Table 2.2 below provides generic definitions of the terminology used to categorise effects.

Table 2.2: Generic Effect Definitions

Effect	Description
Major	An effect that is likely to be an important consideration at a national to regional level because it will contribute to achieving national/regional objectives or is likely to result in exceedance of statutory objectives or breaches of legislation.
Moderate	An effect that is likely to be an important consideration at a regional level.
Minor	An effect that is likely to be an important consideration at a local level.
Negligible	An effect that is likely to have a negligible or neutral influence, irrespective of other effects.

- 2.3.4. Environmental effects have been evaluated with reference to definitive standards and legislation, where available. Where it has not been possible to quantify effects, qualitative assessments have been carried out, based on available knowledge and professional judgement. Where uncertainty exists, this has been noted in the chapter.
- 2.3.5. Each technical chapter of the ES includes the sections set out in Table 2.3.

Table 2.3: Technical Chapter Format

Sub-Heading	Description
Introduction	This section introduces the assessment discipline and the purpose for which it is being undertaken.
Planning Policy Context	This section includes a summary of national and local policies of relevance to the environmental discipline and assessment. Where applicable, relevant technical legislation is also summarised.
Assessment Methodology	An explanation of methods used in undertaking the technical assessment.
Baseline Conditions	Includes a description of the environment at the time of writing and a 'Future Baseline' which describes how the baseline conditions would be expected to change if the Proposed Development were

Sub-Heading	Description
	not to proceed.
Likely Significant Effects	The likely significant effects on the environment resulting from the construction, operation and maintenance, and decommissioning phases of the Proposed Development. The assessment takes primary mitigation (modifications at the pre-application phase inherent to the Proposed Development) and tertiary mitigation (actions which would occur regardless of the EIA) into account as an integral part of the Proposed Development.
Mitigation Measures	Mitigation measures put forward, where practicable, to reduce, avoid or offset any identified potential adverse effects.
Residual Effects	The residual effects represent the overall likely significant effect of the Proposed Development on the environment having taken account of practicable/ available mitigation measures.
Cumulative Effects	The inter-project cumulative effects of the Proposed Development and the identified committed developments are assessed.
Summary	A summary of the assessment and conclusions, and of the intra-project effects, is provided at the end of each technical chapter.

2.4. Consultation

- 2.4.1. The Preliminary Environmental Information Report³ was published for statutory consultation and publicity under Sections 42, 47 and 48 of the PA2008, and feedback was sought from the local communities and other stakeholders during the statutory consultation period which ran from 26th October 2023 until 21st December 2023. Elements of the design, baseline conditions, and assessment methodology have been updated in response to the Statutory Consultation and have formed the basis for the assessment undertaken in the ES.

³ A report which sets out the preliminary environmental information regarding a proposed scheme in order to allow statutory bodies, the local community and the general public, consulted as part of the formal DCO consultation process, to come to an informed view on the likely significant environmental effects of the proposals.

3. Site and Development Description

3.1. The Site Location and Description

- 3.1.1. The Site, which is 475ha, is irregularly shaped and comprises agricultural land, consisting of fields used for grazing and arable farming. The main part of the Site is within a wider area of land bounded: north-east by the A1041; west by agricultural fields between the Site and the Selby Branch of the East Coast Mainline railway further west; and south by agricultural fields and agricultural and horticultural development surrounding Moss Green Lane.
- 3.1.2. Nearby settlements include the villages of Camblesforth and Hirst Courtney to the northeast and south of the Site, respectively. Selby, located approximately 1.5km north of the Site, is the nearest main settlement to the Site.
- 3.1.3. The M62 and A63 are close to the Site on east – west alignments beyond the southern and northern extents of the Site, respectively. Public Rights of Way ('PRoW') cross the Site and the wider area, often following farm tracks or rural lanes. The Trans Pennine Trail long-distance walking and cycling route extends south from Selby and passes close to the western and southern Site boundaries.
- 3.1.4. The industrial complexes of Drax (immediately north of the eastern Site boundary) and Eggborough Power Stations (approximately 3.3km southwest of the Site) form prominent features in the surrounding landscape.

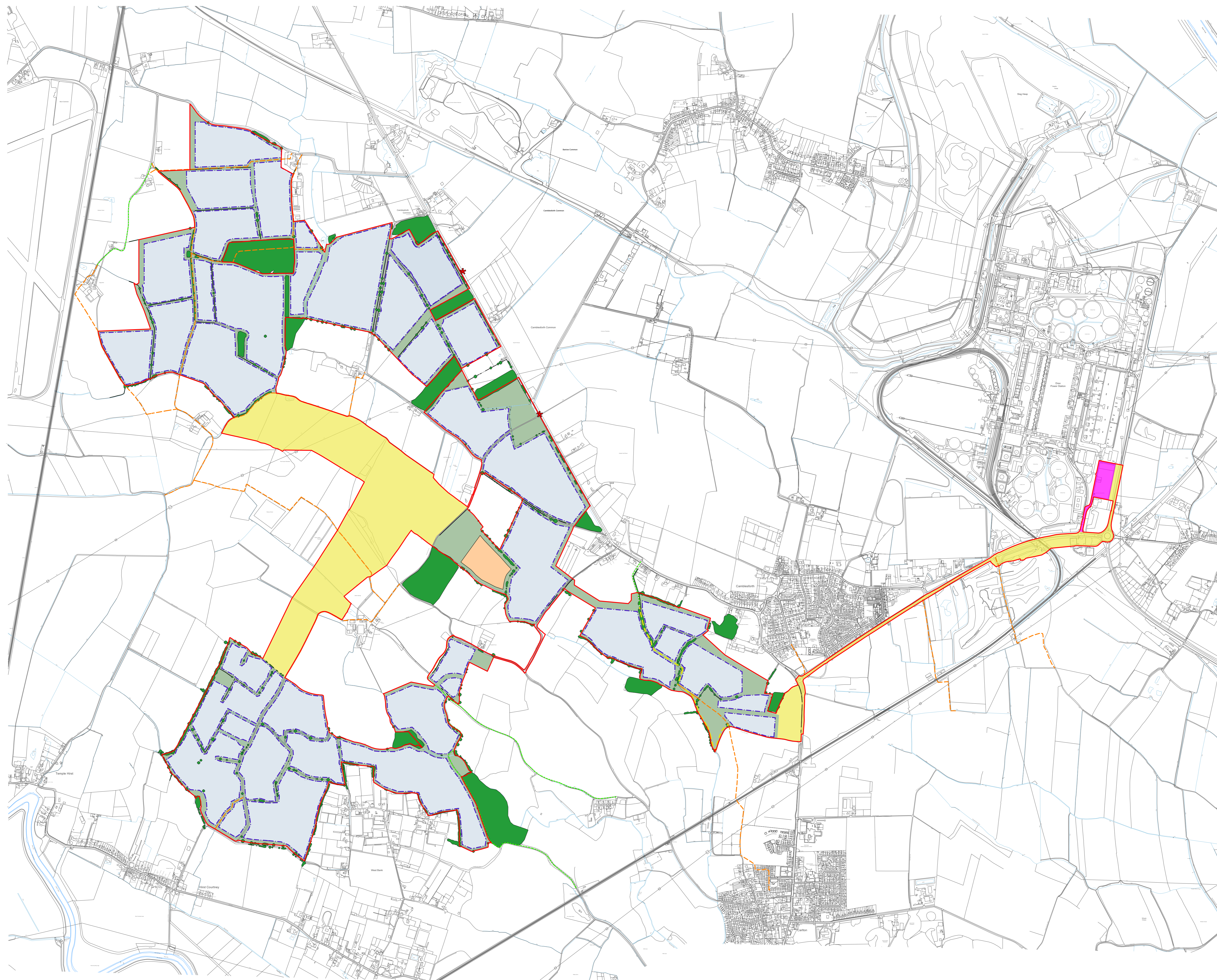
3.2. The Proposed Development

- 3.2.1. The Proposed Development comprises a renewable solar energy generating project with a modelled operational lifespan of up to 40 years. The Proposed Development consists of ground-mounted solar photovoltaic ('PV') arrays and on-Site energy storage, together with associated infrastructure and an underground cable connection to the existing Drax 132kV National Grid Substation. The agreed grid connection for the Proposed Development will allow the export (to the national grid) of up to 190 megawatts of electricity at any time.
- 3.2.2. The Proposed Development includes the following key elements:
- Solar PV modules (the Solar Farm Zone shown on Figure 3.1 consists of panels

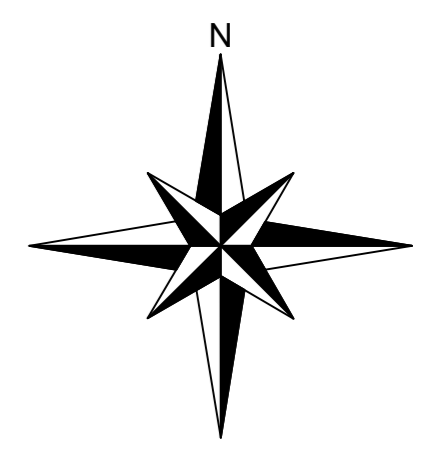
capable of capturing sunlight to generate electricity) (panels which convert sunlight into electrical energy);

- Mounting structures (a metal frame to hold the panels);
- Field stations including inverters (electrical equipment to convert direct current power to alternating current), transformers (transform electricity to higher voltage) and switchgear (a combination of electrical disconnect switches, fuses or circuit breakers used to control, protect and isolate electrical equipment);
- On-Site substation with a maximum voltage of 132 kilovolts (kV) (containing electrical equipment required to switch, transform and convert electricity and provide reactive power compensation) and energy storage compound (including the battery energy storage system);
- Distribution cables (low voltage cables between the solar PV modules, inverters and field stations);
- Grid connection cables (underground cables with a maximum voltage of 132 kilovolts connecting the Site to the National Grid substation at Drax Power Station) (see Figure 3.1);
- Perimeter fencing (wire fencing up to 2.1m tall), security (including closed-circuit television ('CCTV')) and ancillary infrastructure;
- Access tracks;
- Landscape and ecological enhancements; and
- Archaeological mitigation.

Figure 3.1 Parameter Plan



- KEY**
- Site Boundary
 - Existing Vegetation
 - Public Footpath
 - Other Route with Public Access
 - Permissive Footpath
 - Security Fence
 - Solar Farm Zone
Includes:
- Solar PV Modules
- Inverter Transformers
- Access Tracks
- Access Gates
- CCTV
- Associated Cabling
 - Substation and Battery Energy Storage System (BESS) Compound
Includes:
- 152kV Substation
- BESS and associated infrastructure
- Access Tracks
- Access Gates
- Fencing
- Earth Flood Defence Bund
- Attenuation Ponds
- CCTV
- Water Tanks
- Associated Cabling
 - National Grid Substation and Access
 - Green Infrastructure
Includes:
- Habitat Areas
- Access Track Crossings
 - ★ Proposed Site Entrance
 - Underground Cable Corridor



- Revisions:
- First Issue- 21/04/2023 JS
 - 01 - (28/04/2023 JS) Revised boundary
 - 02 - (12/06/2023 JS) Revised boundary
 - 03 - (15/06/2023 JS) Revised layout
 - 04 - (20/07/2023 JS) Revised layout and boundary
 - 05 - (04/08/2023 AD) Key and graphical changes
 - 06 - (30/08/2023 JS) Revised layout and key updates
 - 07 - (11/10/2023 JS) Revised boundary
 - 08 - (01/02/2024 JS) Revised layout and boundary
 - 09 - (07/02/2024 JS) Revised boundary
 - 10 - (15/02/2024 AH) Revised boundary
 - 11 - (15/04/2024 JS) Revised layout

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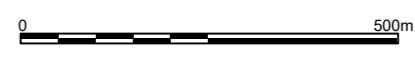
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**Figure 3.1
Parameter Plan**

DRWG No: DX-01-P02	Rev: 11	Sht no: -
Drawn by: JS	Checked by: KL	
Scale: 1:10,000 @ A1	Date: 15/04/2024	



4. Alternatives and Design Evolution

4.1. Introduction

4.1.1. Under the EIA Regulations, the Applicant must provide a description in the ES of the reasonable alternatives that have been studied by the Applicant that are relevant to the Proposed Development and indicate the main reasons for selecting the Proposed Development.

4.2. Site Selection

4.2.1. One key commercial requirement for a solar project is the ability to export the electricity generated either to the national grid infrastructure or to a local energy user. There is an available grid connection at Drax 132 kV National Grid Substation and therefore a search for suitable land within 5km of Drax Power Station was conducted to find an appropriate Site. The Site had appropriate sunlight levels (irradiance) and relatively flat but gently undulating topography which would provide a uniform exposure to irradiance. The search also considered: proximity to residential dwellings; proximity to areas protected for landscape and/or ecological importance; glint and glare; ability to access a site; flood risk; agricultural land value; and agricultural land availability.

4.2.2. Following an analysis of the above, the Applicant concluded that the Site represented a suitable area for solar and energy storage development that could connect to the National Grid substation at Drax Power Station.

4.3. The 'do nothing' Alternative

4.3.1. Under the 'do nothing' scenario, the Site would remain in agricultural use and the beneficial and adverse effects outlined in the ES relating to the Proposed Development would not occur.

4.3.2. The Proposed Development will have an export capacity of 190 megawatts which could supply the approximate annual domestic needs of 44,800 homes (equivalent to an approximate saving of 35,500 tonnes of CO₂ per year in England). Therefore the Proposed Development would contribute to the UK's requirement to reduce carbon emissions and to achieve its goal of net zero by 2050. As a result, the 'do

nothing' alternative is not considered to be a reasonable alternative.

4.4. Consideration of Alternative Designs

- 4.4.1. The Proposed Development design has evolved through an iterative process of design review and update. Changes made since the initial design included amending the extent of the Site to reduce visibility of the Proposed Development from residential dwellings in the nearby villages of Hirst Courtney and Camblesforth
- 4.4.2. The Proposed Development will retain the existing field boundary structure of ditches, hedgerows, trees and woodland blocks, with appropriate offsets to these features, avoiding loss or change to the existing landscape character. New hedges have been added to the Proposed Development's layout, along the lines of historic hedgerows, breaking up the visual impact of the larger fields. Permissive paths to connect and improve the existing PRoW network will be provided. A series of new habitat areas with a mosaic of native trees, grassland and wetland features to establish new habitats is also proposed.
- 4.4.3. The Site layout has also changed in response to areas of flood risk, including the location of the BESS and substation is areas of very low surface water flood risk, incorporation of a minimum gap of 0.3m between the maximum flood level and the stow position of the PV panels, any buildings on site will be raised at least 0.3m above the existing ground level and a defence barrier made of earth will be implemented around the BESS and substation compound to mitigate any flood risk to the infrastructure.

5. Construction and Decommissioning Methodology and Phasing

5.1. Construction Activity

5.1.1. Construction of the Proposed Development is anticipated to take approximately 12 months, commencing no earlier than 2027 and with completion of the Proposed Development in 2029. During construction, a temporary primary construction compound will be constructed, with up to five temporary secondary construction compounds which will be removed once construction is completed with the ground reinstated.

5.1.2. The activities on-Site during the construction phase will include the following:

- Site establishment and enabling works for construction:
 - Delivery of construction materials, plant and equipment;
 - Establishment of site fencing and construction compounds;
 - Construction of internal access roads;
 - Setting out the positions for the infrastructure and equipment; and
 - Works for the cable routes.
- Construction of the Proposed Development:
 - Installation of solar PV array foundations and piling;
 - Construction of on-site electrical infrastructure to facilitate the generation of electricity such as solar PV framing and panels, 132kV substation and energy storage;
 - Laying of cables including Point of Connection ('POC') cable groundworks and string cabling between the solar PV array;
 - Installation of security lighting, CCTV, fencing and gates;
 - Testing and commissioning;
 - Site clearance and compound removal; and
 - Landscape planting and ecological enhancements.

5.2. Construction Phase Management

- 5.2.1. An Outline Construction Traffic Management Plan ('oCTMP') is being submitted with the ES. This document will set out the methods that will be used to regulate the delivery of materials and movement of construction personnel to the Site during the construction phase.
- 5.2.2. An Outline Construction Environmental Management Plan ('oCEMP') is being submitted with the ES. The oCEMP will work in parallel with the oCTMP and will detail the environmental requirements relevant to the construction phase to ensure good construction practices and reduce the risk of accidents or potential for adverse, avoidable effects on the environment.
- 5.2.3. The final, detailed CEMP and CTMP documents will be prepared following the grant of the DCO and submitted to North Yorkshire Council ('NYC') for approval prior to construction work starting on the Site. This will be secured through appropriately worded DCO requirements, which are the conditions attached to this DCO that control the construction, commissioning, operation and decommissioning of the approved works.
- 5.2.4. Construction activities will be undertaken within the core hours of Monday to Friday 08:00-18:00 and 08:00-13:00 on Saturdays. Works may be required outside of these hours, which would be agreed with NYC in advance.
- 5.2.5. Where possible, deliveries to the Site will be timed to avoid Heavy Goods Vehicle ('HGV') movements during the traditional morning and afternoon traffic peak times, 08:00-09:00 and 17:00-18:00.

5.3. Decommissioning Phase Management

- 5.3.1. The decommissioning of the Proposed Development is anticipated to take approximately 12 months and will involve all the solar infrastructure including PV modules, mounting structures, cabling on or near to the surface, inverters stations, fencing and ancillary infrastructure, and the substation and battery energy storage system ('BESS') compound being removed and recycled, or disposed of in accordance with good practice and market conditions at that time. All compounds and temporary access tracks will also be removed once decommissioning is complete.

- 5.3.2. An Outline Decommissioning Environmental Management Plan ('oDEMP') is being submitted with the ES. Similar to the oCEMP, the oDEMP will detail the environmental requirements relevant to the decommissioning phase to ensure good working practices and reduce the risk of accidents or potential for adverse, avoidable, effects on the environment.
- 5.3.3. The final, detailed DEMP and a Decommissioning Traffic Management Plan (DTMP) will be submitted to NYC for approval prior to decommissioning starting on the Site. This will be secured through an appropriately worded DCO requirement.

6. Cultural Heritage

6.1. Baseline

- 6.1.1. There are no designated heritage assets (listed buildings or conservation areas) on the Site nor, Registered Parks and Gardens, Registered Battlefields or World Heritage Sites within 3km of the Site. The following above-ground designated heritage assets were located within 3km of the Site: four Scheduled Monuments; five Grade I Listed Buildings; one Grade II* Listed Building; 65 Grade II Listed Buildings; and two Conservation Areas. Designate heritage assets Manor Farmhouse (Grade I Listed); Camblesforth Hall (Grade II Listed); and Carlton Towers (Grade I Listed), as shown in Figure 6.1, have been the focus of the assessment as they are close to the Site and there is potential for adverse effects to their settings as a result of the Proposed Development.
- 6.1.2. The Geophysical Survey (**Appendix 6.3 [EN010140/APP/6.3.3]**) demonstrates that within the Site there are areas of archaeological potential, comprising D-shaped enclosures with likely internal features. These enclosures may be pre-historic or Roman in date. The area of the underground cable corridor has been excluded from further geophysical survey and will instead be subject to an Archaeological Watching Brief during the construction phase, as agreed with the NYC Principal Archaeologist. This was agreed due to the focus and minimal below-ground impact during the insertion of the cable, which would not cause significant impacts to any below-ground archaeological assets.

6.2. Assessment

- 6.2.1. Potential effects on buried archaeology result from direct impacts associated with a proposed development, whereas a proposed development's effects on built heritage assets result from changes to their setting. Using the baseline information gathered and the details of the Proposed Development, an assessment of the potential for direct, indirect, beneficial, adverse and cumulative effects was undertaken.
- 6.2.2. Discrete areas of archaeological potential identified will be subject to mitigation measures set out in the Archaeological Mitigation Strategy during the construction phase. As a result, during the construction phase, direct effects on identified areas of archaeology would be neutral. Through the implementation of the watching brief,

direct permanent effects to the potential unidentified archaeology in the underground cable corridor would be minor adverse. The construction phase would result in a short-term, temporary increase in construction traffic movement and related construction activity, but it is not considered this would result in any impact to the heritage significance or value of any of the heritage assets, and therefore indirect temporary effects to the designated heritage assets would be neutral. These effects are not considered to be significant in EIA terms.

6.2.3. There would be no below-ground activity within the Site during the operational phase, so there would be no effects on below-ground archaeology. Once the Proposed Development is completed and operational, permanent effects on the setting of the Camblesforth Hall and Manor Farmhouse would be neutral and effects on the setting of the Carlton Towers would be minor adverse, due to the visibility of the change of character of the land from agricultural fields to energy generation. None of these effects are considered significant in EIA terms.

6.2.4. During decommissioning, there is likely to be a minor beneficial effect on Carlton Towers due to the removal of the Proposed Development infrastructure and restoration of the Site to agricultural use. This effect is not significant in EIA terms.

6.3. Mitigation

Embedded Mitigation

6.3.1. The design of the Solar Farm Zone has evolved to minimise potential effects on cultural heritage. This included moving the solar PV panels away from sensitive heritage receptors and reinstating hedgerows along the field boundaries to provide additional screening. In addition, within areas of identified archaeology, solar PV modules will be on ground-mounted footings, with any cables raised and attached beneath the PV panels to avoid below ground disturbance or damage to the archaeology. Furthermore, access tracks crossing these areas will be raised above ground level and lighter weight vehicles with low-impact tires will be used.

Measures to be adopted by the Project

6.3.2. An Archaeological Mitigation Strategy has been developed for the Site through consultation with the NYC Principal Archaeologist. The mitigation includes an Archaeological Watching Brief to be undertaken during the implementation of the

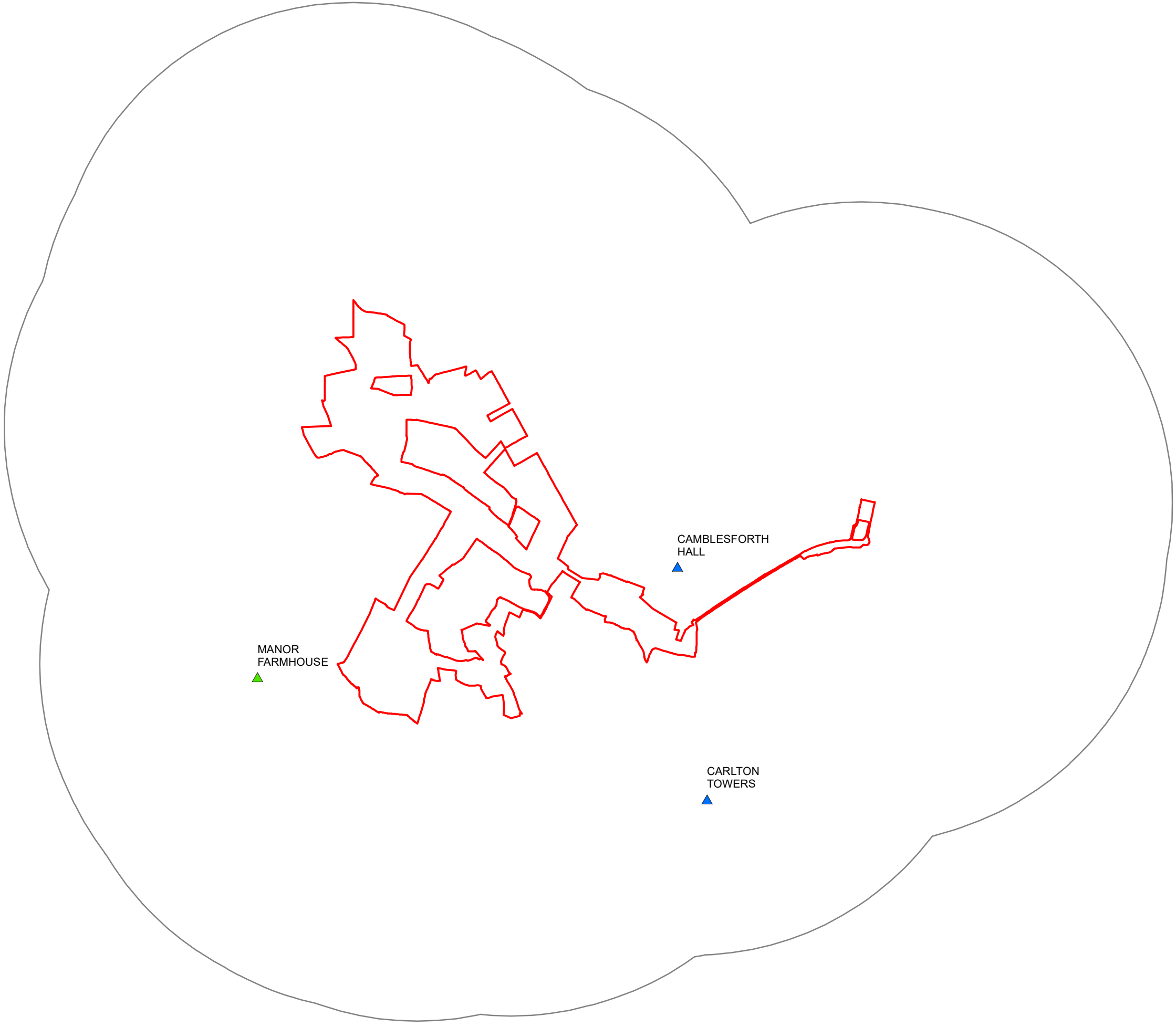
underground cable corridor.

- 6.3.3. During the operational phase of the Proposed Development, interpretation boards will be established at the Site, providing information on the archaeological context of the Site and surrounding area and help disseminate information to the public.

6.4. Residual Effects

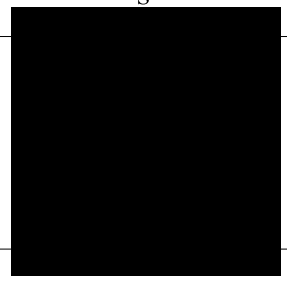
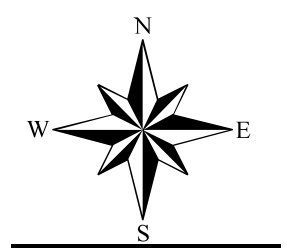
- 6.4.1. The residual construction phase and operational effects on cultural heritage are considered to range from neutral to minor adverse. Decommissioning effects are considered to range from neutral to minor beneficial. These residual effects on cultural heritage are not considered to be significant in EIA terms.

Figure 6.1 Assets Considered Within ES

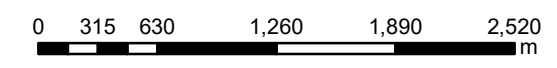


Key

- Site
- 3km Buffer
- ▲ Grade I Listed Building
- ▲ Grade II Listed Building



Project Title		
Helios Renewable Energy Project		
Drawing Title		
Figure 6.1 - Assets Considered Within ES		
DRWG No P22-0212_6.1	Rev -	Sht no -
Drawn by DS	Checked by LG	
Scale 1:40,000 @ A3	Date 15/04/2024	



7. Landscape and Views

7.1. Baseline

7.1.1. The Site is not designated in landscape terms, and there are no national designations for landscape or scenic beauty within the study area. However, the following designations within the Site's context are of note:

- Kerrick Spring Wood, located adjacent to the Site's south-eastern boundary is designated Ancient Woodland⁴;
- There are several Conservation Areas within the study area, the nearest of which is 2km north within Selby;
- Brayton Barff and Hambleton Hough, approximately 3.05km and 5.5km north-west of the Site respectively, are locally designated landscapes; and
- Listed Buildings are dispersed throughout the study area.

7.1.2. The Site comprises an extensive area of arable farmland separated by fragmented hedgerow and ditches with occasional trees and woodland and sub-divided by country lanes. It has a simple, open and strongly agricultural character with a strong visual influence of industrial built form.

7.1.3. In visual terms, as an extensive area of open farmland, with a patchy vegetation pattern, the Site is inevitably visible in close range views from the network of PRoW and rural lanes that extend across and adjacent to it. However, with increased distance, the combination of a flat landscape and screening provided by fragmented field boundaries, occasional woodland blocks and agricultural buildings results in the Site interior being strongly filtered or screened in longer distance views.

7.2. Assessment

7.2.1. During construction the principal changes that will have an effect on landscape character, landscape features and visual amenity include the loss of openness and alterations to the existing appearance of the Site; the introduction of new temporary elements including temporary access tracks, construction compounds, material stockpiles, welfare facilities, plant and machinery; groundworks, topsoil stripping and

⁴ Ancient woodlands are woods that have existed since at least AD 1600 and have developed irreplaceable, complex ecosystems.

excavation; noise and movement of plant and machinery; and the building and emergence of new built forms including solar panels, ancillary structures and fencing.

- 7.2.2. These changes will result in moderate effects on the Site and overall character of the Site and surrounding area as well as effects on hedgerows, trees and woodlands where they are largely retained and protected. Overall, this will result in no significant effects to the landscape, largely due to the short-term duration of the activities.
- 7.2.3. During construction there will be temporary moderate adverse effects for walkers and cyclists of PRoW within or adjacent to the Site and residents at Quosquo Cottages, Rosehill Farm and Primrose Hill as a result of close-range open views of construction activities across an extensive area. Though none of the effects to visual receptors are considered significant.
- 7.2.4. During operation, the Proposed Development will give rise to significant landscape effects in Year 1 on the fields within the Site due to their change of use and the long-term presence of the solar panels and associated infrastructure. Though by Year 15 with the implantation of the landscape strategy, and associated maintenance in line with a Landscape and Ecological Management Plan, it is anticipated that all effects would be not significant due to the level of new planting and screening this would provide to reduce the visibility of the Proposed Development, and restoring the landscape on Site. There will also be long-term moderate adverse effects on the character of the Site as a result of the Proposed Development and associated initial landscape maintenance operations. All effects on the landscape will be moderate or less and not significant.
- 7.2.5. During operation, there will be adverse effects to walkers and cyclists on the PRoW within or adjacent to the Site and residents at Rosehill Farm and Primrose Hill as a result of close-range open views of the Proposed Development across an extensive area at Year 1 (first year of operation and worst case scenario). With the implementation of the landscape strategy and the reduction in visibility associated with the extensive planting, all visual effects would be moderate adverse or less and therefore not significant.
- 7.2.6. The effects during decommissioning will be similar to the construction phase in terms of landscape and visual effects with the construction process carried out in reverse over a similar duration, and the landscape subsequently restored to its baseline

conditions.

7.3. Mitigation

Embedded Mitigation

- 7.3.1. The design of the Proposed Development and its integrated landscape strategy has evolved leading to changes to the design including the removal of fields from the Proposed Development and the reduction in the area of the substation and BESS parameters. Development characteristics including a height restriction on the solar PV panels, inverters/transformers and fences, and ensuring no impacts to existing trees and woodland along with the creation and enhancement of habitats such as hedgerows and grasslands were also implemented to mitigate the landscape and visual effects.

Measures to be adopted by the Project

- 7.3.2. Best practice measures will be implemented during the construction and decommissioning phases of the Proposed Development, and these will include the operation of a detailed CEMP and DEMP. These documents will include measures for the protection of existing vegetation on the Site, limiting hours of work on the Site, ensuring that all unloading/loading of materials and equipment is undertaken within the Site boundary, and cleaning construction and decommissioning vehicles regularly to limit noise, dust and dirt levels.
- 7.3.3. Mitigation to be applied to the operational phase of the Proposed Development comprises the maintenance and management of the proposed landscape planting, which will be set out in a Landscape Environmental Management Plan ('LEMP'), and secured by a DCO requirement.

Additional Mitigation

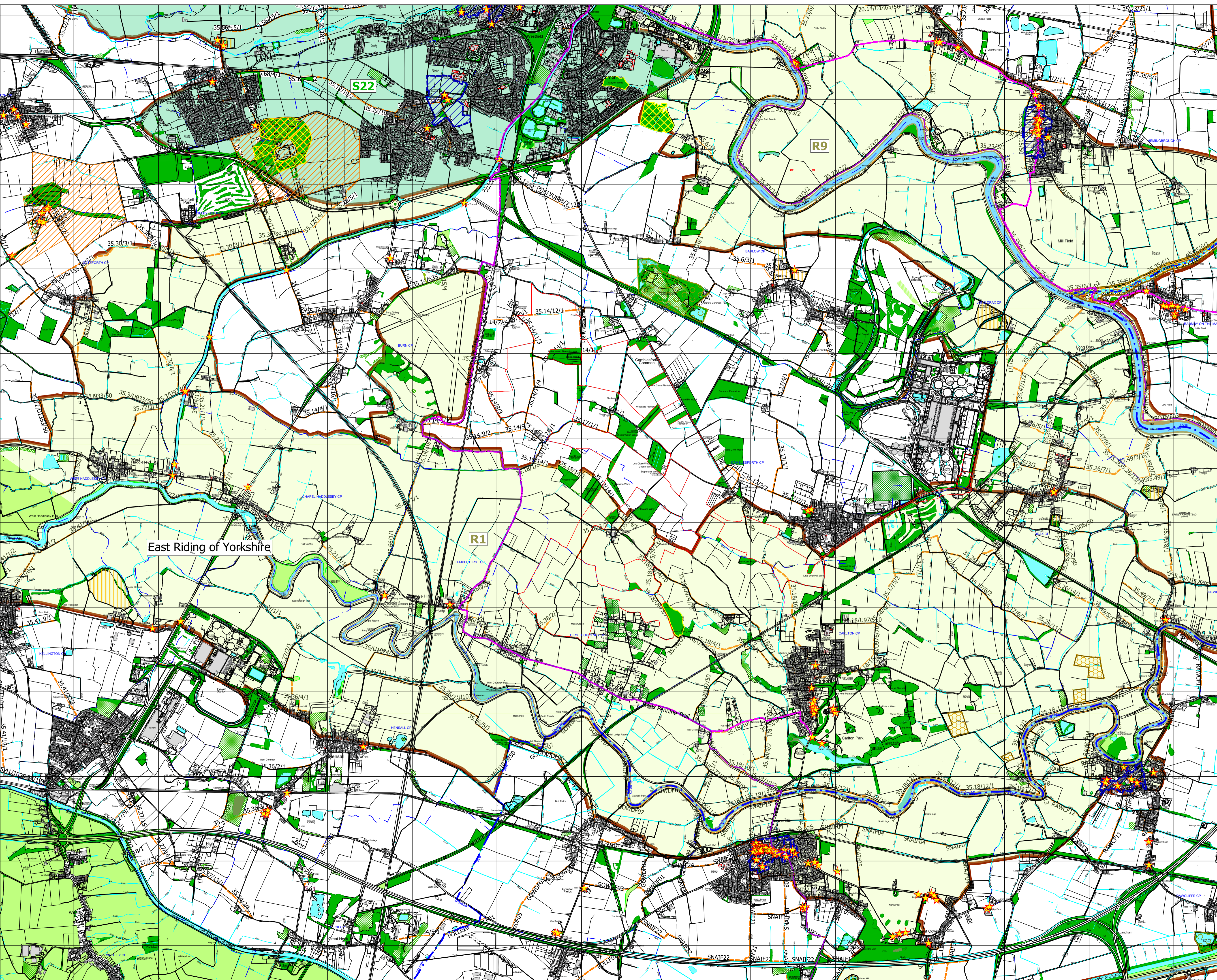
- 7.3.4. No additional mitigation measures were considered beyond the management and maintenance of the proposed landscape planting once the Proposed Development is operational.




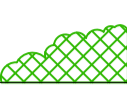

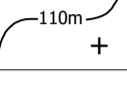
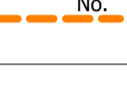






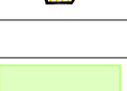



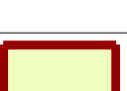
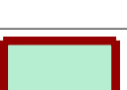

7.4. Residual Effects

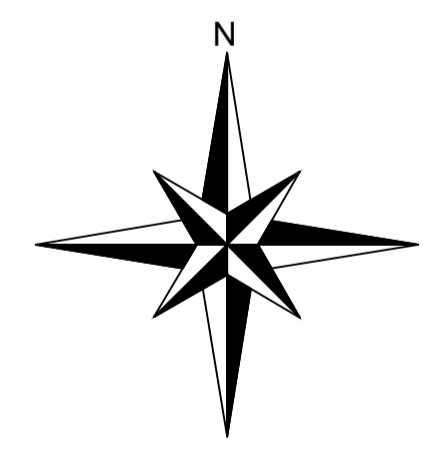
- 7.4.1. Through the effective implementation of the above embedded mitigation and

measures to be adopted by the project, the landscape and visual effects during construction, operation and decommissioning will be reduced and minimised where practicable to ensure that there are no significant residual effects.

Figure 7.1 Designations in the Surrounding Area



- KEY**
-  Site Boundary
 -  Ancient Woodland #
 -  Existing Woodlands, Copses and Tree Belts ^
 -  Existing Scrub ^
 -  Existing Water Courses and Features ^
 -  Contours/Spot Heights (Metres AOD) ^
 -  Public Rights of Way *
 -  National Trails # / Long Distance Walks ^
 -  Countryside Rights of Way Access Areas #
 -  Sustrans Cycle Route +
 -  Cycle Route ++
 -  Listed Buildings ~
 -  Conservation Area #/##
 -  Scheduled Monument ~
 -  Green Belt ^^
 -  Sites of Special Scientific Interest #
 -  Local Nature Reserve #
 -  Locally Important Landscape Area (Policy ENV15)
 -  Strategic/Regional Green Infrastructure Corridor
 -  Sub Regional Green Infrastructure Corridor



Project Title:
Helios Renewable Energy Project

Drawing Title:
Context and Designations Plan

DRWG No: Figure 7.1	Rev: 02	Sht no: -
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Drawn by: JM	Checked by: SM
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Scale: 1:20,000 @ A1	Date: JUNE 2024
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8. Biodiversity

8.1. Baseline

- 8.1.1. The dominant habitats on the Site are arable fields bound by hedgerows, drainage ditches, and tree lines. Scattered woodland parcels are situated within, and directly adjacent to, the Site.
- 8.1.2. The Site is not located within any statutory designated sites for nature conservation (those given special status as protected areas because of their natural and cultural importance including National Landscapes, National Parks, Sites of Special Scientific Interest, Special Areas of Conservation, Special Protection Areas and Ramsar Sites).
- 8.1.3. However, there are 10 international (including European) statutory designated sites within 10km of the Site, and three UK statutory designated sites located within a 5km radius of the Site boundary, the most important comprising: Barlow Common Local Nature Reserve; Eskamhorn Meadows Site of Special Scientific Interest ('SSSI'); River Derwent Special Area of Conservation ('SAC') and SSSI; Lower Derwent Valley SAC; Humber Estuary SAC; Thorne Moor SAC; Skipwith Common SAC; Thorne & Hatfield Moors Special Protection Area ('SPA'); Lower Derwent Valley SPA/Ramsar site; and Humber Estuary SPA/Ramsar site.
- 8.1.4. The Site is also not located within a non-statutory designated site for nature conservation. There are 15 non-statutory designated sites within 2km of the Site, the closest being Field near Primrose Hill, Cat Babbleton North Yorkshire Site of Importance for Nature Conservation ('SINC') and Sand Pitt Wood and Barffs Close Plantation North Yorkshire SINC, both located adjacent to the Site.
- 8.1.5. The habitats within the Site predominantly comprise arable fields that are bounded by a combination of hedgerows, tree lines, grassland field margins, woodlands and ditches. One dry pond is located within the Site. These habitats are used by



8.2. Assessment

- 8.2.1. This assessment has been undertaken with reference to applicable wildlife and countryside legislation, national and local planning policy, and the Chartered Institute

of Ecology and Environmental Management ('CIEEM') (2018) guidelines. For the purposes of the ES Chapter, the CIEEM guidelines on ecological impact assessment have been aligned with the significance ratings as set out in Chapter 2 on this NTS, ranging from negligible to major effects. Moderate and major effects are considered significant. The significance of effects is also determined by the scale at which the effect is felt: local, regional, national and international.

8.2.2. The Proposed Development has been identified as having an operational lifespan of up to 40 years for the purpose of the assessment. Ecological effects will be described in terms of their duration as short, medium term and long-term as follows:

- Short term effects are defined as 0 - 3 years;
- Medium term effects are defined as 3 - 15 years; and
- Long term effects are defined as > 15 years.

8.2.3. During construction, the Proposed Development's temporary effects on the non-statutory designated sites would be negligible. The direct temporary effects on habitats on the Site and indirect temporary effects to neighbouring habitats would be negligible-minor adverse. However, the overall temporary effect on habitats would be major beneficial due to the delivery of measurable biodiversity net gains through habitat enhancement and provision. Temporary effects on breeding bird species would be minor adverse. All of these effects are not significant, with the exception of the major beneficial effect to habitats, which is significant in EIA terms.

8.2.4. During the Proposed Development's operational phase, it is considered that with the delivery of new long-term habitats of high ecological value, the delivery of enhancements to extant habitat, the management of habitat buffers, good practice measures, habitat connectivity with the non-designated statutory sites and habitats within the wider environment will create a larger, stronger, and more ecologically resilient natural corridors in the landscape compared to the current baseline, which comprises intensively managed farmland bordering the non-statutory sites, the effects on non-statutory designated sites would therefore be moderate beneficial, and the effects on habitats would be major beneficial, both of which are considered significant in EIA terms.

8.2.5. During decommissioning, the Proposed Development's temporary effects on non-

statutory designated sites would be negligible and negligible-minor adverse on habitats are anticipated. The temporary effects from the Proposed Development's decommissioning on breeding birds would be minor adverse. All of these effects are not significant in EIA terms.

8.3. Mitigation

Embedded Mitigation

- 8.3.1. The design of the Proposed Development includes retaining hedgerows, ditches and woodlands, and focusing development on areas of lower ecological value. The implementation of buffer zones⁵ to sensitive or high value ecological features and habitat creation are also proposed.

Measures to be adopted by the Project

- 8.3.2. A detailed CEMP, will include measures such as habitat protection buffers, species protection plans, managed lighting and noise/traffic, and a commitment to the implementation of an Ecological Clerk of Works⁶.
- 8.3.3. Through the provision of biodiversity net gain and an Outline landscape environmental management plan ('oLEMP'), the Proposed Development will deliver enhancements to the habitats (including deciduous woodland, hedgerows, ponds, arable farmlands and ditches) present on the Site.

Additional Mitigation

- 8.3.4. No additional mitigation measures are required during the construction, operational and decommissioning phases.

8.4. Residual Effects

- 8.4.1. As a result of the implementation of the embedded mitigation and measures to be adopted by the Project, a significant long-term major beneficial residual effect at the local level on habitats is anticipated during the Proposed Development's construction phase, due to the provision of extensive habitat creation and enhancement. A minor

⁵ Defined areas of land in which no works are proposed to provide protection to ecological receptors.

⁶ An Ecological Clerk of Works oversees the management of the risks on construction sites associated with managing biodiversity to comply with relevant wildlife law and commitments secured in the consent for a development.

adverse effect on breeding birds is also expected.

- 8.4.2. During the Proposed Development's operational phase, a moderate beneficial residual effect at a county level has been identified on non-statutory designated sites and major beneficial effects on habitats at a local level are expected, through the implementation of habitat management practices which will improve habitat connectivity through natural corridors between the Site and wider environment.
- 8.4.3. During decommissioning, the Proposed Development's residual effects have been identified as negligible to minor adverse, which are not significant in EIA terms with the implementation of measures set out in the oDEMP avoid, minimise, and mitigate any adverse effects on habitats, and breeding birds.

9. Water Environment

9.1. Baseline

- 9.1.1. The 'water environment' refers to above ground features such as rivers, streams, ditches, lakes and ponds, as well as below ground features such as groundwater contained within rocks beneath the Site.
- 9.1.2. The Site lies predominantly within the catchment of the River Aire which lies approximately 750m south of the Site and is a tributary of the River Ouse and flows into the River Ouse approximately 6.75km to the east of the Solar Farm Zone before ultimately discharging to the sea via the Humber Estuary. At its closest point the River Ouse is approximately 2.2km downstream and northeast of the Site. There are also drainage ditches located across the Site along the boundaries of the fields, which drain into the River Aire and River Ouse. Currently the Site naturally drains by a combination of overland flow towards the low points and the drainage ditches which cross the Site and infiltrate into the underlying ground.
- 9.1.3. The Site is underlain by Sherwood Sandstone Group bedrock which is classified as a Principal Aquifer⁷. Above the Sherwood Sandstone Group is Brighton Sand Formation superficial deposits which are classified as a Secondary A Aquifer⁸. The soils within the Site have variable permeability with the potential for high groundwater likely to be present.
- 9.1.4. The southern, central and western areas of the Site fall within a groundwater Source Protection Zone (Zone III Total Catchment⁹). The majority of the northern part of the Site lies outside the designation, with a small area falling within Zone I Source Protection Zone¹⁰. The Site is identified as having a potential flood risk of high to very low for watercourses, surface water and groundwater, and low to very low for

⁷ Geological deposits that have high permeability – meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

⁸ Permeable geological layers capable of supporting water supplies at a local scale, and in some cases forming an important source of base flow to rivers.

⁹ The area protected surrounding a potable water supply source within which all the groundwater ends up at the abstraction point (where water is removed from the ground).

¹⁰ The zone within which it would take 50 days for a pollutant spilled to groundwater to travel to the water source. This zone would have a default minimum radius of 50m.

overwhelmed sewers and artificial sources.

9.2. Assessment

- 9.2.1. The Proposed Development has the potential to affect the water environment through changes in existing drainage patterns; the construction of new watercourse crossings and resultant elevated flood risk; and activities which could cause pollution and/or a degradation in water quality in watercourses, drainage ditches, groundwater or nearby sensitive ecological receptors.
- 9.2.2. During construction, the Proposed Development's effects relating to surface water runoff rates, and resultant flood risk is negligible to minor adverse. The effects relating to new watercourse crossings on flood risk would be negligible. Following the implementation of best practice construction site management to be secured via the Construction Environmental Management Plan, effects on the water quality of on-Site watercourses would be negligible; effects on nearby sensitive ecological receptors would be negligible; effects relating to contamination of the River Ouse and River Aire would be minor adverse to negligible; effects relating to contamination of the Humber Estuary would be minor adverse; and effects on water quality of groundwater would be major adverse to minor adverse.
- 9.2.3. During the operational phase, the Proposed Development will introduce new drainage methods including swales¹¹, long-term effects relating to surface water runoff rates, and resultant flood risk would be moderate to minor beneficial; the effects relating to new watercourse crossings on flood risk would be negligible. In addition, during operation the Proposed Development includes the potential for pollution from spillages and sediment from maintenance vehicles and on-site plant, such as transformers, the effects on water quality on on-Site watercourses would be negligible; the effects relating to the contamination of the River Ouse, River Aire and Humber Estuary would be minor adverse to negligible; and the effects on water quality of groundwater would be minor adverse.
- 9.2.4. During the decommissioning similar effects may occur as the construction phase, the effects relating to surface water runoff rates, and resultant flood risk would be minor adverse to negligible; the effects on water quality of on-Site watercourses would be negligible; the effects relating to the contamination of the River Ouse and River Aire

¹¹ A designed landscape feature designed to manage surface water run off.

would be minor adverse to negligible; the effects relating to the contamination of the Humber Estuary would be minor adverse; and effects on the water quality of groundwater would be minor to moderate adverse, which is considered significant but would be temporary and reversible with time.

9.3. Mitigation

Embedded Mitigation

- 9.3.1. The Proposed Development's layout has been subject to a sequential approach to ensure any sensitive infrastructure is located in the areas of lowest flood risk. The Proposed Development will not impact the general existing drainage characteristics of the Site. However, the Proposed Development's design will include the provision of swales to encourage loss by surface water by infiltration.

Measures to be adopted by the Project

- 9.3.2. During the Proposed Development's construction, operation, and decommissioning phases, if a flood alert is issued by the Environment Agency, contractors and operating staff would evacuate the Site.
- 9.3.3. During construction, a detailed CEMP will be implemented which will outline best practice site management and implement principles of pollution prevention, construction activities will be schedule to avoid periods of elevated flood risk and use of temporary drainage if required.
- 9.3.4. Maintenance visits during operation will be scheduled for periods outside of elevated flood risk. Furthermore, retained and new vegetation across the Site will be maintained in accordance with the LEMP to improve soil structure and stability as well as reduce soil erosion and overland flow.
- 9.3.5. A DEMP containing an enhanced monitoring schedule and pollution control measures to safeguard water quality during the decommissioning phase.

Additional Mitigation

- 9.3.6. During construction and decommissioning, on-Site watercourses and groundwater will be monitored regularly to ensure there is no deterioration of water quality. The design of the Proposed Development's equipment and any floodplain compensation,

if necessary to adapt to the maximum flood scenario tested, would be informed by Environment Agency site-specific flood modelling.

9.4. Residual Effects

- 9.4.1. Following additional mitigation measures and those adopted by the project, the Proposed Development's residual effects on the water environment during construction and decommissioning would be minor adverse to negligible and therefore not significant. During the Proposed Development's operational phase, residual effects would be moderate beneficial (significant) to negligible (not significant).

10. Transport and Access

10.1. Baseline

10.1.1. The Site is located in proximity to the A1041, Hirst Road, and the East Coast Main Railway Line. The Site contains several unclassified roads, which are primarily used for the movement of agricultural vehicles between the arable fields. In addition, several PRoWs cross or are adjacent to the Site. It is anticipated that construction vehicles will access the Site via the M62, A614, A645, A1041 Bawtry Road and then onto the Site by one of the two site entrances off the A1041.

10.2. Assessment

10.2.1. During construction, the Proposed Development's temporary short-term effects relating to road user and pedestrian safety, severance, vehicle driver and non-motorised delay, amenity (including fear and intimidation and including cyclists and equestrians), and hazardous/large loads would be negligible to minor adverse and therefore not significant.

10.2.2. During the operational phase, traffic movements are anticipated to be around five visits to the Site per month for maintenance purposes throughout the life-span of the Proposed Development. As such, all the long-term effects are assessed as being negligible, and therefore not significant.

10.2.3. The temporary short-term effects for the Proposed Development's decommissioning phase are considered to be the same as those assessed in the construction phase, with the construction process carried out in reverse over a similar duration. Therefore, the effects relating to road user and pedestrian safety, severance, vehicle driver and non-motorised delay, amenity (including fear and intimidation and including cyclists and equestrians), and hazardous/large loads would be negligible, and pedestrian amenity (including fear and intimidation and including cyclists and equestrians) would be minor adverse and therefore not significant.

10.3. Mitigation

Embedded Mitigation

10.3.1. Throughout the lifespan of the project (including construction and decommissioning),

access to all existing PRoWs within the Site will be maintained. Should temporary closures be required to ensure the safety of PRoW users, these will be for a short period during construction and decommissioning and alternate routes will be provided.

- 10.3.2. Access/ egress points (from the A1041) and on-Site tracks will be provided for vehicles during the construction, operational and decommissioning phases of the Proposed Development.
- 10.3.3. During the operational phase, planting and landscaping will be provided to conceal any reflections from the solar PV panels which could affect drivers on nearby roads.

Measures to be adopted by the Project

- 10.3.4. An outline Construction Traffic Management Plan has been prepared and submitted alongside the DCO application, which provides a framework for the management of construction vehicle movements during the construction phase. A detailed CTMP will be secured through a DCO requirement at detailed design, which will formalise the measures set out in the oCTMP. A Decommissioning Traffic Management Plan (DTMP) will be implemented during the decommissioning phase, and is anticipated to align with the principles of the oCTMP.

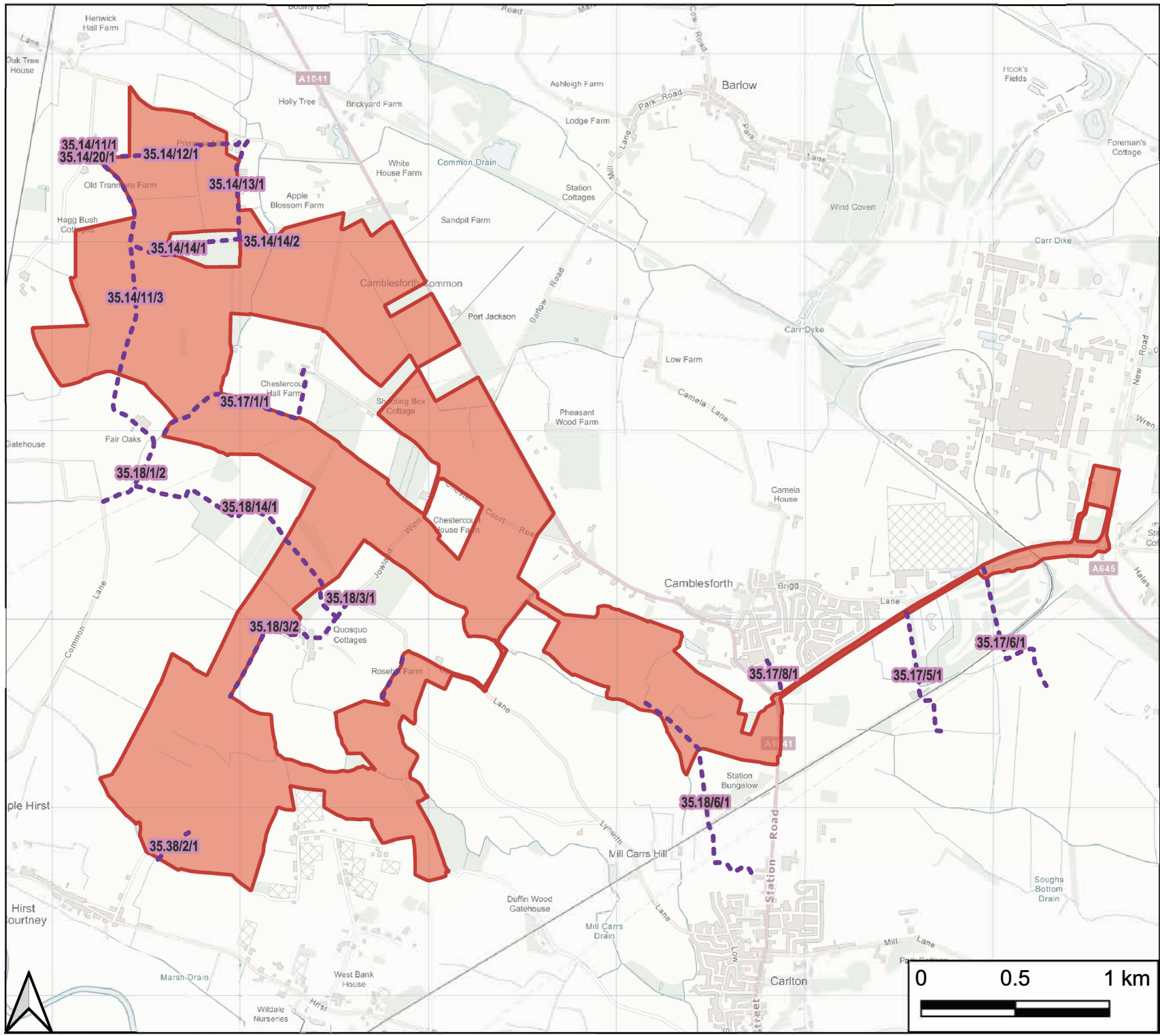
Additional Mitigation

- 10.3.5. No additional mitigation measures are required during the construction, operational and decommissioning phases.

10.4. Residual Effects

- 10.4.1. Residual temporary short-term effects on transport and access during construction and decommissioning phases would be negligible except for a minor adverse effect on pedestrian amenity (including fear and intimidation, including on cyclists and equestrians) and therefore not significant.
- 10.4.2. The residual long-term effects during operation of the Proposed Development would be negligible and therefore not significant.

Figure 10.1 Public Rights of Way



- Key**
- Site Boundary
 - Public Rights of Way



Project Title		
Helios Renewable Energy Project		
Drawing Title		
Public Rights of Way		
DRWG No	Figure 10.1	Rev
Drawn by	AC	Checked by
Scale	NTS	Date
		15/03/24



11. Noise

11.1. Baseline

11.1.1. The existing noise on the Site is dominated by local road and rail traffic movements. 46 noise sensitive receptors¹² ('NSR') have been identified within 400m of the Site including residential properties associated with Temple Hirst, Hirst Courtney, Camblesforth, Drax and the surrounding local roads which will experience an uplift in traffic flow during the Proposed Development's construction and decommissioning phases (see Figure 11.1).

11.2. Assessment

11.2.1. During construction, the main sources of noise will be from plant such as telehandlers, pilers and diesel bowsers associated with the construction activities. The noise levels from the construction activities are not predicted to exceed the adopted target noise criterion when works are undertaken at the closest points to the NSRs. Therefore, there will be short-term temporary effects of negligible to minor adverse significance which is not significant. There will also be negligible (not significant) effects from vibration associated with the construction activities at the NSRs.

11.2.2. Also during construction there will be short-term temporary noise effects on Jowland Winn Lane and Hardenshaw Lane due to the increase in vehicles using these minor roads. However, the localized noise will be diluted by the overall ambient background sound level from the major routes in the area, resulting in negligible to minor adverse not significant effects.

11.2.3. During operation, the maintenance activities are likely to have a negligible (not significant) effect to the amenity of the assessed residential NSRs to the Site.

11.2.4. The effects during decommissioning will be similar to the construction phase in terms of noise and vibration effects with the construction process carried out in reverse over a similar duration, and it is anticipated effects will be negligible to minor adverse (not significant).

¹² Noise sensitive receptors are land uses associated with human activities which are particularly sensitive to noise.

11.3. Mitigation

Embedded Mitigation

- 11.3.1. The Proposed Development has been designed to ensure that all noise generating plant is optimally located and distributed throughout the Site to minimise effects on NSRs and operational plant specification will be adopted as design targets to further minimise impacts.

Measures to be adopted by the Project

- 11.3.2. During construction a detailed CEMP will be implemented which will outline the best practice site management and ensure that the works are carried out in accordance with Best Practicable Means¹³.
- 11.3.3. During decommissioning a detailed DEMP will be implemented with similar measures to the detailed CEMP to outline best practice site management and ensure that the works are carried out in accordance with Best Practicable Means.

Additional Mitigation

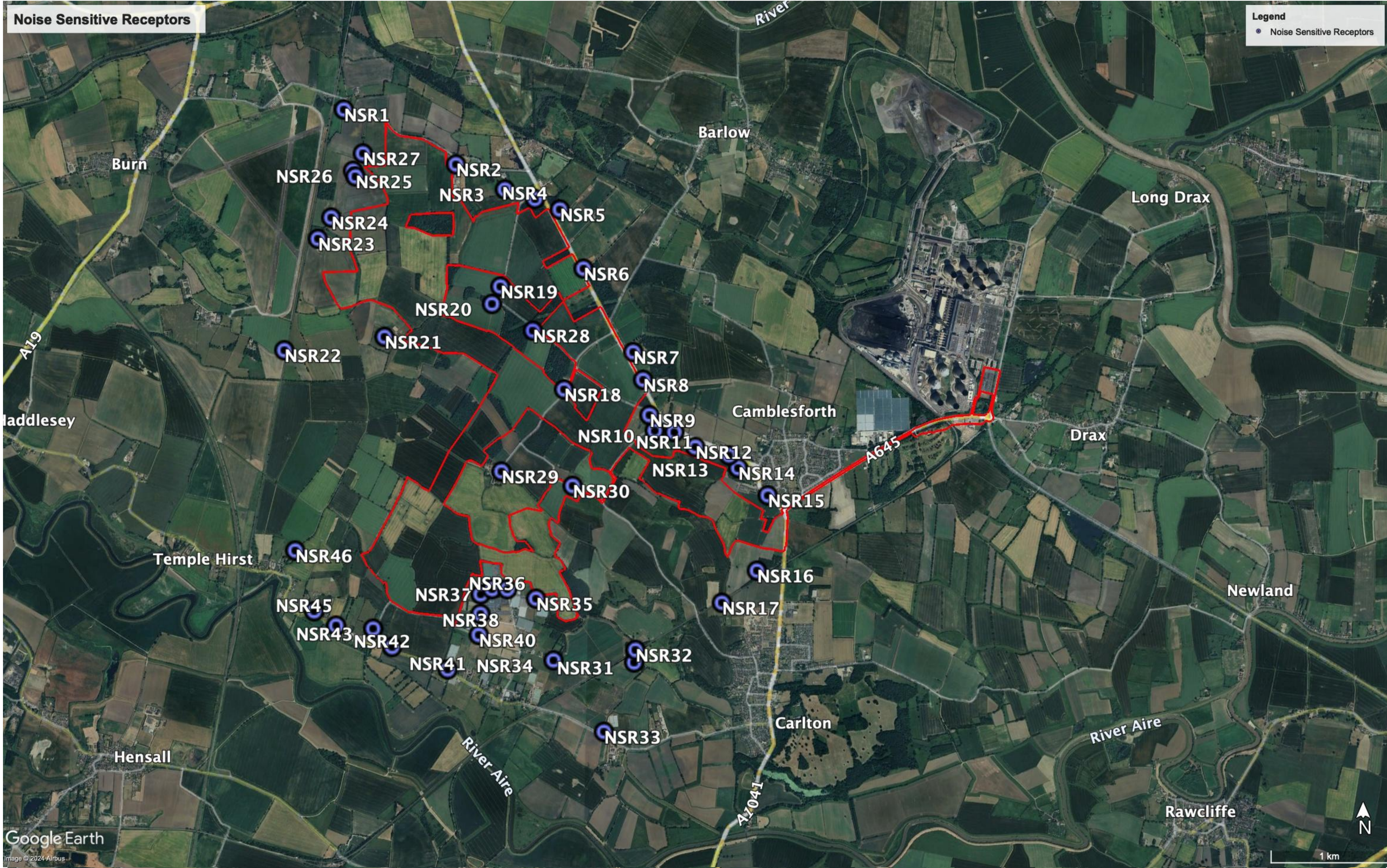
- 11.3.4. No additional mitigation measures are required during the Proposed Development's construction, operational and decommissioning phases.

11.4. Residual Effects

- 11.4.1. Through the effective implementation of embedded mitigation and measures to be adopted by the Project, the effects during construction and decommissioning will be short-term temporary and no greater than negligible significance at the closest NSR to any construction or decommissioning activities. There will be not significant effects
- 11.4.2. During operation, following the effective implementation of the embedded mitigation, there will be long-term negligible effects at the assessed NSRs which will be not significant.

¹³ Best Practicable Means refers to the measures put in place to reduce the risk of noise disturbance from a development on local noise sensitive receptors. These measures include the selection of the quietest techniques and equipment, in addition to considering factors such as timing, duration, location and opportunities for acoustic screening or separation, to ensure that impacts are controlled in so far as is reasonably practicable.

Figure 11.1 Noise Sensitive Receptors



Project Title
Helios Renewable Energy Project

Drawing Title
Noise Sensitive Receptors

DRWG No	Figure 11.1	Rev	-	Sheet no	-
Drawn by	JM	Checked by	NM		
Scale	1:1,684 @ A1	Date	19/03/2024		

12. Climate Change

12.1. Baseline

- 12.1.1. 'Climate' is generally understood to mean the weather conditions prevailing over a long period of time, and climate change refers to changes in recorded long-term climate trends.
- 12.1.2. Regionally, the climate is warm and temperate, with significant rainfall all year round. Within the local area, annual average rainfall is 646.93mm, with the driest month being March. The average annual maximum temperature is 13.67°C. July is the warmest month with an average of 21.11°C and December is the coldest month with temperatures averaging 0.17°C.
- 12.1.3. In Selby District, carbon emissions have declined steadily in the period between 2005 and 2021. There is a downward trend in the contribution from each of the four main sources of emissions¹⁴, with the greatest percentage decrease in commercial emissions at 80.6% over the 16 year period. Per capita emissions have declined from 18.2 tonnes of carbon dioxide ('CO₂') in 2005 to 11.6 tonnes of CO₂ in 2021.

12.2. Assessment

- 12.2.1. Carbon emissions arising from construction phase vehicle emissions are assessed as resulting in a minor adverse effect locally, prior to the implementation of mitigation measures. This is considered to be not significant in EIA terms.
- 12.2.2. The generation of electricity from the Proposed Development will displace generation of fossil fuel electricity generation. A carbon saving of approximately 36,558 tonnes of carbon dioxide equivalent ('tCO₂e')¹⁵ per year is predicted, which is a total saving of 1,462,334 tCO₂e over the Proposed Development's lifespan. This is considered to be in keeping with the trajectory to net zero by 2050, resulting in a major beneficial (significant) at the local level and a minor beneficial effect at the national level.
- 12.2.3. Anticipated effects from climate change adaptation relate to climate conditions

¹⁴ Industry, Commercial, Domestic, and Transport.

¹⁵ Carbon dioxide equivalent or 'CO₂e' means the number of metric tons of carbon dioxide emissions with the same global warming potential as one metric ton of another greenhouse gas.

including changes to climate norms, heatwaves, low rainfall and drought, and heavy rainfall and flooding. In relation to infrastructure, are negligible to moderate beneficial (not significant to significant). The anticipated effects of climate change on future site users (i.e. workers for maintenance) have been assessed as negligible (not significant). The effects on the natural environment (ecology, landscape and planting) are considered to be negligible in relation long term changes to climate norms, heatwaves, low rainfall and drought, and to minor adverse in relation to heavy rainfall and flooding (not significant to significant).

- 12.2.4. Effects of climate change on flood risk is assessed as negligible in relation to long term changes to climate norms, and negligible to moderate beneficial in relation to heavy rainfall and flooding (not significant to significant) due to suitably designed flood defences and drainage strategy.

12.3. Mitigation

Embedded Mitigation

- 12.3.1. The assessment of climate change resilience to climate changes and hazards has accounted for embedded mitigation measures including the flood resilient design including swales which will be located at low points across the Site to intercept extreme surface water flow and encourage infiltration and the site-specific flood modelling will be assessed in the ES to inform the design of the Proposed Development's equipment on the Site.

Measures to be adopted by the Project

- 12.3.2. An oCEMP and oCTMP have been prepared and submitted alongside the DCO application. With respect to minimising the number of vehicle movements and subsequent emissions, the detailed CTMP will provide for measures to reduce the number of traffic movements involved in the delivery of materials to the Site, as well as ways to promote the most sustainable methods of construction workers to get to the Site.
- 12.3.3. During the operational phase of the Proposed Development, the design specifications for the infrastructure (solar PV panels, substation etc.) will be confirmed through DCO requirements. The management of the Proposed Development will be undertaken in accordance with the LEMP which will secure the

long-term planting on the Site. In addition, during the operational phase on-Site users will adhere to appropriate health and safety measures and visits will be scheduled outside of periods of climatic extremes, such as heatwaves or elevated flood risk.

- 12.3.4. The operation of the BESS will be managed in line with the **BESS Safety Management Plan (Appendix 3.1 [EN010140/APP/6.3.3.1] of the ES)**. The final BESS Safety Management Plan will be secured by a DCO requirement.

Additional Mitigation

- 12.3.5. No additional mitigation measures were identified for the construction, operational or decommissioning phase of the Proposed Development.

12.4. Residual Effects

- 12.4.1. Following the implementation of the embedded mitigation, measures to be adopted by the Project and additional mitigation, construction of the Proposed Development is likely to result in greenhouse gas emissions (GHG) from construction vehicles which will result in short-term temporary minor adverse effects which will be not significant.
- 12.4.2. During operation of the Proposed Development after implementation of the embedded mitigation, measures to be adopted by the Project and additional mitigation, there will be a carbon saving resulting from the export of renewable electricity to the grid which will result in a long-term major beneficial effect at the local level, which is significant and a minor beneficial effect at the national level, which is not significant. Furthermore, the Proposed Development is considered to be resilient to projected climate change resulting in not significant effects.

13. Socio-Economics

13.1. Baseline

- 13.1.1. Socio-economic conditions in this ES refer to the Proposed Development's contribution to the local economy through factors such as job creation and spending at local shops, as well as addressing effects on existing residential properties in the area, local amenity, tourism and recreational facilities.
- 13.1.2. Two areas have been defined for this assessment (see Figure 13.1). The Local Study Area has been defined as the three electoral wards comprising Camblesforth and Carlton; Brayton and Barlow; and Thorpe Willoughby and Hambleton, as these encompass the main settlements within closest proximity to the Site. The Wider Study Area comprises the whole of the Yorkshire and Humber region. The Local Study Area has a population of approximately 8,361, with an older age profile and lower percentage (59% compared to 62%) than the Wider Study Area. The percentage of those considered economically active is 61% in the Local Study Area, higher than the Wider Area (59%) and equal to the national average. In regard to occupation, residents of the Local Study Area tend to be employed in jobs identified as more skilled than compared to those of the Wider Study Area, as well as the national average. The Local Study Area and Wider Study Area are illustrated in Figure 13.1.

13.2. Assessment

- 13.2.1. To facilitate the Proposed Development, the existing agricultural use of the Site will temporarily cease for the 40-year modelled operational lifespan of the Proposed Development. However, the Site only represents 15% of the total land held by the existing farmers that farm the land within the Site and therefore the 19 labourers currently working on the Site will be retained by the farmers to work on the wider land holding. Therefore, no existing employment will be lost as a result of the Proposed Development.
- 13.2.2. The construction phase of the Proposed Development will support up to 200 direct jobs related to land preparation, installation and grid connection with a further 80 indirect jobs supported through the supply chain. Furthermore, an economic contribution of £14.9m in the Wider Study Area during the Proposed Development's

12-month construction phase is also anticipated resulting in negligible short-term temporary effects, which are not significant.

- 13.2.3. It is anticipated that the construction workforce will temporarily relocate to the area whilst working on the Proposed Development, which will place demand on local accommodation. However, effects on local amenity (consisting of accommodation, food services, noise and transport) are anticipated to result in a negligible to minor adverse short-term temporary effect, which is not significant. Furthermore, workforce expenditure (i.e. the money the construction workforce will spend in the wider and local area) will result in a minor beneficial short-term temporary effect, which is not significant.
- 13.2.4. Once operation, the Proposed Development will have a moderate beneficial long-term effect, which is significant, on renewable energy generation by increasing the solar PV capacity in the Wider Study Area by 28% and increasing all types of renewable energy generation by 1.3% in the Wider Study Area.
- 13.2.5. The effects during decommissioning will be similar to the construction phase in terms of socio economic effects with the construction process carried out in reverse over a similar duration.

13.3. Mitigation

Embedded Mitigation

- 13.3.1. The Proposed Development will maintain and improve the local PRow network in and around the Site.

Measures to be adopted by the Project

- 13.3.2. During construction the detailed CEMP and CTMP will be implemented which will outline the best practice site management and ensure that the works are carried out in accordance with Best Practicable Means to minimize adverse effects on the local population and employment opportunities.
- 13.3.3. No measures have been identified during operation of the Proposed Development.
- 13.3.4. During decommissioning the detailed DEMP and DTMP will be implemented which will outline the best practice site management and ensure that the works are carried

out in accordance with Best Practicable Means to minimize adverse effects on the local population and employment opportunities.

Additional Mitigation

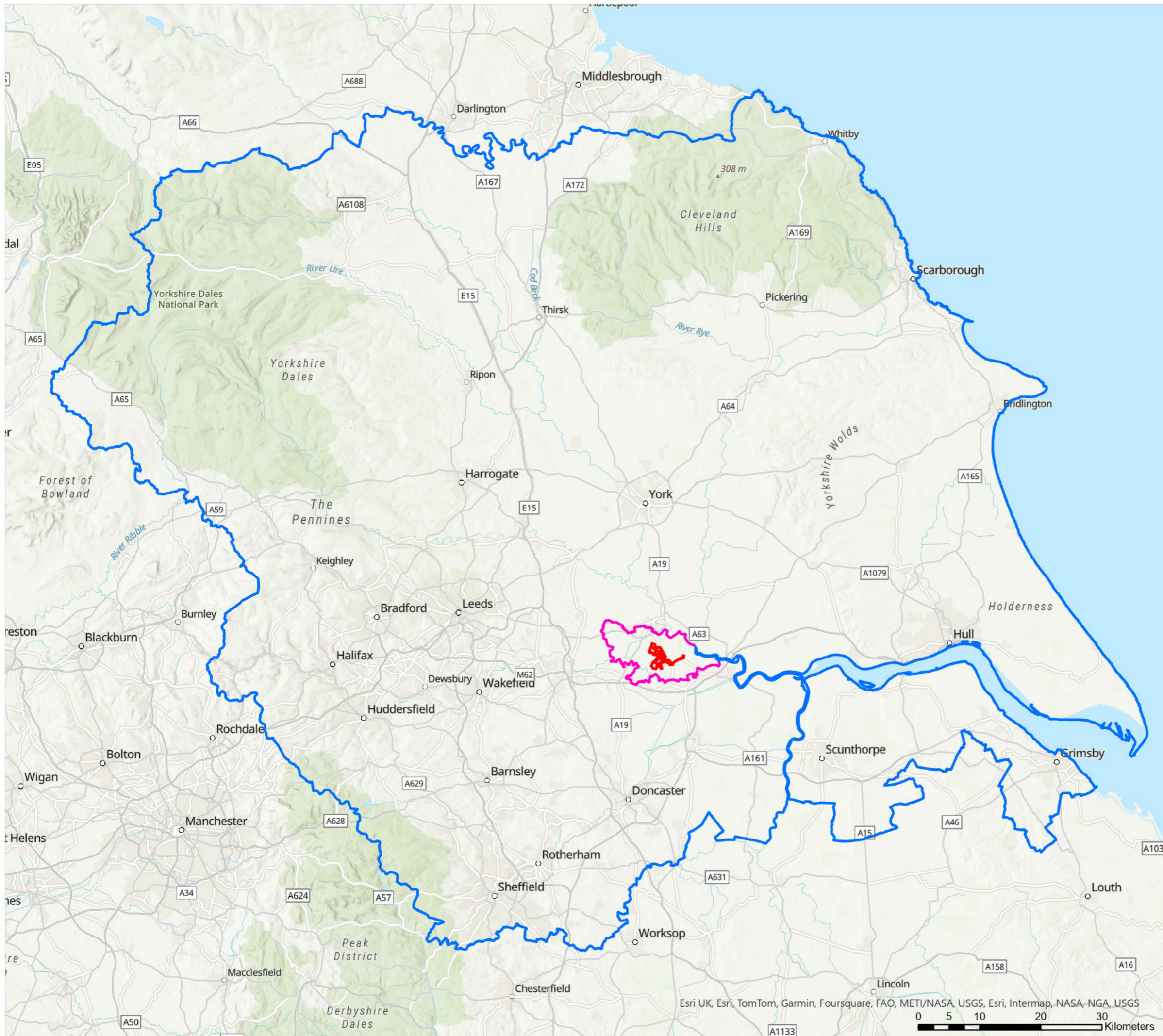
13.3.5. No additional mitigation measures have been identified.

13.4. Residual Effects

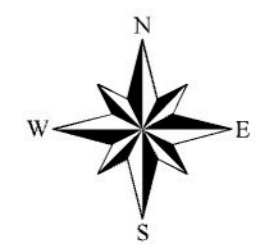
13.4.1. There is not expected to be any significant residual effects during the construction and decommissioning phases of the Proposed Development.

13.4.2. A major beneficial residual effect, which is significant in EIA terms, has been identified for the contribution of the Proposed Development towards renewable energy generation. All other residual effects during the operational phase are not significant.

Figure 13.1 Wider and Local Study Areas



- Key**
- Local Study Area
 - Wider Study Area
 - Site Boundary



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Helios Renewable Energy Project		
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Figure 13.1: Local and Wider Study Area		
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14. Soils and Agricultural Land

14.1. Baseline

- 14.1.1. The majority of the Site (96%) comprises best and most versatile agricultural land with 3.7% being Grade 1 (excellent), 40.5% being Grade 2 (very good) and 51.8% being Grade 3a (good). The remaining areas of the Site comprise 2.8% of Grade 3b (moderate) land and 1.2% was non-agricultural or not surveyed. The soils within the Site are almost all sandy soils with sandy subsoils which are well-drained.
- 14.1.2. There are five farm businesses that farm the land within the Site (excluding the Underground Cable Corridor), which generally farm arable crops.

14.2. Assessment

- 14.2.1. The construction of the Proposed Development would result in limited temporary damage to the agricultural land with only modest areas disturbed for tracks, inverter stations and substations. Overall, the installation of the solar PV arrays and cabling would result in a negligible (not significant) short-term effect on soils while the long-term disturbance or sterilisation associated with the tracks, inverter stations and substations will result in long-term temporary moderate adverse effects on 7 ha of Grade 1 and 2 land and less than 5 ha on sub-grade 3a land which are not significant.
- 14.2.2. The operational phase of the Proposed Development would result in a neutral effects on best and most versatile land, moderate beneficial (not significant) effects on soils, moderate or minor adverse (not significant) effects on farm business and moderate or minor adverse (not significant) effects on farm business.
- 14.2.3. The decommissioning of the Proposed Development and restoration of the Site to the current baseline condition will result in negligible (not significant) short term effects on soils as they will be timed to be carried out when soil conditions are suitable and avoid any adverse agricultural effects. After decommissioning has been completed the land will become available for agricultural use resulting in permanent neutral effects which are not significant.

14.3. Mitigation

Embedded Mitigation

14.3.1. No embedded mitigation has been considered.

Measures to be adopted by the Project

14.3.2. An Outline Soil Management Plan has been prepared for the Site, which outlines the appropriate mitigation measures which will be implemented to reduce potential impacts to soils being handled or transported.

Additional Mitigation

14.3.3. No additional mitigation has been considered.

14.4. Residual Effects

14.4.1. Following the implementation of the mitigation, residual effects during the construction phase are identified as negligible to moderate adverse, which are not considered significant. Similarly, the decommissioning phase would not result in any significant effects.

14.4.2. During the operational phase, the Proposed Development would result in no significant adverse effects on agricultural land quality or farm business, a moderate beneficial (not significant) effects on soils and neutral (not significant) effects on the change in land use from arable to grassland.

15. Cumulative Effects

15.1. Introduction

15.1.1. The ES has considered the potential for intra-project effects (i.e. the different types of effects resulting from the Proposed Development combining to have effects on the same receptor) and likely significant inter-project cumulative effects on the environment (i.e. those resulting from the Proposed Development combined with other relevant development in the area).

15.2. Intra-Project Effects

15.2.1. During the construction and decommissioning phases of the Proposed Development, users of 'PRoWs within and close to the Site have the potential to experience a combined effect of noise disturbance and the visual effect associated with construction and decommissioning activities. However, any adverse effects would be short term, temporary and not significant following implementation of mitigation measures. There is also the potential for soils and agricultural land and water environment (contamination) intra-project effects within the Site, in relation to soil quality and structure and its trafficking via construction vehicle however, with the implementation of mitigation, these effects would not be significant.

15.2.2. Similarly to the construction and decommissioning phases, the operational phase of the Proposed Development has the potential to result in a combined effect of noise disturbance (from plant) and visual impacts on users of PRoWs within and close to the Site. However, with the landscape planting proposals including enhancements to field boundary hedgerows in place, and the noise mitigation incorporated into the Proposed Development's design, significant intra-project effects are not anticipated.

15.3. Inter-Project Effects

15.3.1. The likely significant effects of a development that may arise cumulatively when combined with other relevant development in the area has been assessed within the ES. Table 15.1 summarises the 14 projects that have been identified for the cumulative assessment.

Table 15.1: Cumulative Schemes

Scheme Address and Reference Number	Description	Status	Distance and Direction from the Site
<p>Land South of A645, Wade House Lane, Drax (Ref: 2023/0128/EIA)</p>	<p>Development of a ground-mounted solar farm including associated infrastructure.</p>	<p>Consented in April 2024. Not yet under construction.</p>	<p>Application's site boundary overlaps with the Proposed Development's underground cable corridor to the grid connection.</p>
<p>East Yorkshire Solar Farm (PINS Ref: EN010143)</p>	<p>The installation of solar photovoltaic generating panels, associated electrical equipment, cabling and on-site energy storage facilities together with grid connection infrastructure. The point of connection will be at Drax Substation, situated approximately 6.2km to the south-west of the PV site. The generating capacity of the Scheme will exceed 50 megawatts and its maximum capacity is</p>	<p>Accepted for Examination in December 2023</p>	<p>Application's grid connection corridor boundary immediately to the east of the Proposed Development's</p>

Scheme Address and Reference Number	Description	Status	Distance and Direction from the Site
	<p>anticipated to be 400 megawatts.</p>		<p>underground cable corridor to the grid connection.</p>
<p>Drax Bioenergy with Carbon Capture and Storage Project NSIP (PINS Ref: EN010120)</p>	<ul style="list-style-type: none"> • Carbon capture infrastructure at the Drax Power Station; • Compression and treatment of carbon dioxide at the Drax Power Station to allow connection to a National Grid carbon dioxide transport system; • Potential Upgraded Drax Jetty and Road Improvements to facilitate the transport of abnormal indivisible loads; and • Potential Environmental Mitigation Area to the north of the Drax Power Station. 	<p>Approved January 2024.</p>	<p>Adjacent to the eastern part of the Site boundary.</p>
<p>Land Off New Road, Drax (Ref:</p>	<p>Development of an energy storage facility including battery storage containers; substations; power conversion systems; transformers and associated</p>	<p>Consented in May 2021. Not yet under</p>	<p>Adjacent to the eastern part of the Site</p>

Scheme Address and Reference Number	Description	Status	Distance and Direction from the Site
2020/1357/FULM)	switchgear; HVAC equipment; communications and grid compliance equipment; temporary construction compound; CCTV; fencing; infrared lighting; access, drainage and landscaping works and associated development.	construction.	boundary.
Land Off Hales Lane, Drax (Ref: 2021/1089/FULM)	Development of a battery storage facility, associated infrastructure, access and grid connection.	Consented in May 2022. Not yet under construction.	Adjacent to the eastern part of the Site boundary.
Land North and South of Camela Lane, Camblesforth (Ref: 2021/0788/EIA)	Development of a ground mounted solar farm including associated infrastructure.	Consented in July 2022. Not yet under construction.	Adjacent to the eastern part of the Site boundary.
Drax Power Station, Drax (Ref:	Recovery of ash resource from Barlow Ash Mound, North West of Drax Power Station.	Request for EIA Scoping Opinion submitted. Planning application not	Adjacent to the eastern part of the Site boundary.

Scheme Address and Reference Number	Description	Status	Distance and Direction from the Site
2022/0107/NYSCO)		yet submitted.	
Land to the East of New Road, Drax (Ref: 2022/0711/EIA)	<p>Hybrid Planning Application comprising two parts:</p> <p>(i) outline planning application (all matters reserved) for the construction of a converter station at Drax, Selby; and</p> <p>(ii) full planning application for the installation of high voltage direct current underground cables from the River Ouse to the converter station and high voltage alternating current underground cables from the converter station to the existing Drax Substation, as well as all associated temporary works including compounds, accesses and bellmouths as part of the construction of Scotland-England Green Link 2 (SEGL2), a two gigawatt reinforcement of the electricity transmission system between Peterhead, Scotland and Drax, England.</p> <p>[Installation of underground high voltage direct current cables from Mean Low Water Springs at</p>	<p>Consented in August 2023.</p> <p>Not yet under construction.</p>	<p>Approximately 150m to the north of the Site boundary, at its closest point.</p>

Scheme Address and Reference Number	Description	Status	Distance and Direction from the Site
	Fraisthorpe, East Riding to the River Ouse and associated temporary works relating to land in an adjoining authority].		
Land East of Broadacres, Mill Lane, Carlton (Ref: ZG2023/0732/OUTM)	Outline application (some matters reserved) for development of up to 200 residential dwellings with access to, but not within, the site.	Awaiting decision (validated in July 2023)	Approximately 550m south of the Site boundary.
Land Adjacent to Barlow Common Road, Barlow, Selby (Ref: 2022/0287/SCN)	EIA Screening Opinion request for a 50 megawatts BESS on land off Barlow Common Road.	EIA Screening stage – EIA not required (April 2022) Application not yet submitted.	Approximately 875m to the north of the Site boundary.
Newlands Farm, Turnham Lane, Cliffe,	EIA Screening Opinion request for five wind turbines.	EIA Screening stage – EIA required (June 2021).	Approximately 2.5km to the

Scheme Address and Reference Number	Description	Status	Distance and Direction from the Site
Selby (Ref: 2021/0348/SCN)		Application not yet submitted.	north of the Site boundary.
Eggborough Power Station, Selby Road, Eggborough (Ref: 2019/1343/EIA)	Hybrid application for demolition of part of the former power station and ancillary buildings and its redevelopment, comprising: (i) access into the site, internal roads, employment units, car parking, drainage infrastructure and landscaping; and (ii) outline for the scale of redevelopment of the remainder of the site for employment floorspace, proposed buildings with ridge being between 9.5 metres and 24.5 metres, car parking, drainage infrastructure and strategic landscaping.	Consented in October 2020. Under construction.	Approximately 2.9km to the west of the Site boundary.
Land near Osgodby Grange, South Duffield Road,	Installation of renewable energy generating station comprising ground mounted PV solar arrays together with substation, transformer stations, site	Consented in July 2022. Not yet under	Approximately 7km to the north east of

Scheme Address and Reference Number	Description	Status	Distance and Direction from the Site
Osgodby, Selby (Ref: 2021/0978/FULM)	accesses, internal access tracks, security measures, access gates, other ancillary infrastructure and landscaping and biodiversity enhancements	construction.	the Site boundary.
Selby Energy Park, Cliffe Common, Cliffe, Selby (Ref: ZG2023/1272/FULM)	Development of up to 10,800sqm open storage (Use Class B8) together with associated highways works, site-wide hard and soft landscaping works, boundary treatment and associated works.	Awaiting decision (validated December 2023).	Approximately 7km to the north east of the Site boundary.
Gascoigne Wood Interchange, Gascoigne Wood Mine, Lennerton Lane, Sherburn-In-Elmet	Outline application for the demolition of existing colliery buildings and the construction of up to 1,460,000 sq ft of employment floorspace comprising Use Classes B2, B8 and E(g) to include access (with all other matters reserved) (Previous application 2018/0818/EIA refused at	Awaiting decision (validated December 2021).	Approximately 8.5km to the north west of Site boundary.

Scheme Address and Reference Number	Description	Status	Distance and Direction from the Site
(Ref: 2021/1531/EIA)	appeal).		
Former Kellingley Colliery, Turvers Lane, Kellingley, Knottingley (Ref: 2016/1343/OUTM)	Outline application including means of access (all other matters reserved) for the construction of an employment park up to 1.45 million square feet ('sq ft') (135,500 square metres) gross internal area of floorspace, comprising B2, B8 and ancillary B1 uses, ancillary non-residential institution (Use Class D1) and retail uses (Use Classes A1 – A5) and related ancillary infrastructure.	Consented in February 2019. Under construction.	Approximately 10km to the west of the Site boundary.
Bradholme Farm, High Levels Bank, Thorne, Doncaster (Ref: 21/00500/OUTA)	Outline planning application for the demolition of an existing bungalow and associated buildings/ structures and all hardstanding and erection of up to 2,900,000 sq ft of employment space (Class E(g), B2 and B8 uses) with all matters reserved apart from access.	Awaiting decision.	Approximately 10km south east of the Site boundary.

15.3.2. Each technical chapter of the ES assesses potential for inter-project cumulative effects and that, with the exception of those listed below, there are no significant cumulative inter-project effects. The significant residual cumulative effects identified in the assessment are set out below.

- A moderate beneficial (significant) effect is identified at the local level to a reduction in carbon emissions associated with the cumulative operation of several schemes related to the generation or storage of renewable energy;
- A major/moderate adverse effect to the Landscape Character Area 15 Camblesforth Farmland due to the cumulative area of land the Proposed Development and two cumulative schemes occupy within this Landscape Character Area; and
- The solar developments identified from the list of cumulative developments for assessment make clear commitments to achieve measurable biodiversity gains; therefore, a major beneficial (significant) cumulative effect to habitats has been identified at the local level.

16. Summary and Conclusions

16.1.1. Full results of significant residual effects have been determined following assessments undertaken as part of the ES. The ES finds that the Proposed Development is expected to result in the following significant beneficial effects:

Construction Phase

- Effects on habitats (**major beneficial**)

Operational Phase

- Effects on non-statutory designated sites (**moderate beneficial**);
- Effects on habitats (**major beneficial**);
- Effects on breeding birds (**moderate beneficial**);
- The Proposed Development will result in reduced flood risk generally, resulting in a (**moderate to minor beneficial**);
- Flood mitigation embedded into the scheme will improve infrastructure resilience to flood risk, from surface water and the drainage regime, resulting in a significant (**moderate beneficial**) effect; and
- The Proposed Development will have a **moderate beneficial** effect on renewable energy generation in the Yorkshire and Humber region during the operational phase.

Decommissioning Phase

- There are no significant beneficial effects anticipated during decommissioning.

16.1.2. The ES finds that the Proposed Development is expected to result in the following significant adverse effects:

Construction Phase

- Effects on groundwater bodies water quality as a result of potentially polluting construction activities (**moderate to minor adverse**).

Operational Phase

- Effects on visual receptors (Negligible – **Major/Moderate negative**).

Decommissioning Phase

- Effects on groundwater bodies water quality as a result of potentially polluting decommissioning activities (**moderate** to minor **adverse**).