

Light Valley Solar

Environmental Statement

Non-Technical Summary

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Light Valley
Solar

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Light Valley Solar

DCO Submission

Non-Technical Summary

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Contents

1	Introduction	1
1.1	Overview	1
1.2	The Applicant	1
1.3	The Order Limits	1
1.4	The Purpose of the ES and NTS	2
2	Energy need, legislative context and energy policy	4
3	EIA process and methodology	5
3.2	Overview	5
3.3	Consultation	7
4	Site selection and design evolution	10
5	Proposed Development description	11
5.1	Description of the Proposed Development	11
5.2	Construction	16
5.3	Operation and maintenance	19
5.4	Decommissioning	22
6	Assessing environmental effects	24
6.1	Topics assessed	24
6.2	Approach to assessment	25
7	ES findings	26
7.2	Agricultural Land and Soils	26
7.3	Biodiversity	31 30
7.4	Climate Change Resilience	37
7.5	Cultural Heritage	40
7.6	Greenhouse Gas Emissions	43
7.7	Landscape and Visual	47
7.8	Noise and Vibration	52
7.9	Ornithology	55
7.10	Socioeconomics	59
7.11	Traffic and movement	63
7.12	Water Resources and Flood Risk	67
7.13	Other Environmental Matters	70
7.14	Cumulative and In-Combination Effects	77
Annex A	Figures of the NTS	80
References		81

List of Plates

Plate 3-1	Main stages of the EIA process	5
Plate 5-1	Typical tracker Solar PV Panels in an angled orientation	13
Plate 5-2	Typical tracker Solar PV Panels in a near flat orientation	14
Plate 5-3	Typical fixed Solar PV Panels (with disaggregated conversion unit)	14
Plate 5-4	Typical Battery Energy Storage System	14
Plate 5-5	Typical 275 kV substation equipment	15

1 Introduction

1.1 Overview

- 1.1.1 This document has been prepared on behalf of Light Valley Solar Limited (the 'Applicant') and provides a Non-Technical Summary (NTS) of the Environmental Statement (ES) for Light Valley Solar (the 'Proposed Development').
- 1.1.2 The Proposed Development will involve the construction, operation, maintenance and decommissioning of a solar photovoltaic (PV) electricity generating facility and energy storage facility. The export capacity of the Proposed Development will be above 100 megawatts (MW) and therefore, it is classified as a Nationally Significant Infrastructure Project (NSIP) and requires a Development Consent Order (DCO) Application under the Planning Act 2008 (Ref 1).

1.2 The Applicant

- 1.2.1 The Proposed Development is being developed by Light Valley Solar Limited, a subsidiary of Island Green Power (IGP) UK Limited. IGP is a leading international developer of renewable energy projects, established in 2013.
- 1.2.2 IGP has delivered 34 solar projects worldwide with a total generation capacity of more than 1 gigawatt (GW) which includes 20 solar projects in the United Kingdom and the Republic of Ireland. Their mission is to increase solar energy usage, making more renewable energy possible and reducing carbon emissions.

1.3 The Order Limits

- 1.3.1 The land for which DCO Application consent is being sought is referred to as the 'Order Limits' and comprises approximately 1,270 hectares (ha) of land located within the administrative area of North Yorkshire Council (NYC) , near Selby. The Order Limits are shown on Figure 1.1: Site Location Plan and Order Limits (ES Volume 2) [EN0110012/LVS/APP/06.02.01.01].
- 1.3.2 The Order Limits comprise the following elements as shown on Figure 1 (Annex A – Figures of this NTS):
 - 1) The Solar Development Sites, which consist of approximately 900 ha of land for Solar PV Panels, associated infrastructure, landscaping, heritage, surface water and biodiversity mitigation areas. The Solar Development Sites comprise the following seven areas:
 - a) Solar Development Site 1 – 344.8 ha;
 - b) Solar Development Site 2 – 83.3 ha;
 - c) Solar Development Site 3 – 19.9 ha;
 - d) Solar Development Site 4¹ - 283.8 ha;

¹ Solar Development Site 5, as presented at the Scoping and non-statutory consultation, has been removed from the Proposed Development due to the results from flood modelling which confirmed the site was not suitable for development.

- e) Solar Development Site 6 – 99.6 ha;
 - f) Solar Development Site 7 – 8.7 ha; and
 - g) Solar Development Site 8 – 60.0 ha.
- 2) The Battery Energy Storage System (BESS) Compound which is the area of land within which the BESS would be located for the storage, import and export of energy to the National Grid. The Proposed Development would include a single BESS Compound located within Solar Development Site 2;
 - 3) The Highway Improvement Areas, which consist of approximately 17.1 ha of land, include land within which improvements to sections of the existing highway network will be completed to facilitate access to the Proposed Development, such as improvements to road edges, passing places and traffic management measures;
 - 4) The Cable Route Corridor, approximately 328.5 ha, within which the Grid Connection Cables would be located to connect the Solar Development Sites to the National Grid at the existing Monk Fryston Substation and within which the Interconnecting Cables connecting the Solar Development Sites would be located (hereafter referred to as the 'interconnecting cables');
 - 5) The Existing National Grid Monk Fryston Substation, which comprises the existing Monk Fryston Substation (owned and operated by the National Grid) where the 275 kilovolt (kV) Grid Connection Cables would connect to the grid.
 - 6) Solar Development Site 8 Access, approximately 24.1 ha of land, comprises an optional access route from the north of the site. This may require a new culvert on Habholme Dike, a moderate-value watercourse. The route would also cross Selby Dam, a high-value watercourse, where an existing culvert is present but its condition is unknown. If replacement crossing structure is required, a temporary crossing structure could be installed for up to six months to maintain access during works.

1.3.3 A description of the physical characteristics of the Proposed Development and the land-use requirements during the construction, operation and maintenance, and decommissioning phases is presented in Section 5 of this NTS.

1.4 The Purpose of the ES and NTS

1.4.1 An ES has been prepared by the Applicant to present the environmental impact assessment (EIA) for the Proposed Development.

1.4.2 The Proposed Development is considered to be 'EIA development' as defined by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations') (Ref 3), and as such requires an EIA to be undertaken. This ES forms part of the DCO Application and presents the findings of the EIA undertaken for the Proposed Development in accordance with the EIA Regulations and the Planning Act 2008 (Ref 1).

- 1.4.3 The purpose of this NTS is to provide an overview of the ES and help members of the public, statutory consultees and other stakeholders to develop an informed view of the Proposed Development and understand the potential likely significant environmental effects of the Proposed Development.

2 Energy need, legislative context and energy policy

- 2.1.1 Urgent and unprecedented actions are required on a global scale to halt climate change. A rapid increase in the supply of low carbon electricity is needed for the UK to meet its legally binding target of achieving Net Zero carbon emissions by 2050.
- 2.1.2 The government's Clean Power 2030 Action Plan (Ref 4), published in December 2024, reinforces the urgent need for additional low carbon generation schemes to come forward to deliver a clean electricity system as soon as possible. This is also important to keep the electricity system clean as power demand over the 2030s and 2040s rapidly grows due to the country pursuing the electrification of heat, transport, and industrial demand to reduce fossil fuel use. A clean electricity system is one where the vast majority of electricity used is supplied from UK-based low-carbon sources.
- 2.1.3 The Secretary of State must have regard to the current suite of National Policy Statements (NPSs) for energy and must decide the application for development consent for the Proposed Development under the Planning Act 2008 (Ref 1) in accordance with those NPSs.
- 2.1.4 The NPSs establish a critical national priority for low carbon infrastructure, including for large-scale solar farms, because the decarbonisation, energy security, and affordability benefits that they deliver. The NPSs confirm that substantial weight should be given to the need for low carbon generation schemes, and that large-scale ground mounted solar farms have a critical role to play in achieving the government's energy policy aims of delivering a secure, low carbon and low-cost electricity supply for consumers on the way to delivering Net Zero carbon emissions by 2050.
- 2.1.5 The relevant National Policy Statements are discussed in section 4.2 of Chapter 4: Approach to EIA (ES Volume 1) **[EN0110012/APP/LVS/06.01.04]**.
- 2.1.6 The Proposed Development, if consented, will help to address the climate change emergency that affects everyone's lives and the environment, by ensuring our energy supply is secure, low carbon and low-cost.

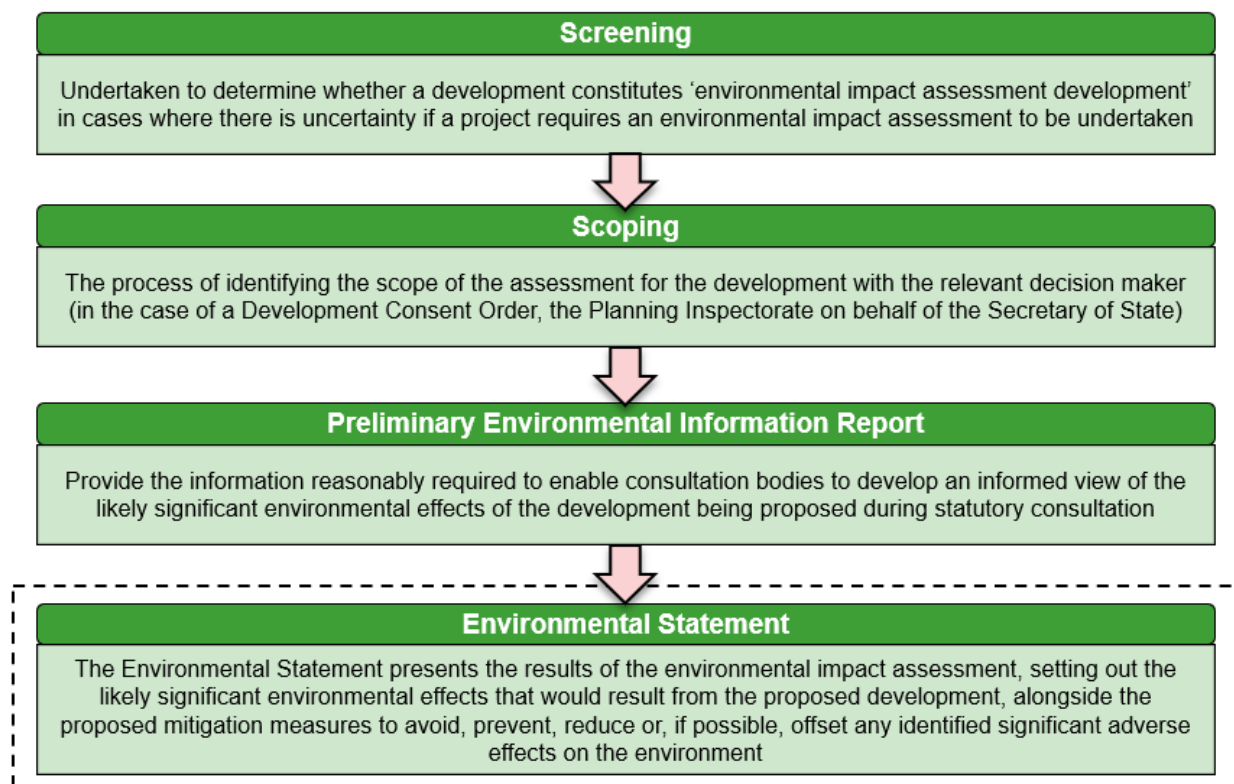
3 EIA process and methodology

- 3.1.1 The approach the EIA has taken to assessing impacts associated with the Proposed Development, including the significance criteria against which impacts have been assessed is described within Chapter 4: Approach to EIA (ES Volume 1) [EN0110012/APP/LVS/06.01.04].

3.2 Overview

- 3.2.1 EIA is the process undertaken to identify and evaluate the likely significant effects of a proposed development on the environment and to identify measures to avoid, mitigate or manage any significant negative effects, and explore opportunities to enhance through positive effects. The EIA process is shown below in Plate 3-1. The ES is the fourth stage in this image.

Plate 3-1 Main stages of the EIA process



- 3.2.2 The EIA has been informed by consultation with statutory consultees, other interested bodies, and members of the public. The purpose of identifying significant effects is to ensure decision makers are able to make an informed judgement on the environmental impacts of a proposal.
- 3.2.3 The assessment considers the environmental impacts of the Proposed Development at key stages in its construction, and operation and maintenance phases, and as far as is practicable, its decommissioning phase. The Baseline Conditions section of each technical chapter sets out the existing conditions prior

to the Proposed Development, describing the relevant baseline characteristics of the Order Limits and the relevant Study Area. Detailed environmental baseline information has been collected from various sources, including digital resources data searches, site surveys, stakeholder engagement and environmental information submitted in support of other planning applications on the vicinity of the Proposed Development. This is the principal baseline against which environmental effects will be assessed.

- 3.2.4 The assessment of construction and decommissioning effects have been undertaken based on existing knowledge, techniques, and equipment. A 'reasonable worst-case' scenario has been used with respect to the construction and decommissioning methods, location (proximity to sensitive receptors), phasing, and timing of activities as defined in Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]**.
- 3.2.5 The evaluation of the significance is important as it is the significance that determines the resources that should be deployed in avoiding or mitigating a significant adverse effect, or conversely, the actual value of a beneficial effect. Where mitigation measures are identified to eliminate, mitigate or reduce adverse impacts, these have either been incorporated into the design, translated into construction commitments, and/or operational or managerial standards / procedures. These are summarised in the Commitments Register (Appendix 1.3 (ES Volume 3) **[EN0110012/APP/LVS/06.03.01.03]**). The criteria for determining the significance is presented in table 4-3 to table 4-5 of Chapter 4: Approach to EIA (ES Volume 1) **[EN0110012/APP/LVS/06.01.04]** or where this is adapted to be relevant to the topic, this is explained in each topic chapter. Generic definitions for the classification of effects are provided in table 4-4 of Chapter 4: Approach to EIA (ES Volume 1) **[EN0110012/APP/LVS/06.01.04]**. This chapter defines the sensitivity and magnitude criteria which determine the degree of significance of an effect. For example, a high magnitude of impact / change on a high sensitivity receptor will result in an effect that is classed as major significance.
- 3.2.6 The significance of residual effects is determined by reference to criteria for each assessment. Specific effect significance criteria for each technical chapter (Chapter 5 to 16 (ES Volume 1) **[EN0110012/APP/LVS/06.01]**) have been developed. The ES identifies 'residual effects' which remain following the implementation of suitable mitigation measures and classify these in accordance with the effect classification terminology listed in table 4-5 in Chapter 4: Approach to EIA (ES Volume 1) **[EN0110012/APP/LVS/06.01.04]**.
- 3.2.7 In accordance with Schedule 4, Paragraph 5 of the EIA Regulations (Ref 3), an assessment of 'cumulative effects' has also been considered in the ES. These effects result from incremental changes caused by other past, present and reasonably foreseeable actions cumulatively with the Proposed Development. For the cumulative impact assessment presented in the ES, two types of effect are considered:

- 1) **In-Combination effects:** these are the combined effect of individual impacts from the Scheme, such as someone being impacted by both construction noise and traffic; and
- 2) **Cumulative effects:** these are the combined effects of other development scheme(s) which may interact with the effects of the Scheme. The effects of these schemes may be insignificant on an individual basis, but cumulatively with the Proposed Development have a new or different likely significant effect.

3.2.8 The assessment within the ES reflects feedback received during statutory consultation, the findings of surveys, and the Proposed Development design refinements. The process of identifying environmental effects is both iterative and cyclical, running in tandem with the iterative design process.

3.3 Consultation

3.3.1 Consultation has played a critical role in the shaping of the design of the Proposed Development and in informing the preparation of a balanced and robust ES. A wide range of stakeholders (including landowners, statutory consultees, local communities and special interest groups) have been engaged throughout the process, each bringing a different perspective and set of priorities.

3.3.2 To ensure meaningful engagement, consultation activities were designed to be inclusive and accessible, enabling stakeholders to participate in ways that suited their needs. Where appropriate, feedback received during consultation has directly influenced the design of the Proposed Development and the ES.

3.3.3 Details of the consultation undertaken is provided in the Consultation Report [EN0110012/APP/LVS/05.01] and a summary of the design changes in response to consultation comments are outlined in Chapter 3: Alternatives and Design Iteration (ES Volume 1) [EN0110012/APP/LVS/06.01.03] and Chapter 5-16 (ES Volume 1) [EN0110012/APP/LVS/06.01] (section X.4: Stakeholder engagement and consultation).

Scoping consultation

3.3.4 The purpose of the EIA Scoping process is to identify key environmental issues at an early stage, to determine which elements of the Proposed Development are likely to result in significant effects on the environment and to establish the extent of survey and assessment requirements for the EIA. This includes identifying which topics should be included in the EIA and the level of detail to which they should be assessed.

3.3.5 An EIA Scoping Report (Appendix 1.1, ES Volume 3) [EN0110012/APP/LVS/06.03.01.01] and request for an EIA Scoping Opinion under regulation 10 of the EIA Regulations (Ref 3) was submitted to the Secretary of State through the Planning Inspectorate (PINS) on 11 November 2024.

3.3.6 The EIA Scoping Opinion (Appendix 1.2, ES Volume 3) [EN0110012/APP/LVS/06.03.01.02] was received on 19 December 2024. It

presents the formal response from the PINS (on behalf of the Secretary of State) and statutory consultees. Key issues raised in the EIA Scoping Opinion are summarised and responded to within each technical chapter (Chapters 5 to 16, ES Volume 1) [EN0110012/APP/LVS/06.01]. These responses demonstrate how the matters raised in the EIA Scoping Opinion are addressed in the ES.

DCO consultation requirements

- 3.3.7 The Planning Act 2008 (Ref 1) sets out the statutory requirements for consultation when preparing an application for development consent. The Planning Act 2008 requires applicants to carry out statutory consultation on their proposals ahead of submission of a DCO application. The stages of consultation the Applicant undertook are:

Stage 1 consultation: non-statutory

- 3.3.8 The Applicant undertook a first stage of non-statutory consultation from 24 October 2024 to 5 December 2024. Consultation activities included engaging with parish and county councillors; distributing information related to the Proposed Development; hosting online and in person events; and collating consultation feedback.

Stage 2 consultation: statutory consultation and Preliminary Environmental Information

- 3.3.9 A Preliminary Environmental Information Report (PEIR) was prepared and published in June 2025 to satisfy the requirement of the EIA Regulations (Ref 3). 'Preliminary environmental information' is defined in Regulation 12(2) of the EIA Regulations as information "*which (a) has been compiled by the applicant; and (b) is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)*".
- 3.3.10 In order to enable consultees to understand the likely environmental effects of the Proposed Development, the PEIR presented preliminary findings of the environmental assessment undertaken at the point of writing. Statutory Consultation took place between 26 June 2025 and 7 August 2025. Together with ongoing discussion and meetings, this allowed consultees to develop an informed view of the likely significant effects of the Proposed Development and provide a response prior to the finalisation of the DCO Application and the EIA. The Applicant sought the views of consultees on the information contained within the PEIR, enabling both the EIA and the Proposed Development design to have regard to comments received.

Targeted consultation

- 3.3.11 A further round of targeted consultation was undertaken between 16 October 2025 to 20 November 2025, during which feedback was encouraged to comment

on minor changes to the Order Limits. Further detail is provided in Chapter 1: Introduction (ES Volume 1) **[EN0110012/APP/LVS/06.01.01]**.

3.3.12 The targeted consultation focused on 40 localised changes to the Order Limits which included:

- 1) Access Points – to allow access to and within the Proposed Development during construction and operation.
- 2) Visibility Splays – to ensure safe sightlines for vehicles entering or exiting the Proposed Development to access points.
- 3) Passing Places – to allow vehicles to pass safely on narrow roads used to access the Proposed Development during construction.
- 4) Abnormal Indivisible Loads (AIL) Access – to facilitate safe movement of these less frequent yet larger delivery vehicles, which have wide turning circles and need unobstructed routes.
- 5) Changes to the Cable Route Corridor – to allow flexibility to avoid engineering or environmental constraints, such as land drains or damage to existing hedgerows, trees and their roots.
- 6) Permissive Paths – to create publicly accessible routes within the Solar Development Sites for walking or cycling.

3.3.13 These changes do not result in any new (or different) significant environmental effects compared to those reported in the PEIR.

3.3.14 Throughout the pre-application period (and will continue on into the Examination period), a project website has been set up to provide information on the Proposed Development (www.lightvalleysolar.co.uk) and channels (email, Freepost, and phone line) have been opened for stakeholders to enquire about the Proposed Development.

3.3.15 A Consultation Report **[EN0110012/APP/LVS/05.01]** has been produced and provides a summary of the consultation methodology and extent of engagement and participation over each of the consultation periods, along with an overview of the issues raised in feedback submitted during the consultations. This report also shows that the Applicant has had regard to consultation responses including any responses to the feedback.

4 Site selection and design evolution

- 4.1.1 The Solar Development Sites were identified through a site selection exercise undertaken by the Applicant. Chapter 3: Alternatives and Design Iteration (ES Volume 1) **[EN0110012/APP/LVS/06.01.03]** presents an overview of the policy requirements for considering alternatives, factors that influenced the site selection process, and the alternatives considered as the design has evolved since EIA Scoping.
- 4.1.2 Appendix 3.1: Site Selection Assessment Report (ES Volume 3) **[EN0110012/APP/LVS/06.03.03.01]** sets out the methodical site selection process the Applicant undertook to select the Solar Development Sites that have been put forward as part of the Application. This involved a proportionate approach in accordance with national policy, seeking sites which had the potential to meet the Project Objectives.
- 4.1.3 No suitable unconstrained land has been identified within the search area to accommodate the Proposed Development, therefore constrained land has been considered. Using professional judgement and standardised assessment criteria, the most appropriate available land was identified. This location is considered suitable and appropriate for a solar development of the scale proposed.
- 4.1.4 A Sequential Test was also applied in site selection, starting with areas at lower flood risk. Higher flood risk areas were only considered once lower flood risk options had been discounted. Although the Proposed Development contains some Flood Zone 2 land, it performs best overall when wider environmental and planning factors are considered and is therefore the most suitable option. This approach aligns with national planning guidance, which requires a Sequential Test to focus on realistic alternatives in lower flood risk areas that could meet the same development need.
- 4.1.5 The Cable Route Corridor was then developed in the context of the results of that Site Selection process. This is explained further in Chapter 3: Alternatives and Design Iteration (ES Volume 1) **[EN0110012/APP/LVS/06.01.03]**,

5 Proposed Development description

5.1 Description of the Proposed Development

- 5.1.1 The Proposed Development comprises a solar photovoltaic (PV) electricity generating station of over 100 MW and ‘associated development’ comprising a Battery Energy Storage System (BESS), substations, grid connection infrastructure and other infrastructure integral to the construction, operation and maintenance and decommissioning phases.
- 5.1.2 The environmental impacts of some conventional forms of power generation are a direct result of the amount of electricity it can generate. For example, through the import of fuel to power the process or the level of atmospheric emissions it produces. This is not the case for solar PV energy generation and for this reason it is not proposed that the Proposed Development is restricted by imposing a limit on how much electricity it can generate.
- 5.1.3 The PV electricity generating station and BESS compound would be located within seven land parcels referred to as Solar Development Sites 1, 2, 3, 4, 6, 7, and 8 (hereafter collectively referred to as the ‘Solar Development Sites’). These are depicted in **Figure 2** in **Annex A – Figures** of this NTS.
- 5.1.4 The Cable Route Corridor is the area within which the Grid Connection Cables and Interconnecting Cables would be located to connect the Solar Development Sites to each other and to the Existing National Grid Monk Fryston Substation.

Proposed Development components

- 5.1.5 The Proposed Development comprises of principal infrastructure described below. Further detail is included in Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]**.
- 5.1.6 The Proposed Development comprises the key components listed below:
- 1) Solar PV Panels and Solar PV Mounting Structures;
 - a) Solar PV Panels that are made up of multiple bifacial PV cells which convert sunlight into direct current (DC) electricity from both sides of the Solar PV Panel;
 - b) Solar PV Mounting Structures would be Tracking Solar PV Tables (Option A) (as illustrated in Plate 5-2) or Fixed Solar PV Tables (Option B) (as illustrated in Plate 5-3);
 - 2) Conversion Units;
 - a) The Conversion Units incorporate the inverters, transformers and switchgear and are required to manage the electricity generated by the Solar PV Panels. These would either be standalone equipment (‘disaggregated’), or they would be housed (‘integrated’) together with a container. An Integrated Conversion Unit would comprise one or two central inverters, transformers and switchgear all housed within a

complete, preassembled and preconfigured unit. Inverters are required to convert the DC electricity collected by the Solar PV Panels into alternating current (AC) via the inverters which is the format of electricity distributed in Great Britain;

- 3) 33 kV Switchrooms;
- 4) Transformers;
- 5) Extra high voltage (EHV) switchgear and control equipment (housed inside a building);
- 6) Onsite electrical compounds comprising Substations, control buildings and associated equipment;
 - a) The 275 kV Substations would consist of electrical infrastructure such as transformers, switchgear and metering equipment (see Plate 5-5). The 275 kV Substations would be connected to the 33 kV Switch Rooms via Interconnecting Cables and step up the voltage to 275 kV ready to be exported to the Existing National Grid Monk Fryston Substation via the Grid Connection Cables;
- 7) A Battery Energy Storage System (BESS);
 - a) The BESS would be situated within a 'BESS Compound' within Solar Development Site 2 and will be designed to provide peak generation and grid balancing services to the electricity grid (as illustrated in Plate 5-4);
- 8) Onsite and Interconnecting Cables: underground electrical cable routes within the Solar Development Sites, and underground electrical cable routes (located within Cable Route Corridors) to connect the solar infrastructure (located within the Solar Development Sites 1-4 and 6-8) to each other;
- 9) Grid Connection Cables: underground electrical cable routes to connect the Proposed Development to the National Grid at Monk Fryston Substation, routing from Solar Development Site 4 to Monk Fryston Substation and with an option to extend to Solar Development Site 2;
 - a) Grid Connection Cables will transfer electricity between the 275 kV Substation and Existing National Grid Monk Fryston Substation;
- 10) 275 kV cable connection within the existing Monk Fryston Substation and associated works to connect into the substation;
- 11) Works at the Existing National Grid Monk Fryston Substation will involve the installation of new electrical equipment within the existing substation to enable connection of the Proposed Development to the transmission network. This will include the addition of a new 275 kV feeder bay and associated components such as a circuit breaker, metering equipment, disconnector and earthing switch, cable sealing ends, and a capacitor voltage transformer.
- 12) Spare parts storage buildings or enclosures and back-up generators;

- 13) Fencing and security measures (e.g. CCTV) around the perimeter and within the Site;
- 14) Access tracks to facilitate access within the Solar Development Sites and the Cable Route Corridor;
- 15) Permissive paths are incorporated into the design of the Proposed Development, contributing to the wider network of footpaths in the area and facilitate greater public access to the countryside during the lifetime of the Proposed Development. The design and implementation of the permissive paths is set out in the Outline Public Rights of Way Management Plan (oPRoWMP) [EN0110012/APP/LVS/07.09];
- 16) Environmental mitigation / biodiversity net gain such as grassland and meadow management, increasing diversity of hedgerows and applying vegetation buffers, alongside the Bird Mitigation Area;
- 17) Landscaping including the creation of new woodland blocks and belts. Planting new hedgerows and trees, reinforcing existing boundary hedgerows and creating a network of shallow scrapes and islands to deliver invertebrate-rich foraging areas;
- 18) Temporary works will also be required to facilitate construction, including temporary construction compounds, haul roads and highway alterations;
 - a) Solar Development Site Construction Compound areas and Cable Construction Compound areas to facilitate the construction phase of the Proposed Development (refer to **Figure 3** in **Annex A** – Figures of this NTS); and
 - b) Highway Improvement Areas comprising minor improvements along existing highways, such as repair to road edges where this has deteriorated and provision of passing places. The location of the Highway Improvement Areas are presented in **Figure 2** in **Annex A** – Figures of this NTS.

Plate 5-1 **Typical tracker Solar PV Panels in an angled orientation**



Plate 5-2 Typical tracker Solar PV Panels in a near flat orientation



Plate 5-3 Typical fixed Solar PV Panels (with disaggregated conversion unit)



Plate 5-4 Typical Battery Energy Storage System



Plate 5-5 **Typical 275 kV substation equipment**



5.2 Construction

Construction programme

- 5.2.1 Subject to being granted DCO Application consent and following a final investment decision, the earliest construction could start is late 2028. Construction work is unlikely to start on the Solar Development Sites in all locations at the same time. Each individual Solar Development Site 1-4 and 6-8 and the Cable Route Corridors would likely require different lengths of construction given their variance in size, and therefore there would be some overlap between them. As a worst-case scenario, for the purposes of this ES, construction is assumed to take place at all Solar Development Sites and across the Cable Route Corridor all at once. Construction of the Solar Development Sites and Cable Route Corridor would require approximately 24-36 months in total.

Construction activities

- 5.2.2 The core construction working hours during which construction activities would be completed for the Proposed Development (not including start-up and shut-down works) are defined as:
- 1) Monday to Friday from 07:00 to 18:00; and
 - 2) Saturday from 08:00 to 13:30.
- 5.2.3 No construction work will take place on Sunday or Bank Holidays. Horizontal Direct Drilling (HDD) works will take place outside of core working hours, on a 24/7 basis. Some further activities may be required outside of the core working hours (such as the arrival and departure of construction workers, the delivery of abnormal loads, concrete pours for foundations, nighttime working for cable construction works in public highways, or in emergencies).
- 5.2.4 Non start up or shut down constructions work required outside the core working hours will require written approval from the local planning authority, except in respect of HDD works or emergencies.
- 5.2.5 Start-up and shut-down activities on site will involve low noise tasks, including security checks, unlocking and locking gates, and conducting toolbox talks.
- 5.2.6 Construction activities within the Solar Development Sites would broadly include:
- 1) Site preparation and civil engineering works;
 - 2) Import of construction materials;
 - 3) Upgrading of existing access points and creation of new access points and associated access tracks;
 - 4) Enabling works and creation of temporary compounds;
 - 5) Erection of Solar PV Panels and Solar PV Mounting Structures;
 - 6) Installation of electrical cabling associated with the Solar PV Panels;

- 7) Construction of electrical infrastructure including inverters, transformers and switch gear;
- 8) Construction of electrical cables between Conversion Units and the substations;
- 9) Construction of BESS Compound; and
- 10) Installation of fencing, security and lighting.

5.2.7 Construction activities within the Cable Route Corridor would broadly include the construction of Interconnecting and Grid Connection Cables (including the use of trenchless methods where required), jointing bats, and the final testing and commissioning of electrical infrastructure.

5.2.8 Trenchless solutions (HDD) are proposed for the crossing of the River Ouse, main rivers, IDB watercourses, and WER water body line watercourses. Trenchless solutions will also be utilised when / if crossing ditches that lead to designated sites: Common Wood Site of Nature Conservation Interest (SINC), Nightingale Wood NICE, Burr Closes Sites of Specific Scientific Interest (SSSI) and Barber Rain SINC. Trenchless solutions will also be used to pass beneath Ouse Bank-Westfield-Ricall Ings SINC and railway crossings. Road crossings will be a combination of trenchless and open cut crossings.

5.2.9 Cables would be laid underground in excavated trenches. Trenching and cable laying would be carried out progressively across the Site and be phased to not interfere with other site operations such as piling, Solar PV Mounting Structure assembly or Solar PV Panel installation.

5.2.10 Care would be taken to ensure cable trench excavations can be managed and backfilled in a timely manner to avoid collapse. Trenching may be curtailed in periods of wet weather to avoid collapse of trenches of excessive contaminated run off.

Construction access

5.2.11 Wherever possible, the Proposed Development will utilise existing points of access and access tracks. New access tracks will also be established across the Site. New Solar PV access tracks would be a maximum of 3.5 m wide (6 m at passing places), constructed of granular material and will therefore be permeable.

5.2.12 Some access points into the individual Solar Development Sites will be designed to accommodate AIL turning spaces where needed. Existing field access points will be used, where practicable, with visibility sprays added, where necessary, based on the recorded speed of the vehicles on the road network to ensure safety. There may be some variation of visibility sprays based on site-specific conditions.

5.2.13 Access will be designed to ensure there are no impacts on veteran trees caused by vehicle movements, however, there may be localised removal of trees and hedgerows e.g. for visibility sprays for safety purposes. **Figure 4 in Annex A –**

Figures of this NTS illustrates the illustrative layout of the Proposed Development, including access locations.

- 5.2.14 Access 3 set out in table 2-4 of Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]** will provide access to the substation and BESS and will be suitable for AIL vehicles (larger than standard HGV size). This will comprise a track up to 6 m wide (with up to 8 m wide passing places) constructed of asphalt over a levelling layer of substrate. The access points from the public highway and bends in the track would be wider to accommodate turning space for large vehicles. Routes for large vehicles accessing the Order Limits are considered in Chapter 14: Traffic and Movement (ES Volume 1) **[EN0110012/APP/LVS/06.01.14]**.
- 5.2.15 Chapter 14: Traffic and Movement (ES Volume 1) **[EN0110012/APP/LVS/06.01.14]** provides an assessment of these accesses to the Solar Development Sites, as well as the access routes and points along the Cable Route Corridor.

Construction staff

- 5.2.16 For the purposes of assessment, it is assumed that the construction of the Proposed Development elements would happen concurrently, maximising the estimated potential numbers of construction staff working on the Proposed Development.
- 5.2.17 Based on the phasing assumptions and the Applicant's experience of other similar sized solar projects, it is currently estimated that the Proposed Development would generate a peak of 770 construction workers and 298 Full Time Equivalent (FTE) jobs during the construction phase. The size of the workforce is based on the activities required and would fluctuate during the construction period. An average of 385 construction workers is anticipated to be working across the seven Solar Development Sites during the day, as well as a peak of approximately 120 construction workers (46.5 FTE) distributed along the Cable Route Corridor with an additional peak of 35 staff delivering equipment to the Site.

Construction controls

- 5.2.18 The construction phase would be subject to a suite of management plans which will limit and control activities. The outline documentation (for which detailed versions, in substantial accordance with these outlines, will be submitted for approval to NYC before construction commences) that has been prepared to support the DCO Application and set out the mitigation measures for this phase includes:
- 1) Outline Construction Environmental Management Plan (oCEMP) **[EN0110012/APP/LVS/07.02]** which sets out mitigation measures for all the topics considered in this ES for the construction phase.

- 2) Outline Materials and Waste Management Plan (oMWMP) **[EN0110012/APP/LVS/07.07]** which sets out how excavated materials that will be generated during construction of the Proposed Development will be re-used, recycled or disposed of in a manner that is compatible with the Waste Framework Directive and associated regulations.
- 3) Outline Pollution and Spillage Response Plan (oPSRP) **[EN0110012/APP/LVS/07.08]** which sets out the intended strategies for managing pollution and spillage incidents within the Order Limits.
- 4) Outline Public Rights of Way Management Plan (oPRoWMP) **[EN0110012/APP/LVS/07.09]** which provides details of the mitigation measures proposed to manage impacts upon Public Rights of Way (PRoW) within the Proposed Development's Order Limits.
- 5) Outline Construction Traffic Management Plan (oCTMP) **[EN0110012/APP/LVS/07.12]** which sets out how construction traffic and staff vehicle movements will be managed during construction.
- 6) Outline Skills, Supply Chain and Employment Plan (oSSCEP) **[EN0110012/APP/LVS/07.13]** which sets out the Applicant's commitments and overall approach to promoting competition, innovation and skills within the local and regional areas of the Proposed Development. It outlines how the Applicant will identify and secure the workers, skills, equipment and services required to deliver the Proposed Development and includes commitments to engage with relevant stakeholders on opportunities for local employment, skills development and supply chain participation throughout the delivery of the Proposed Development.
- 7) Outline Soil Resources Management Plan (oSRMP) **[EN0110012/APP/LVS/07.14]** which sets out the overall approach to managing soil resources affected by the Proposed Development.

5.2.19 Appropriate requirements have been included in the Draft DCO **[EN0110012/APP/LVS/03.01]** to ensure detailed management plans will be developed to full versions substantially in accordance with the outline management plans. The detailed plans will be submitted to NYC for approval prior to commencement of the relevant phase of development and the measures described in them are implemented.

5.3 Operation and maintenance

5.3.1 The Proposed Development is anticipated to have an operational life of up to 60 years.

Operation and maintenance activities

5.3.2 During the operation phase two scenarios have been considered within the ES:

- 1) General operational maintenance activities; and
- 2) Programme of replacement activities.

General operational maintenance activities

- 5.3.3 During operation and maintenance, other than in the context of a programme of replacement, activity on the Solar Development Sites would be restricted principally to vegetation management, equipment maintenance and servicing, ad hoc replacement and renewal of any components that fail or reach the end of their lifespan, periodic fence inspection, vegetation management along accesses, permissive paths and landscape ecological mitigation maintenance (see **Figure 5** in **Annex A** - Figures of this NTS), and monitoring to ensure the continued effective operation of the Proposed Development.
- 5.3.4 Along the Cable Route Corridor, operational activity will consist of routine inspections and any reactive maintenance such as where a cable has been damaged.

Programme of replacement activities

- 5.3.5 The following assumptions have been made for the programme of replacement activities:
- 1) It is expected that the operational life of Solar PV Panels is 40 years or more, and that all the Solar PV Panels will be replaced once during the operational phase. The Solar PV Panels are anticipated to be replaced over a maximum 12 to 24 month period;
 - 2) It is expected that the BESS Compound infrastructure (minus BESS Compound buildings) could be replaced up to five times during the operational phase, inclusive of complete BESS Enclosures replacement up to three times;
 - 3) Accesses to the Solar Development Sites defined in table 2-5 of Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]** would be used during the replacement activities. If any abnormal loads are required for the replacement of equipment consultation will be carried out and approvals will be sought from the relevant local planning and highways authorities;
 - 4) Components such as Solar PV Mounting Structures, cabling and the Substation are not anticipated to be replaced during the operational phase. No intrusive ground works are anticipated to replace Solar PV Panels or BESS; and
 - 5) Transformers are assumed to have a design life of 30 years, transformers may require replacement once during the lifetime of the Proposed Development, although, replacement will only be carried out if required for performance or health and safety reasons.

Operation and maintenance access

- 5.3.6 During operation there would be a small number of vehicle trips (each Solar Development Site receiving approximately five maintenance visits per month by

light goods vehicles (LGCs)), with additional staff attending when required for maintenance and cleaning activities. During any periods of replacement (as discussed in Section 5.3.5), this will occur on a site-by-site basis and it is expected that the vehicle trips will be lower than during the construction phase.

5.3.7 Existing field accesses would be used, where practicable, and some access points from the construction phase would continue to be used (where required). The following accesses (presented in table 2-5 of Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]**) would be the primary point of access used during operation (refer to **Figure 3** in **Annex A** – Figures of this NTS):

- 1) Solar Development Site 1 – Accesses 1 and 2;
- 2) Solar Development Site 2 – Accesses 3 and 4, with accesses 5 and 6 for emergency purposes only;
- 3) Solar Development Site 3 – Access 7;
- 4) Solar Development Site 4 – Accesses 8, 9, 10 and 11;
- 5) Solar Development Site 6 – Accesses 12 and 13;
- 6) Solar Development Site 7 – Access 14; and
- 7) Solar Development Site 8 – Access 15.

5.3.8 The frequency of regular maintenance visits would reasonably be expected to be limited to no more than five visits per month to any of the Solar Development Sites. Limited use of HGVs may be required for the ad-hoc replacement of components.

Operational staff

5.3.9 No permanent on-site staff will be required to operate the Proposed Development, but there will be limited staff facilities located in the control rooms associated with the 275 kV substations. Some permanent equipment for monitoring the Solar Development Sites will be located in the Control Building. Whilst this would typically be accessed remotely, it would be available for the occasional physical access during routine visits. A further 15 FTE staff jobs would be created, which would not be based on site. It is anticipated that the Proposed Development will create 188 Full Time Equivalent employees during replacement activities, with a peak month requiring up to 541 construction workers on site during the replacement activities.

Operation and maintenance controls

5.3.10 The operation and maintenance phase would be subject to management documents which will manage and control activities. Outline documentation (for which detailed versions, in substantial accordance with these outlines, will be submitted for approval to NYC) has been prepared to support the DCO Application to set out the measures that will be used to mitigate effects associated with this phase and includes the following:

- 1) Outline Operational Environmental Management Plan (oOEMP) **[EN0110012/APP/LVS/07.03]**;
- 2) Outline Landscape and Ecological Mitigation Plan (oLEMP) **[EN0110012/APP/LVS/07.05]**;
- 3) Outline Battery Fire Safety Management Plan (oBSMP) **[EN0110012/APP/LVS/07.06]**; ~~and~~
- 4) Outline Public Rights of Way Management Plan (oPRoWMP) **[EN0110012/APP/LVS/07.09]**; ~~and~~ [\[EN0110012/APP/LVS/07.10\]](#); and
- 5) Outline Bird Mitigation Area Management Plan (oBMAMP) **[EN0110012/APP/LVS/07.19]**.

5.4 Decommissioning

- 5.4.1 Decommissioning is expected to take between 12 and 24 months, with a 24 month decommissioning period being assumed for the purposed of a worst-case assessment in the ES, unless specifically stated otherwise within the technical chapter. A requirement to decommission the Proposed Development is secured via a Requirement in the Draft DCO **[EN0110012/APP/LVS/03.01]**.
- 5.4.2 When the operation and maintenance phase ends, the Solar Development Sites would be decommissioned and the land returned to its original use and condition as far as practicable and returned to the landowner. All solar PV modules, BESS and all associated infrastructure would be removed from within the Solar Development Sites and recycled and disposed of in accordance with good practice and market conditions at that time. Foundations and other below ground infrastructure will be removed to 1.2 m below the surface to enable future ploughing, and any piles would be removed.
- 5.4.3 Post-decommissioning, the landowners would choose how the land is to be used and managed, the landowner may return all of the land to arable use, although it is likely that established habitats such as hedgerows and woodland would be retained given their potential benefits to agricultural land and the wider farming estate. Permissive paths would be removed during decommissioning, with the precise timing to be determined by the contractor(s) and communicated to NYC in accordance with the outline Decommissioning Environmental Management Plan (oDEMP) **[EN0110012/APP/LVS/07.04]**.
- 5.4.4 The mode of removing the Interconnecting Cables and Grid Connection Cables during decommissioning would be dependent upon government policy and good practice at that time. Currently, the most environmentally acceptable option is considered to be leaving the cables in situ, as this avoids disturbance to overlying land and habitats and to neighbouring communities. Alternatively, the cables can be removed by opening up the ground at regular intervals and pulling the cable through to the extraction point, leaving the ducting and jointing bays in place, avoiding the need to open up the entire length of the cable route. The impact assessment is based on the worst-case parameters for each technical topic.

- 5.4.5 All work to the Existing National Grid Monk Fryston Substation would remain under National Grid's control.
- 5.4.6 The effects of decommissioning would be similar or of a lesser magnitude than construction effects and are considered in the relevant sections of the ES. The specific method of decommissioning of the Proposed Development at the end of its design life is uncertain at present as the engineering approaches to decommissioning would evolve over the design life of the Proposed Development. Assumptions have therefore been made where appropriate.

Decommissioning controls

- 5.4.7 The decommissioning phase would be subject to a Decommissioning Environmental Management Plan which will be developed pre-decommissioning to be in substantial accordance with the oDEMP [EN0110012/APP/LVS/07.04], and approved by NYC, and which will manage and control decommissioning activities.

6 Assessing environmental effects

6.1 Topics assessed

- 6.1.1 Chapters 1 to 4 (ES Volume 1) **[EN0110012/APP/LVS/06.01]** provide a description of the Proposed Development and its surroundings, an overview of the Proposed Development, an overview of the alternatives considered during the design evolution, an introduction to energy need and policy and legislative context, and the approach and methodology to the EIA.
- 6.1.2 The following topic specific chapters have been produced and assessed in ES Volume 1 **[EN0110012/APP/LVS/06.01]**:
- 1) Chapter 5: Agricultural Land and Soils;
 - 2) Chapter 6: Biodiversity;
 - 3) Chapter 7: Climate Change Resilience;
 - 4) Chapter 8: Cultural Heritage;
 - 5) Chapter 9: Greenhouse Gas Emissions;
 - 6) Chapter 10: Landscape and Visual;
 - 7) Chapter 11: Noise and Vibration;
 - 8) Chapter 12: Ornithology;
 - 9) Chapter 13: Socioeconomics;
 - 10) Chapter 14: Traffic and Movement;
 - 11) Chapter 15: Water Resources and Flood Risk;
 - 12) Chapter 16: Other Environmental Matters, which sets out a summary of the conclusions of the following detailed technical report appendices:
 - a) Air Quality Assessment - Construction Dust Assessment;
 - b) Arboricultural Impact Assessment;
 - c) BESS Fire Emissions Modelling;
 - d) Electromagnetic Field (EMF) Assessment;
 - e) Ground Conditions - Preliminary Risk Assessment; and
 - f) Glint and Glare.
- 6.1.3 Chapter 17: Cumulative and In-Combination Effects (ES Volume 1) **[EN0110012/APP/LVS/06.01.17]** describes cumulative effects (the effects of the Proposed Development and other identified developments on sensitive receptors) and effect interactions (where more than one ES topic could impact upon a sensitive receptor).
- 6.1.4 Chapter 18: Conclusions and Summary (ES Volume 1) **[EN0110012/APP/LVS/06.01.18]** presents a brief summary of the ES, outlining the significant effects identified during the EIA process.

6.2 Approach to assessment

- 6.2.1 For all topic assessments, a Study Area is defined which comprises a radial buffer applied to the Order Limits of the Solar Development Sites and Cable Route Corridor, Highways Improvement Areas, and Site 8 Access Area (as relevant for the topic). Some topics have not applied radial buffer Study Areas to the Highway Improvement Areas because they comprise highly localised works relating to access and visibility improvements, largely vegetation management and temporary removal of street furniture. Some topics have also not applied radial buffers to the Site 8 Access area because this is only being used for a temporary period for access purposes during construction.
- 6.2.2 To enable comparison between technical topics and to aid understanding of the ES findings, standard terms are used wherever possible to describe the relative significance of effects throughout the ES (i.e. 'major', 'moderate', 'minor', and 'negligible'). The effects are also described as being adverse or beneficial. Where technical disciplines deviate from the standard assessment methodology, these are described in the relevant technical chapters of the ES (ES Volume 1) **[EN0110012/APP/LVS/06.01]**.
- 6.2.3 Each of the technical chapters within the ES (ES Volume 1) **[EN0110012/APP/LVS/06.01]** provides a further description and definition of the significance criteria relevant to the discipline. Where practicable, this has been based upon quantitative and accepted criteria (e.g. noise assessment guidelines), together with the use of value judgement and expert interpretation to establish to what extent an effect is significant.
- 6.2.4 Typically, effects that are considered to be negligible or minor are judged to be 'not significant', whereas those that are moderate or major are 'significant'. Where the EIA presented in the ES predicts a significant adverse effect on one or more receptors, it has been considered whether there are further mitigation measures which could be implemented to avoid or reduce the effect or reduce the likelihood of it happening. The use of any such mitigation will be secured through the DCO Application should it be granted. As the design of the Proposed Development has evolved, the Applicant has worked with environmental specialists to ensure the design avoids or reduces environmental effects on receptors where practicable through the use of measures that form part of the design or methods for construction or operation (also known as embedded mitigation measures), such as the use of an oCEMP **[EN0110012/APP/LVS/07.02]**. These measures are taken into account in the EIA and assessment of effects of the Proposed Development.

7 ES findings

- 7.1.1 An assessment of the environmental effects of the Proposed Development during its construction, operation and maintenance, and decommissioning phases has been completed for each of the topics identified in Section 6.1 above. Key environmental and planning constraints are presented in **Figure 6** in **Annex A – Figures** of this NTS.

7.2 Agricultural Land and Soils

- 7.2.1 Environmental Statement Chapter 5: Agricultural Land and Soils (ES Volume 1) **[EN0110012/APP/LVS/06.01.05]** has considered the findings of the likely significant environmental effects of the Proposed Development in relation to agricultural land and soils.

Baseline and context

- 7.2.2 The Study Area for Agricultural Land and Soils comprises all of the agricultural land within the Order Limits, including the Solar Development Sites, BESS Compound and Cable Route Corridor. The baseline conditions have been determined through desk-based study and later refined through site surveys.
- 7.2.3 Soil and Agricultural Land Classification (ALC) surveys have been undertaken across all of the Solar Development Sites, at a density of one observation per 2 hectare (ha), as agreed with Natural England. Representative soil and ALC surveys have been undertaken within the Cable Route Corridor, as agreed with Natural England.
- 7.2.4 The Solar Development Sites are located on approximately 900 ha of mostly agricultural land, primarily in arable use. The mapped soil information shows ten soil associations present within the Order Limits, broadly grouped into:
- 1) **Loamy and sandy soils affected by groundwater:** these include the Sessay, Arrow and Blackwood associations, which comprise fine to coarse loamy and sandy soils with variable drainage and wetness classes. These soils are generally well to imperfectly drained and may support Best and Most Versatile (BMV) agricultural land;
 - 2) **Clayey and slowly permeable soils:** represented by the Foggathorpe 2, Enborne, and Bishampton 1 associations, these soils typically have fine loamy or clayey textures with slowly permeable subsoils. They are imperfectly to poorly drained and are less likely to be classified as BMV land; and
 - 3) **Sandy and loamy soils over clay or limestone:** The Everingham association features fine sandy soils over clay, with moderate to good drainage, and is likely to be BMV land.
- 7.2.5 Additional soil associations are mapped along the Cable Route Corridor, including:

- 1) Wigton Moor – similar to Sessay, associated with river terrace deposits;
- 2) Romney – deep, permeable, calcareous silty soils near the River Ouse; and
- 3) Newport 1 – deep, well-drained sandy and coarse loamy soils, likely to be BMV.

7.2.6 Land within the Solar Development Sites is comprised of approximately 495 ha (55% of agricultural land) classified as BMV quality, mostly in Subgrade 3a (34% of agricultural land) with the remaining proportion Grade 2 (18% of agricultural land) and Grade 1 (2% of agricultural land), and approximately 410 ha (45% of agricultural land) as Subgrade 3b and which is not BMV land.

Embedded mitigation

7.2.7 The following embedded mitigation measures have been incorporated into the design of the Proposed Development.

Construction

7.2.8 The oSRMP [EN0110012/APP/LVS/07.14], as well as the oCEMP [EN0110012/APP/LVS/07.02] set out good practice measures to ensure adverse effects on soil and agricultural land are minimised where practicable which will be incorporated into detailed versions of those plans which the construction of the Proposed Development must be carried out in accordance with. This includes only handling or tracking soils that are in a dry condition and ensuring topsoil and subsoils are handled separately when being stripped, stored and reinstated.

7.2.9 The Proposed Development design seeks to site semi-permanent infrastructure (e.g. substations) on lower quality agricultural land where this does not conflict with other environmental objectives or affect delivery of the project benefits. For example, the 275 kV substation in Solar Development Site 1 is located on agricultural land of Subgrade 3b quality, which is not considered BMV land, and is therefore lower quality.

Operation and maintenance

7.2.10 Continued adherence to the detailed Soil Resources Management Plan (SRMP) when accessing areas for maintenance and replacement activities will avoid adverse effects on soils during the operation phase.

Decommissioning

7.2.11 The oSRMP [EN0110012/APP/LVS/07.14] and oDEMP [EN0110012/APP/LVS/07.04] make provision for the decommissioning phase with regards to tracking and handling of soils, similar to the construction phase.

Assessment of effects

Construction

- 7.2.12 During construction, the Proposed Development would result in the temporary loss of the use of land for agricultural purposes across the Solar Development Sites. The majority of land would accommodate Solar PV Panels which would be secured by metal posts driven into the ground, with non-penetrative methods used in archaeologically sensitive areas. This would result in a minimum disturbance to the soil resource.
- 7.2.13 Temporary Solar Development Site Construction Compounds and Cable Construction Compounds, laydown areas, and works within the Cable Route Corridor would require topsoil stripping and short-term disturbance of soils. Built infrastructure such as substations, access tracks and the BESS would result in long-term soil sealing, though it is assumed that the process of decommissioning would involve the removal of all solar infrastructure, including the solar PV modules, and BESS and all associated infrastructure (including On-Site Cabling) to 1.2 m bgl which would mean that the land could again be used for agricultural purposes. The mode of dealing with Interconnecting Cables, On-site Cables (where below-ground) and Grid Connection Cables during decommissioning would be dependent upon government policy and good practice at that time.
- 7.2.14 The Solar Development Sites cover approximately 900 ha of agricultural land, inclusive of:
- 1) approximately 179.4 ha (20%) of Grades 1 and 2 land (very high sensitivity);
 - 2) approximately 307.0 ha (34%) of Subgrade 3a land (high sensitivity); and
 - 3) approximately 402 ha of Subgrade 3b land (medium sensitivity).
- 7.2.15 The change of use [of agricultural land for panel areas, including all temporary construction elements and access tracks](#) is considered temporary (albeit long-term, the lifetime of the Proposed Development) and reversible. Effects on agricultural land therefore include:
- 1) a **moderate adverse effect** on Grades 1 and 2 land, which is **significant**; and
 - 2) a **minor adverse effect** on Subgrades 3a and 3b, which is **not significant**.
- 7.2.16 [The built infrastructure components required for the operation of the Proposed Development would require the long-term removal of land from agricultural use as well as soil sealing. As noted in Chapter 2: The Proposed Development \(ES Volume 1\) \[EN0110012/APP/LVS/06.01.02\], it is assumed that all fixed infrastructure will be removed at decommissioning, including the BESS, and the land returned to its current use. However, as the soil is sealed, the change of land use is assessed as a permanent loss to differentiate from the solar panel areas which are subject to a temporary long-term change of use, but which will remain](#)

in-situ. Therefore, the land requirement for the following components is assessed as permanent.

~~7.2.16~~7.2.17 The location of the BESS (up to 10.5 ha) in Solar Development Site 2 comprises land in Grades 1 and 2. This land is of very high sensitivity which would be subject to a medium magnitude of impact, resulting in a **major adverse effect**, which is **significant**.

~~7.2.17~~7.2.18 The ~~495~~486 ha of BMV land within the Proposed Development (of which approximately ~~17.5~~19.1 ha would be required for the permanent elements of the Proposed Development involving soil sealing) represents only 1% of BMV land in the Selby District, and 0.08% in the Yorkshire and Humber Region, which is not considered significant in the wider context.

~~7.2.18~~7.2.19 Soil types across the Proposed Development range from coarse loamy (low sensitivity) to heavy clayey textures (high sensitivity). Temporary soils disturbance would be managed in accordance with the detailed Soil Resource Management Plan, ensuring a low magnitude of change. Effects on soils include:

- 1) **moderate adverse effects** on heavy-textured soils, which is **significant**; and
- 2) **minor or negligible adverse effects** on medium and coarse-textured soils, which is **not significant**.

~~7.2.19~~7.2.20 Long-term soil sealing under built infrastructure could result in **moderate adverse effects** on high sensitivity soils, which would be **significant**. Remedial soil management measures are set out in the oSRMP [EN0110012/APP/LVS/07.14], and oDEMP [EN0110012/APP/LVS/07.04].

Operation and maintenance

~~7.2.20~~7.2.21 During the operational phase of the Proposed Development, agricultural land within the Solar Development Sites would remain largely unavailable for primary agricultural production. However, maintenance activities and component replacement are not expected to result in significant effects, as they would not involve soil disturbance and would be managed in accordance with the detailed Operational Environmental Management Plan (OEMP), which would reflect the principles of the oSRMP [EN0110012/APP/LVS/07.14].

~~7.2.21~~7.2.22 Importantly, the removal of land from intensive arable farming is expected to result in improvements to soil health. Conversion of arable land to grassland or low-input pasture is known to enhance soil organic matter, carbon content, and moisture retention. These improvements support better nutrient cycling, soil structure, and resilience, contributing to healthier soils and increased carbon sequestration.

~~7.2.22~~7.2.23 Empirical evidence from over 25,000 soil samples collected between June 2023 and May 2024 (Ref 5) confirms that grassland soils typically contain twice the soil organic matter of arable soils. As such, the operational phase of the Proposed Development is expected to result in a **moderate beneficial effect** on soil health across the 914 ha of land affected, which is considered **significant**.

Decommissioning

~~7.2.23~~7.2.24 At decommissioning, the removal of Solar PV Panels and above-ground infrastructure would result in some disturbance to soils, although this is expected to be less than during the construction phase. Underground cables are proposed to remain in-situ, further reducing the extent of soil disruption.

~~7.2.24~~7.2.25 Soil management during decommissioning would follow best practice measures set out in the detailed Decommissioning Environmental Management Plan (DEMP), which would reflect the principles of the oSRMP [EN0110012/APP/LVS/07.14]. These measures would help minimise any adverse effects on soil resources.

~~7.2.25~~7.2.26 The return of land to agricultural use would represent a reversal of the construction phase impacts. As such, the effects on agricultural land are expected to be of a similar magnitude but beneficial in nature, with the land once again available for food production, as and if required at the time.

Additional mitigation

~~7.2.26~~7.2.27 No additional mitigation has been applied in relation to agricultural land and soils. The residual effects remain as assessed.

Enhancement

~~7.2.27~~7.2.28 There is potential to reduce the loss of the use of land for agricultural production by also using the land for some form of agricultural production, which is common in England.

~~7.2.28~~7.2.29 Although the assessment assumes that vegetation will be managed with machinery, there are no known restrictive covenants that would prevent land beneath the panels being grazed by livestock.

Residual effects

~~7.2.29~~7.2.30 There is no method to mitigate direct, temporary but long-term loss of land for agricultural production resulting from the construction of the Proposed Development. The construction phase effects remain as: a temporary long-term **moderate adverse effect** on Grade 1 and 2 agricultural land which is **significant**, and **minor adverse effect** on Subgrades 3a and 3b agricultural land, which is **not significant**. With effects on soil resources remaining as: **moderate adverse effects** on heavy-textured soils, which is **significant**, and **minor or negligible adverse effects** on medium and coarse-textured soils, which is **not significant**.

~~7.2.30~~7.2.31 No adverse significant effects are anticipated to arise during the operation and maintenance phase of the Proposed Development.

~~7.2.31~~7.2.32 Improvements to soil health, quality and structure from taking land out of intensive arable production would result in a temporary, **moderate beneficial**

effect on soils resources to be realised in the operational and decommissioning phases, which is considered to be **significant**.

7.3 Biodiversity

- 7.3.1 Environmental Statement Chapter 6: Biodiversity (ES Volume 1) [EN0110112/APP/LVS/06.01.06] has considered the likely significant effects arising from the construction, operation and maintenance and decommissioning of the Proposed Development in respect of terrestrial and aquatic biodiversity, excluding ornithology, which is covered in Chapter 12: Ornithology (ES Volume 1) [EN0110012/APP/LVS/06.01.12].

Baseline and context

- 7.3.2 The Study Area includes the Solar Development Sites and the Cable Route Corridor, as well as access routes and buffer zones around the Order Limits. The extent of the Study Area varies depending on the ecological feature being assessed, following industry standards and regulatory guidance. Surveys and assessments cover a wide range of ecological receptors, including designated international and national sites (up to 20 kilometres (km) and 2 km), SSSIs, impact risk zones, local wildlife sites, notable habitats and species, and specific surveys for bats, otters, water voles, great crested newts, badgers, fish, and white-clawed crayfish. The approach and boundaries have been informed by ongoing consultation with NYC, the Environment Agency, and Natural England.
- 7.3.3 The Study Area covers a mix of arable land, grassland, hedgerows, ditches, ponds, woodland and scrub. Several designated nature conservation sites of international, national and county importance are located within or near the Study Area, including Special Areas of Conservation (SACs), Ramsar sites, SSSIs, and Sites of Importance for Nature Conservation (SINCs).

Habitats

- 7.3.4 The Solar Development Sites and Cable Route Corridor support a range of habitats, such as arable fields, neutral and modified grasslands, species-rich hedgerows, wet ditches, ponds, woodland copse, and scattered trees. Some habitats are of county or local importance, and invasive non-native species (e.g. Himalayan balsam, Japanese knotweed) have been recorded in certain areas.

Species

- 7.3.5 The area provides habitat for a variety of protected and notable species, including:
- 1) **Otter**: confirmed presence in some ditches and nearby rivers.
 - 2) **Badger**: setts and signs recorded across the Study Area.
 - 3) **Bats**: several common species recorded, with activity typical for the habitat type.

- 4) **Water vole:** evidence found in some ditches.
- 5) **Great crested newts:** Records within 2 km of some sites; no evidence in ponds surveyed but ponds assumed positive where access was restricted.
- 6) **Reptiles:** Grass snake, common lizard and adder recorded in the wider Study Area.
- 7) **Brown hare** and **hedgehog:** known to be present across the Study Area.
- 8) **Fish:** the River Ouse and Selby Dam support migratory and coarse fish species, while most other watercourses support only minor species.
- 9) **White-clawed crayfish:** considered absent based on survey results.
- 10) **Invertebrates:** no notable species recorded within the Order Limits, but some records in the wider area.

Ecological importance

- 7.3.6 Features assessed range from international (SACs, Ramsar sites) and national (SSSIs) to county and local importance (SINCs, hedgerows, ditches, ponds and species). The baseline reflects a landscape of mixed agricultural and semi-natural habitats supporting a diverse range of flora and fauna.

Embedded mitigation

- 7.3.7 The Proposed Development has been designed to avoid, reduce and manage impacts on biodiversity from the outset. Key embedded and good practice measures include:
- 1) Locating construction compounds and infrastructure on areas of low ecological value where practicable, and away from sensitive habitats and species.
 - 2) Establishing buffer zones that include:
 - a) At least 15 m around ancient / veteran trees and woodlands;
 - b) 10 m around non-ancient woodland and watercourses;
 - c) 5 m around other trees; and
 - d) 30 m from known badger setts.
 - 3) Retaining and strengthening woodland and hedgerow networks, with new habitat creation to improve the connectivity for wildlife.
 - 4) Using existing field gates, access points, and watercourse crossings where practicable to minimise habitat loss and fragmentation.
 - 5) Designing fencing to allow small mammals to pass through and maintaining commuting corridors for wildlife.
 - 6) Timing construction works to avoid sensitive periods for fish spawning and migration and implementing noise mitigation where needed.
 - 7) Applying pollution prevention measures and sensitive lighting strategies during construction and operation to protect habitats and species.

- 8) Using trenchless technologies for cable crossings at key watercourses and sensitive sites, with open cut crossings only where unavoidable and minimised in width.
- 9) Managing grassland beneath solar panels through low-density grazing or mowing to encourage species diversity.
- 10) Landscape planting and habitat creation within buffer zone and green corridors, managed for ecological benefit and biodiversity net gain.
- 11) Fencing and management of PRoW to reduce disturbance to important habitats.
- 12) During decommissioning, maintaining buffer zones and timing works to avoid sensitive periods for wildlife, with further surveys and mitigation as needed.

7.3.8 All these measures are secured through either the Design ~~Principles and~~ Parameters and Commitments Document [EN0110012/APP/LVS/05.05.0106], the limits of deviation for works set by the Works Plans or being set out in the outline environmental management plans submitted with the application, which will be developed into detailed environmental management plans, ensuring long-term protection and enhancement of biodiversity across the Proposed Development.

Assessment of effects

Construction

Designated Sites

7.3.9 No significant adverse effects are anticipated on internationally, nationally, or locally designated nature conservation sites due to distance, embedded pollution prevention measures, and use of best practice construction methods. As such, effects are assessed as **negligible** and therefore **not significant**.

Habitats

7.3.10 Most valuable habitats (woodland, hedgerows, ponds, grassland, scrub) will be retained and buffered. Any losses are small and will be compensated through habitat creation and enhancement, resulting in a net benefit for biodiversity. Effects on habitats are therefore **negligible** and **not significant or moderate beneficial and significant**.

Species

7.3.11 Protected and notable species (otter, badger, bats, water vole, amphibians, reptiles, brown harem hedgehog, fish, invertebrates) will be protected through buffers, sensitive timing and precautionary working methods.

- 7.3.12 Temporary **significant adverse** effects are identified for otters, roosting bats, water vole, amphibians, reptiles, and brown hare resulting from construction activity such as lighting, noise and human activity. Where the potential for direct harm exists (e.g. accidental injury to water vole, amphibians or bats), additional mitigation such as pre-commencement surveys and, where appropriate, licensing, will ensure that there are **no residual significant adverse effects**.
- 7.3.13 The proposed creation/enhancement of habitats of importance is assessed as **minor beneficial (significant)** at a local level for otter, water voles, and reptiles. And as **moderate beneficial (significant)** for commuting and foraging bats, amphibians, hedgehogs, and invertebrates.

Invasive Non-Native Species (INNS)

- 7.3.14 Management plans and biosecurity measures will prevent the spread of Himalayan balsam and Japanese knotweed, which will result in a negligible or **minor beneficial effect**, which is considered **not significant**.

Operation and maintenance

Designated Sites and Habitats

- 7.3.15 It is expected that the Humber Estuary SAC (international level) would experience a minor adverse impact of low magnitude with regards to aquatic species. This is due to the potential for electromagnetic field (EMF) impacts associated with cables crossing watercourses that can disturb fish species. This is considered **not significant**.
- 7.3.16 Ongoing management and cessation of intensive farming practices (which include the use of fertilisers, pesticides and machinery) will benefit retained and created habitats as detrimental farming practices will no longer be undertaken in proximity to the habitat for the duration of the Proposed Development. Effects are assessed as being **negligible or beneficial** and **not significant**.

Species

- 7.3.17 Routine maintenance of the Proposed Development will be infrequent and with low impact on species. The effects during replacement activities are not anticipated to be any worse, or would be less than, the predicted impacts during construction, pursuant to mitigation measures outlined in the oOEMP [EN0110012/APP/LVS/07.03]. Continued habitat management and monitoring will protect species, with **negligible or beneficial** effects expected, which are considered **not significant**.

Aquatic ecology

- 7.3.18 Potential electromagnetic field (EMF) effects from cables on aquatic ecology are anticipated to be below harmful levels or mitigated through the design of the Proposed Development (such as burying the cable at a minimum distance of [5m](#)).

[m](#) below the river bed level). Therefore, this is assessed as being a **negligible effect** that is considered **not significant**.

Decommissioning

- 7.3.19 Impacts and mitigation measures during decommissioning will be similar to those during construction. Pre-decommissioning surveys and best practice will ensure **negligible effects** on ecological receptors, which is **not significant**.
- 7.3.20 Grassland habitats created under the solar panels may be lost if land reverts back to agriculture, which could result in a **significant adverse effect** at a local/county scale (however the geographical scale of this effect cannot be confirmed, so local/county is assumed as a worst-case). However, this will be dependent on future land management decisions by landowners and not the Applicant. Additional mitigation associated with this effect is unknown at this time but would be detailed within the oDEMP [EN0110012/APP/LVS/07.04] at the time of decommissioning.
- 7.3.21 Depending on the ecological value of the habitats that develop over the lifespan of the Proposed Development (other than the grassland beneath the panel area), it is realistic that certain areas of the Solar Development Sites may be retained due to their value for wildlife on decommissioning. Application of the ecological mitigation hierarchy principles may be necessary.
- 7.3.22 The most environmentally acceptable option at present for decommissioning of the Interconnecting Cables and Grid Connection Cables is to leave the cables in situ, however, the cables can be removed by opening the ground at regular intervals and pulling to cable through to the extraction point, avoiding the need to open-up the entire length of the cable route. This will reduce the potential ecological impacts arising within the Cable Route Corridor during decommissioning, and it is likely any residual adverse effects would **not be significant**.

Additional mitigation

- 7.3.23 Additional mitigation refers to site-specific actions beyond standard measures to reduce potential impacts on biodiversity during construction, operation and maintenance and decommissioning. In this regard, the Applicant has committed to the following:

Construction

- 1) **Otters:** A pre-commencement otter survey of the Order Limits would be conducted at least three months prior to the start of works (to include a 50 m buffer of the proposed works location), to check for any new otter resting places/holts which may be impacted by disturbance or directly impacted through proposed de-vegetation/construction activities. Surveys will be targeted to the area of potential impact and will be assessed at the time as to the need for the survey. If new holts/resting places are identified, they would be retained and buffered in the first instance, with suitable mitigation

put in place to protect/mitigate the feature if retention was not possible, pursuant to a Natural England licence. Potential impacts from trenchless techniques will also be minimised via the supervision of works by an ECoW, minimum 10 m offset from the bank top for entry and exit pits, and other Precautionary Working Methods, where required.

- 2) **Badgers:** Two pre-commencement surveys (3 months and 1 month before works). New setts are to be retained and buffered; if removal is necessary, closure is to be undertaken under licence with compensation measures.
- 3) **Roosting Bats:** Trees with potential roost features are to be surveyed; if roosts confirmed, felling under licence and with mitigation (e.g., bat boxes) is required. Low-suitability trees may be felled under ECoW supervision.
- 4) **Water Voles:** Pre-commencement survey (prior to construction) would be completed to reconfirm the status of the protected species. If present, a licence would be required for any works within 10 m of known vole habitats; where identified. Mitigation includes supervised works and precautionary methods.
- 5) **Amphibians & Great Crested Newts (GCN):** Protective measures during habitat clearance; resurvey of some 34 ponds in April 2026 where access permits. If GCN present, mitigation will be provided via licencing, habitat creation, or district level licencing. To further reduce construction impacts to amphibians / reptiles within the Order Limits, Precautionary Working Methods (PWMs) will be adopted to protect the species e.g. through infilling of excavations / providing adders to reduce likelihood of entrapment.
- 6) **Reptiles:** Staged habitat clearance under ECoW supervision to prevent harm.
- 7) **Brown Hare:** Speed limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas across the construction sites, habitat clearance protocols, self-awareness, and pre-commencement checks during breeding season.

Operation and maintenance

- 7.3.24 No additional mitigation is required during the operation and maintenance phase.

Decommissioning

- 7.3.25 Pre-decommissioning surveys to ensure compliance with biodiversity policies will be undertaken. Potential adverse effects on grassland habitats are anticipated, and mitigation measures are to be detailed in the Decommissioning Environmental Management Plan at the time of decommissioning.

Residual effects

- 7.3.26 Assuming the recommended additional mitigation outlined above is implemented, **no significant adverse residual effects** are anticipated for the construction or operational phase.
- 7.3.27 All other effects remain as previously assessed, including the beneficial effect for a number of species from the proposed creation/enhancement of habitats of importance.
- 7.3.28 Regarding decommissioning residual effects, due to the likely reversion of the grassland habitat to cropland beneath the solar panels, and as additional mitigation associated with this effect is unknown at this time, there will be a **possible residual significant adverse effect**. The geographical scale of which cannot be determined at this time; however it is anticipated to be up to a local/county level as a worst-case scenario.

7.4 Climate Change Resilience

- 7.4.1 Environmental Statement Chapter 7: Climate Change Resilience (ES Volume 1) **[EN0110012/APP/LVS/06.01.07]** has considered the likely significant effects arising from future climate change on the Proposed Development. The assessment considers the operation and maintenance and decommissioning stage only, as the construction stage has been scoped out of the assessment as climatic changes are not expected during the construction phase.

Baseline and context

- 7.4.2 The Study Area for the Climate Change Risk Assessment is the Order Limits of the Proposed Development. The current climate within the Order Limits is used to form the baseline for this assessment, this is based on baseline observations for the period 1980 – 2010 gathered from HadUK observation data (Ref 6).
- 7.4.3 Key baseline observations within the Order Limits from this data show the following:
- 1) the summer mean temperature is 15.8 °C;
 - 2) the winter mean temperature is 4.4 °C;
 - 3) the average summer precipitation is 1.8 mm/day;
 - 4) the average winter precipitation is 1.6 mm/day;
 - 5) the average daily maximum temperature in summer is 20.3 °C;
 - 6) the average daily minimum temperature in winter is 1.6 °C;
 - 7) there are 10.4 hot days/year where the daily maximum temperature is higher than 25 °C;
 - 8) there are an average number of 3 occurrences/year of heatwaves, whereby three days are above 25 °C;

- 9) there are an average of 3.6 occurrences/year where there are dry spells, which include 10 days or more with no precipitation; and
- 10) the average heavy rainfall days per year is 2.3, where rainfall exceeds >20 mm per day.

7.4.4 It is anticipated the future baseline would be different from the current present-day baseline due to changes in climate. For this assessment, the latest climate projections have been assessed, and the following future weather hazards are likely to be applicable to the Proposed Development:

- 1) Warmer winters: During both operation and decommissioning, both the winter average and average daily minimum temperatures are increasing;
- 2) Wetter winters and drier summers: On average, mean summer precipitation is projected to decrease by 24% while mean winter precipitation is projected to increase by 19%;
- 3) Increased heavy rainfall: The number of heavy rainfall events, whereby there is more than 20 mm of precipitation in a single day, will increase, potentially bringing increased risks of flooding; and
- 4) Hotter summers and increases in extreme heat: The average summer temperatures are projected to increase, as are the number of days that exceed 25 °C.

7.4.5 Specific numerical data related to each of these points above are presented within table 7-10 of Chapter 7: Climate Change Resilience (ES Volume 1) **[EN0110012/APP/LVS/06.01.07]**.

Embedded mitigation

7.4.6 The Proposed Development has evolved through an iterative design process, and there are a number of measures embedded within the Proposed Development relevant to Climate Change Resilience. A number of these are below, with a full list available within section 7.8 of Chapter 7: Climate Change Resilience (ES Volume 1) **[EN0110012/APP/LVS/06.01.07]**:

- 1) The locating of all flood-sensitive infrastructure (including BESS and substations) outside of Flood Zone 3 and Flood Zone 2 as far as is practical to reduce the risk of flooding on the Proposed Development.
- 2) To further help protect key infrastructure like the BESS, integrated Conversion Units and the 275 kV substations, these will be elevated by ensuring the minimum Finished Floor Level (FFL) would be set to the design event flood level plus 0.3 m freeboard or the credible maximum scenario flood level, whichever is greater, to ensure that critical equipment remains above expected flood levels and continues to operate under design flood conditions).
- 3) Permeable surfaces (materials that allow water to pass through them) will be utilised for the on-site Solar PV access tracks.

- 4) The BESS system will include Heating, Ventilation and Cooling (HVAC) systems to maintain appropriate operating temperatures to mitigate the risk of overheating and fire.
- 5) Perimeter fencing will reduce the risk of wind-blown debris damaging the BESS or the substations and appropriate lightning protection will be constructed to reduce the risk of damages caused by lightning strikes.

7.4.7 Further embedded mitigation measures related to Climate Change Resilience are included within a number of management plans. These include the oCEMP [EN0110012/APP/LVS/07.02], the oOEMP [EN0110012/APP/LVS/07.03], the oDEMP [EN0110012/APP/LVS/07.04], the oLEMP [EN0110012/APP/LVS/07.05] and the oBSMP [EN0110012/APP/LVS/07.06].

Assessment of effects

Operation and maintenance

- 7.4.8 During operation, the Proposed Development could be exposed to more frequent extreme weather events, such as storms, heavy rainfall, high winds and heatwaves as climate change progresses. These conditions could potentially damage infrastructure like solar panels, substations and the BESS, and pose risks to people working on site during the operational and maintenance phase.
- 7.4.9 To address these risks, the design of the Proposed Development includes measures to make it resilient to future climate conditions. These measures include using weather-resistant materials, raising flood-sensitive equipment above predicted flood levels, and implementing operational procedures through environmental management plans.
- 7.4.10 Although hotter summers and more frequent heatwaves could reduce the efficiency of solar panels through the overheating of electrical equipment, and increase potential health risks for workers, the embedded mitigation measures detailed above in Section 7.4.6 are expected to provide sufficient resilience. As a result, **no significant adverse effects** are anticipated during the operation and maintenance phase of the Proposed Development.

Decommissioning

- 7.4.11 When the Proposed Development is decommissioned, extreme weather events such as storms, heavy rainfall, high winds and heatwaves could pose risks to workers and equipment on site. These conditions may cause physical damage to plant and machinery or increase health risks, such as heat-related illness.
- 7.4.12 These risks would be managed through standard health and safety measures, including the use of protective equipment and rescheduling activities during severe weather. By the time decommissioning occurs (the operational life of the Proposed Development is anticipated to be up to 60 years), climate hazards may be more frequent or intense, but it is expected that best practice in health and safety and decommissioning techniques will have evolved to address these risks.

As a result, **no significant adverse effects** are anticipated during the decommissioning phase.

Additional mitigation

- 7.4.13 Additional mitigation comprises actions that require additional site and project specific activity in order to achieve a reduction in effect, and/or anticipated outcome.
- 7.4.14 The Climate Change Resilience Assessment provided within Appendix 7.1 (ES Volume 3) **[EN0110012/APP/LVS/06.03.07.01]** has found that the embedded mitigation measures are expected to provide sufficient levels of mitigation against projected climate changes and so no additional mitigation is proposed.

Residual effects

- 7.4.15 The Proposed Development's design and embedded mitigation measures effectively address climate change risks. Therefore, the climate change risks during the construction, operation and maintenance or decommissioning phase are **not significant** and therefore there are **no residual effects**.

7.5 Cultural Heritage

- 7.5.1 Environmental Statement Chapter 8: Cultural Heritage (ES Volume 1) **[EN0110012/APP/LVS/06.01.08]** has assessed the likely significant effects arising from the construction, operation and maintenance and decommissioning of the Proposed Development on cultural heritage.

Baseline and context

- 7.5.2 The cultural heritage Study Area comprises a radial buffer applied to the Order Limits of the Solar Development Sites and Cable Route Corridor. These radial buffers include:
 - 1) A 2 km radial buffer applied around Solar Development Sites 1-4 and 6-8 and combined with a 500 m radial buffer around the Cable Route Corridor for designated heritage assets and sites protected by another act of parliament.
 - 2) A 1 km radial buffer around Solar Development Sites 1-4 and 6-8 and combined with a 500 m radial buffer around the Cable Route Corridor for non-designated heritage assets.
 - 3) 16 further designated heritage assets located beyond the 2 km and 500 m radial buffers have been included in the assessment in response to comments received at Scoping from Leeds City Council.
- 7.5.3 Within the Study Area, there are numerous designated heritage assets, including scheduled monuments, listed buildings (Grades I, II and II*), conservation areas, and potential military aircraft crash sites. Only one designated asset (a Grade II listed milestone, NHLE 1148541) is located within the Order Limits.

7.5.4 In addition to these, hundreds of recorded heritage assets and findspots, as well as further potential assets identified through surveys, are present across the Solar Development Sites, Cable Route Corridor and Highway Improvement Areas. These include archaeological features such as field systems, enclosures, moats and historic boundaries, reflecting the area's long history of settlement and land use.

7.5.5 No World Heritage Sites, registered battlefields, or protected wreck sites are present within the Order Limits or Study Area.

Embedded mitigation

7.5.6 The Proposed Development has been carefully designed to minimise impacts on the historic environment. These key embedded mitigation measures are detailed in the oCEMP [EN0110012/APP/LVS/07.02] and include the following:

- 1) Avoiding direct impacts on designated heritage assets and minimising indirect effects through careful site layout and micro-siting of solar panels, with sensitive areas either set aside completely or reserved for environmental mitigation.
- 2) Preserving archaeological remains in situ where practicable, for example by using concrete feet or other non-ground penetrative techniques for solar panel supports in areas of archaeological interest (see Figure 2.5: Avoidance Areas (ES Volume 2) [EN0110012/APP/LVS/06.02.02.05]), in line with Historic England guidance. The exact locations requiring archaeological protection will be confirmed in the final CEMP, produced at detailed design stage (as outlined in the oCEMP) [EN0110012/APP/LVS/07.02].
- 3) Minimising construction impacts such as light, noise, and vibration through best practice measures set out within the oCEMP [EN0110012/APP/LVS/07.02].
- 4) Routing of construction access and underground cables will be located in existing gaps in hedgerows where feasible, and the final design will seek to retain existing trees and hedgerows, as far as possible, to protect buried archaeology (as set out in the oCTMP [EN0110012/APP/LVS/07.12]).
- 5) Reinstating landscapes after Cable Route Corridor construction to minimise changes to the setting of heritage assets
- 6) Reinforcing existing hedgerows in poor condition with new planting where feasible, to strengthen landscape patterns and habitat connectivity, which will reinforce the Historic Landscape Character (as set out in oLEMP [EN0110012/APP/LVS/07.05]).
- 7) Ongoing protection of preserved features during operation and decommissioning, with management plans in place to ensure best practice is followed throughout the project lifecycle.

Assessment of effects

Construction

- 7.5.7 During construction, both temporary and permanent impacts on cultural heritage are possible. Temporary effects include visual and noise disturbance from construction activities, which are reversible due to their temporary nature. Permanent impacts may result from groundworks, such as the installation of solar panels, substations and cable routes, which could physically affect archaeological remains.
- 7.5.8 Most archaeological features identified are of negligible to low importance, but with some of high importance (such as the two moated sites within Solar Development Site 4). With embedded mitigation, effects are considered as **neutral to minor adverse** which is **not significant**.
- 7.5.9 Impacts on historic landscape character and to the setting of heritage assets beyond the Order Limits range from neutral to minor adverse and are **not significant**.

Operation and maintenance

- 7.5.10 During operation, impacts on archaeological remains and heritage assets are expected to be very limited. Any maintenance or replacement works will use the same access and mitigation methods as that outlined for construction, which will result in no new disturbance.
- 7.5.11 No additional impacts are anticipated for Important Hedgerows or Historic Landscape Character. For heritage assets beyond the Order Limits, operational effects are a continuation of any permanent construction impacts, with **no new significant effects anticipated**.

Decommissioning

- 7.5.12 Decommissioning impacts are expected to be similar to, or less than, those during construction. The removal of infrastructure will largely reverse construction impacts, and less intrusive techniques may be used for cable removal, further reducing potential effects. Further detail is provided in the oDEMP [EN0110012/APP/LVS/07.04].
- 7.5.13 Important Hedgerows preserved in situ will not need to be removed, and any changes to their setting will be **temporary** and **not significant**. For heritage assets beyond the Order Limits, temporary changes in setting may occur, but these will be no greater than those during construction and are temporary.

Additional mitigation

- 7.5.14 In addition to embedded measures, further mitigation will be implemented where necessary to reduce potential impacts on cultural heritage. During construction, if archaeological remains cannot be preserved in situ, they will be recorded through archaeological excavation or monitoring. Site-specific measures, such as

on-site traffic management, tool box talks and protective barriers, will be used to avoid accidental damage to sensitive remains. These actions are set out within the oCEMP [EN0110012/APP/LVS/07.02] and the Archaeological Mitigation Strategy [EN0110012/APP/LVS/07.11].

- 7.5.15 No additional mitigation is anticipated during operation, as impacts are expected to be minimal. When maintenance and replacement works are undertaken, they will use the same mitigation methods as construction (as appropriate to the activities being undertaken), ensuring that there are no new impacts. During decommissioning, similar approaches will be followed, with mitigation measures set out in the oDEMP [EN0110012/APP/LVS/07.04].

Residual effects

Construction

- 7.5.16 With embedded mitigation in place, no significant residual effects are expected for known buried archaeology or other heritage assets within the Order Limits. However, there remains a small risk of significant effects if previously unidentified remains are present in non-surveyed areas, such as parts of the Cable Route Corridor or near some Highway Improvement Areas and Site 8 Access. Where such effects could occur, further mitigation will be implemented as set out in the Archaeological Mitigation Strategy [EN0110012/APP/LVS/07.11].

Operation and maintenance

- 7.5.17 No residual effects are anticipated during the operation and maintenance phase.

Decommissioning

- 7.5.18 No residual effects on buried archaeology are expected during decommissioning. Any temporary effects on heritage assets beyond the Order Limits will be reversed, returning conditions to neutral once decommissioning is complete.

7.6 Greenhouse Gas Emissions

- 7.6.1 Environmental Statement Chapter 9: Greenhouse Gas Emissions (ES Volume 1) [EN0110012/APP/LVS/06.01.09] has assessed the likely significant effects arising from greenhouse gas (GHG) emissions associated with the construction operation and maintenance and decommissioning of the Proposed Development.

Baseline and context

- 7.6.2 The Order Limits currently consist of predominantly of arable land, managed trees and hedgerows. The baseline agricultural GHG emissions are dependent on the soil and vegetation types present, and the fuel used for the operation of any plant and machinery.
- 7.6.3 Baseline GHG emissions for the Proposed Development represent the sequestered carbon as a result of the annual carbon stored by the habitat type.

This value is calculated to be -51.7007 tonnes of carbon dioxide (CO₂) equivalent per year, and is a negative value which demonstrates the sequestration of emissions from the environment, as opposed to the release of emissions.

- 7.6.4 The future baseline is defined as the GHG emissions arising from within the Order Limits in the absence of the Proposed Development. In this scenario, it is assumed that no construction activity would take place within the Order Limits of the Proposed Development, and that this area would continue to operate in its current configuration. As such, it is considered that there will be no change to the future baseline for GHG emissions quoted in the previous paragraph.

Embedded mitigation

Construction

- 7.6.5 A CEMP developed in substantial accordance with the oCEMP [EN0110012/APP/LVS/07.02] will ensure that measures that are considered standard good practice will be implemented by the contractor to reduce the likelihood of impacts or their magnitude, if they were to occur. Some of the measures included within the oCEMP related to GHG emissions include the switching of vehicles and plant off when not in use, adopting the Considerate Constructors Scheme and designing, constructing and implementing the Proposed Development in such a way to minimise the creation of waste.
- 7.6.6 A CTMP will be in place for the Proposed Development, which will optimise the management of traffic and staff vehicles during the construction of the Proposed Development. An outline version of this CTMP is included with the DCO Application (oCTMP [EN0110012/APP/LVS/07.12]).

Operation and maintenance

- 7.6.7 No embedded mitigation is proposed for the operation of the Proposed Development beyond regular maintenance to ensure that there is optimal energy generation efficiency and extending the operational life of components where practicable.
- 7.6.8 A OEMP developed in substantial accordance with the oOEMP [EN0110012/APP/LVS/07.03] will ensure that measures that are considered standard good practice will be implemented by the contractor to reduce the likelihood of impacts or their magnitude, if they were to occur. Some of the measures included within the oOEMP related to GHG emissions include minimising the creation of waste when replacing assets, conducting regular planned maintenance and segregating waste to be re-used and recycled where practicable.

Decommissioning

- 7.6.9 Similar measures to the construction phase will be developed prior to the decommissioning phase and these are outlined in the oDEMP [EN0110012/APP/LVS/07.04]. The oDEMP includes measures that are

considered standard good practice to be implemented by the contractor and reflect the measures outlined above for the oCEMP. However, new best practices and methods may become common place in the future that go beyond those listed for the oCEMP and therefore would be included in the detailed DEMP as appropriate.

Assessment of effects

Construction

- 7.6.10 The construction phase of the Proposed Development is expected to last up to three years and will generate GHG emissions from a range of activities. The total emissions during this phase are estimated to equate to 590,520 tonnes of carbon dioxide equivalent (tCO₂e), based on conservative assumptions.
- 7.6.11 Most of the emissions will come from the manufacturing of materials used in the Proposed Development, particularly batteries for the Battery Energy Storage System (BESS), solar panels and steel frameworks. Other significant sources include concrete and rebar for foundations, as well as components such as Conversion Units, transformers and cables.
- 7.6.12 Additional emissions will result from construction activities on site, including the fuel used by machinery, the transportation of materials and workers and the disposal of waste. While these emissions are unavoidable during construction, they represent a one-off impact associated with building the infrastructure for the Proposed Development.
- 7.6.13 The GHG emissions during construction are considered **minor adverse** and **not significant**, as these emissions are not of a scale that would affect the UK's ability to meet its carbon reduction targets, with construction emissions representing 0.03423 % of the relevant carbon budget.

Operation and maintenance

- 7.6.14 During operation, GHG emissions will mainly come from two sources:
 - 1) Energy use for buildings on site, such as substations and control rooms; and
 - 2) Scheduled replacement of components, including solar panels and batteries, which will require manufacturing and transportation.
- 7.6.15 Over the anticipated 60-year lifespan of the Proposed Development, the replacement activities account for almost all operational emissions. This figure is estimated to be equivalent to 1,260,000 tCO₂e, 99.42% of the total estimated 1,266,790 tCO₂e operational phase emissions for the Proposed Development. This is due to the production of new batteries and panels involving significant embodied carbon.
- 7.6.16 Other minor sources, such as staff travel and water use, are expected to have negligible impacts. While certain electrical equipment contains gases with high global warming potential (such as sulphur hexafluoride SF₆), modern equipment

is designed to minimise leaks, and regular checks will ensure any emissions remain low.

- 7.6.17 Operation emissions, mainly from component replacements, are assessed as **minor adverse** and **not significant**. This assessment has focused on the emissions associated with the Proposed Development, however it does not assess or demonstrate the impact that the Proposed Development will have on the wider decarbonisation of the UK
- 7.6.18 The total renewable energy generated by the Proposed Development is expected to be approximately 568 GWh per year (when allowing for degradation of panels over their life), totalling 34,100 GWh over the Proposed Development's 60-year operational life. In comparison, the equivalent energy generation using the UK power grid (using 2030 as first operational year) is calculated to be 2,900,000 tCO₂e for the 60-year period; at an energy intensity of 85.0 tCO₂e per GWh.
- 7.6.19 The inclusion of the BESS will help balance the grid by storing electricity when demand is low and PV generation is high, reducing reliance on fossil-fuel generation elsewhere. Whilst this benefit is not quantified, it is expected to have a positive impact in emission terms during the operational phase.
- 7.6.20 The Energy System Operator's Future Energy Scenarios (FES) 2025 report outlines how solar capacity will need to grow significantly to meet UK's net zero goals, more than doubling by 2030 and increasing further by 2050. The Proposed Development contributes directly to achieving this capacity need.
- 7.6.21 Overall, when the renewable energy benefits are taken into account, the Proposed Development will provide a **significant beneficial effect**, supporting the UK's transition to net zero.

Decommissioning

- 7.6.22 Decommissioning of the Proposed Development will involve the dismantling and removing of infrastructure, which is generally less emissions intensive than construction. Based on current assumptions, emissions from this phase are estimated at around 5,980 tCO₂e.
- 7.6.23 Because decommissioning will occur more than 60 years in the future, there is uncertainty about the exact emissions and technologies available at the time. It is expected that advances in recycling and sustainable practices will further reduce emissions. Compared to the construction and operational phases, the contribution of decommissioning to overall lifetime emissions is negligible.
- 7.6.24 Emissions during decommissioning are expected to have a **minor adverse effect** that are **not significant**, and negligible compared to construction and operational phases.

Additional mitigation

- 7.6.25 Minimising GHG emissions is a key principle in the design and delivery of the Proposed Development. While detailed construction plans are still to be confirmed, the project will follow recognised best practice and carbon

management standards, such as PAS 2080, to identify opportunities to reduce emissions throughout its life cycle. Examples of measures that may be adopted include:

- 1) Using low-carbon materials where practicable;
- 2) Optimising construction logistics planning to reduce transport emissions;
- 3) Considering more efficient products and technologies during operation, such as electric vehicles and equipment as they become widely available; and
- 4) Applying similar approaches during decommissioning to ensure emissions are minimised.

7.6.26 These measures are to be reviewed and updated as technology and best practice evolve over the lifetime of the Proposed Development.

Residual effects

7.6.27 The GHG assessment findings indicate that the Proposed Development will yield a **significant beneficial effect** during the operation and maintenance phase and achieve a net reduction in GHG emissions. This is compared to a scenario without the Proposed Development, where there is a continued reliance within the UK National Grid on fossil fuels as a source of energy.

7.6.28 Despite the residual emissions associated with construction and decommissioning, the Proposed Development is, by design, reducing national emissions and the UK's reliance on fossil fuels within the UK National Grid.

7.7 Landscape and Visual

7.7.1 Environmental Statement Chapter 10: Landscape and Visual (ES Volume 1) **[EN0110012/APP/LVS/06.01.10]** has assessed the likely significant effects arising from the construction, operation and maintenance and decommissioning of the Proposed Development on the landscape and people's views of the landscape.

Baseline and context

Landscape baseline

7.7.2 The Order Limits are located within a predominantly flat and open landscape, characterised by large arable fields and extensive drainage systems such as ditches and dykes. Views are often expansive with big skies, and vertical structures like power stations are noticeable features.

7.7.3 The northern part of the Order Limits lies within the Vale of York, which is also flat and open but includes more hedgerows and occasional trees, offering limited screening. The western edge sits on the Magnesian Limestone Ridge, which is slightly more elevated and gently rolling, though this area within the Order Limits is still largely open farmland.

- 7.7.4 Across the Order Limits, the landscape varies from low-lying floodplain areas to farmland with patches of woodland and heathland. Overall, the character ranges from low to high value depending on factors such as local designations and the degree of agricultural intensification.

Visual baseline

- 7.7.5 The Order Limits are located within a largely open, rural landscape where views vary depending on location:
- 1) **Solar Development Site 1:** Views are generally open and panoramic across arable fields, with tree belts and woodland edges forming the horizon. Some views are filtered by hedgerows, but residents and users of local roads and PRoWs experience occasional open views into the site.
 - 2) **Solar Development Site 2:** This site is more open, with uninterrupted views from nearby lanes and properties, although roadside hedgerows and trees provide partial screening in places.
 - 3) **Solar Development Sites 3 and 4:** These sites have expansive, open views with big skies and few visual barriers. Vertical features such as pylons are prominent, and views from local roads and PRoWs are generally uninterrupted.
 - 4) **Solar Development Sites 6, 7 and 8:** These sites are more enclosed than Solar Development Sites 3 and 4, with woodland and vegetation along railway lines providing visual containment. Views from nearby roads and PRoWs include open farmland interspersed with hedgerows and scattered trees.
 - 5) **Cable Route Corridor:** The cable routes cross a predominantly rural landscape. In many areas, hedgerows and trees screen views, while gaps provide occasional open views across farmland. For road users and PRoW users, views are often fleeting and alternate between open and enclosed sections.

Future baseline

- 7.7.6 Without the Proposed Development, the landscape and visual amenity is expected to change over time. While it will remain largely rural and agricultural, new developments will introduce more variety in land use and built features. These include energy projects such as gas, hydrogen and renewable facilities, as well as major infrastructure like transmission lines and substations. Large-scale battery storage and solar developments are already planned, alongside employment sites and new housing.
- 7.7.7 These changes will increase the presence of industrial and residential features in the landscape, with pylons and power stations continuing to be prominent views. Overall, the area will become more diverse in character.

Embedded mitigation

- 7.7.8 The design of the Proposed Development has been shaped to reduce its impacts on the landscape and views from the outset. Key embedded mitigation measures within the design include:
- 1) Careful siting and layout of solar panels and infrastructure to fit with the existing landform and vegetation patterns where practicable.
 - 2) Retention of existing trees and hedgerows wherever possible, with new planting introduced to replace any vegetation lost and to provide screening over time.
 - 3) Buffers and setbacks from sensitive areas such as ancient woodland, watercourses, PRow and residential properties to protect visual amenity.
 - 4) Use of existing natural features like hedgerows and woodland to screen views and reduce visibility.
 - 5) Design of security fencing to minimise its visual prominence.
 - 6) Installation of underground cables using trenching, wherever possible, causing minimal disruption to the ground, by cutting, installing and back-filling.
 - 7) Creation of new green infrastructure, including planting and habitat areas, to enhance biodiversity and improve connectivity across the Solar Development Sites.
 - 8) Post-construction reinstatement and long-term management to ensure landscape restoration and ecological benefits.
 - 9) At decommissioning, land will be reinstated to its original profile and condition as far as reasonably practicable.
- 7.7.9 The suite of management plans for the Proposed Development will also incorporate embedded and good practice measures, including those listed above, as well as any further mitigation that is identified throughout the EIA process. The management plans for construction are outlined within paragraph 5.2.18, for operation these are outlined within paragraph 5.3.10, and decommissioning in paragraph 5.4.7 of this NTS.
- 7.7.10 Outline versions of these management plans are submitted alongside the ES as part of this DCO Application to secure the commitments within each assessment. A Requirement is included in the Draft DCO [EN0110012/APP/LVS/03.01] to ensure detailed management plans will be prepared to full versions by the appointed Contractor(s), substantially in accordance with the outline management plans, and will be submitted for approval by NYC in advance of starting the relevant phase of works.

Assessment of effects

Landscape assessment of effects

Construction

- 7.7.11 During construction, there will be temporary changes to the landscape across several areas. This includes the introduction of construction activities, machinery and temporary compounds, as well as the removal of some hedgerows and short-term changes to field patterns.
- 7.7.12 These activities will reduce the openness and tranquillity of the landscape, particularly in areas close to the Solar Development Sites and Cable Route Corridor. The most affected areas are those with fewer existing landscape features to provide screening.
- 7.7.13 Overall, the construction phase will result in **moderate adverse effects** on the landscape in several character areas and at each of the Solar Development Sites. These effects are considered **significant**.

Operation and maintenance

- 7.7.14 At the start of operation (Year 1), the presence of solar panels, substations, and associated infrastructure will result in a noticeable change to the landscape character, especially in areas where the landscape is currently open and rural. The introduction of these structures will reduce the sense of openness and tranquillity until new planting matures and helps to integrate the Proposed Development into its surroundings.
- 7.7.15 All Solar Development Sites are expected to experience **moderate adverse effects** on landscape character at Year 1 of operation which are **significant**. These effects are expected to reduce over time as planting becomes established.
- 7.7.16 Maintenance and replacement activities, which would be carried out in the context of an operational solar farm, would be similar and no greater than the construction phase because effects would be controlled and managed through appropriate management plans.

Decommissioning

- 7.7.17 During decommissioning, the effects on the landscape are expected to be similar to or less than those experienced during construction. Activities such as the removal of infrastructure and minor excavation works will be temporary and localised, with most existing planting and new vegetation remaining in place to provide screening during the decommissioning works. There will be no major changes to landform, and the majority of landscape features will be retained. As a result, no significant effects on landscape character are anticipated during decommissioning, and the landscape will begin to return to its previous condition.

Visual assessment and effects

Construction

- 7.7.18 During construction, there will be significant visual impacts for some residents living near the Solar Development Sites, people using local PRowS and those travelling on nearby roads. Construction activities, including earthworks, machinery, temporary fencing and lighting, will be visible from homes, footpaths, bridleways and roads. This contributes to a temporary change to the rural character of the area.
- 7.7.19 These effects are considered to be up to **moderate adverse** and therefore **significant** for many of the closest receptors but are temporary and will reduce once construction is complete.

Operation and maintenance

- 7.7.20 In the first year of operation, the new solar panels, substations, and associated infrastructure will be prominent in views from nearby homes, PRowS, and local roads, especially before new planting has matured. The introduction of these built elements will noticeably alter the appearance of the landscape, resulting in **moderate adverse** visual effects for the same groups affected by construction, which is considered **significant**. As planting establishes and matures over time, these effects are expected to reduce.

Decommissioning

- 7.7.21 Visual effects during decommissioning are expected to be similar to or less than those experienced during construction, as the removal of infrastructure and restoration of land will gradually return views to their previous character.

Additional mitigation

- 7.7.22 For landscape and visual amenity, all mitigation measures are embedded or included in the oCEMP [EN0110012/APP/LVS/07.02]. Therefore, no additional mitigation measures are proposed within the technical chapter.

Residual effects

Construction and decommissioning

- 7.7.23 After applying all mitigation measures, the residual effects on landscape during construction and decommissioning remain the same as previously assessed above. These effects are temporary, reversible and mainly relate to localised changes in openness, tranquillity and the presence of construction activities.

Operation (Year 15)

- 7.7.24 By Year 15 of operation, most landscape and visual effects will have reduced due to the establishment of new planting and restoration of vegetation.

- 7.7.25 **Significant residual effects** remain at Solar Development Sites 2, 6 and 7, where the permanent presence of solar panels and infrastructure continues to noticeably alter the landscape character and reduce openness and tranquillity.
- 7.7.26 At other sites and across most Landscape Character Areas, effects are minor or negligible, with new planting helping to screen and integrate the Proposed Development, and the landscape largely restored.
- 7.7.27 For visual receptors, **significant residual effects** are limited to a small number of locations, mainly for residents close to Solar Development Site 2 and people using certain PRoWs near Solar Development Sites 1 and 4. The effects on the rest of the visual receptors are **not considered significant**. This is attributed to the existing vegetation and the establishment of planting carried out to reinstate vegetation removed to facilitate construction and to integrate the Proposed Development into the landscape.

7.8 Noise and Vibration

- 7.8.1 Environmental Statement Chapter 11: Noise and Vibration (ES Volume 1) **[EN0110012/APP/LVS/06.01.11]** has assessed the likely significant effects arising from noise and vibration from the construction, operation and maintenance and decommissioning of the Proposed Development.

Baseline and context

- 7.8.2 The Study Area for the noise and vibration assessment covers the land around the Proposed Development. For construction noise, impacts are considered within 300 m of the Order Limits, while construction vibration is assessed within 100 m, as effects are unlikely to be significant beyond these distances. For operational noise, a wider area of up to 1 km around the Solar Development Sites is considered, although sound levels are expected to be very low at this distance. Indirect impacts from construction traffic are assessed along affected roads, with a focus on locations where noise changes may be noticeable which is considered to be within 50 m of the construction traffic routes.
- 7.8.3 An environmental sound survey within and around the Solar Development Sites, to capture existing baseline conditions at the nearest noise sensitive receptors, has been undertaken to inform the existing baseline conditions. The specific measured sound levels for each location are presented within section 11.6 of Chapter 11: Noise and Vibration (ES Volume 1) **[EN0110012/APP/LVS/06.01.11]**.
- 7.8.4 The sound environment surrounding the Proposed Development is of a rural nature, with ambient sound levels dominated by road traffic from nearby roads.
- 7.8.5 The Noise Policy Statement for England (Ref 8) defines adverse and significant adverse effects which are used for determining noise effects below, as follows:
- 1) Lowest Observable Adverse Effect Level (LOAEL) – the level above which adverse effects on health and quality of life can be detected.

- 2) Significant Observed Adverse Effect Level (SOAEL) – the level above which significant adverse effects on health and quality of life occur.

Embedded mitigation

7.8.6 The Proposed Development includes a range of measures built into its design to minimise noise and vibration impacts on local communities and sensitive locations. These measures apply during construction, operation and maintenance, and decommissioning, and follow best practice and legal requirements.

- 1) Good practice measures will be in place to minimise noise and vibration, including careful planning and scheduling of works, use of quieter equipment and regular maintenance of machinery. Temporary noise barriers will be used to reduce noise levels where appropriate and practicable. Such measures are particularly appropriate for stationary, or near-stationary, construction plant with barriers located as close to the plant as possible, to provide adequate reduction in noise levels.
- 2) Construction activities will be managed to avoid excessive noise, with equipment switched off when not in use and noisy activities scheduled to minimise disturbance. Communication with local residents will ensure advance notice of any potentially disruptive works, and a clear point of contact will be provided for queries and complaints.
- 3) The site layout has been designed to keep key infrastructure, such as substations and BESS Compounds, as far as possible from homes and sensitive locations. Noise barriers and acoustic screens will be installed where needed, and quieter equipment will be selected and positioned to minimise noise.
- 4) Ongoing monitoring and management will ensure that operational noise remains within safe and acceptable limits, with mitigation measures such as silencers and acoustic enclosures fitted to key equipment.

Assessment of effects

Construction

7.8.7 During construction, activities such as installing solar panels, building electrical infrastructure, laying cables and constructing compounds will generate temporary noise and vibration. These effects have been carefully assessed, with good practice and embedded mitigation measures in place.

7.8.8 For **daytime construction noise**, this is predicted to remain below levels that would cause significant disturbance at nearby homes and sensitive locations. The highest noise levels are expected when works are close to receptors, but overall, impacts are considered **not significant**.

7.8.9 For **nighttime construction noise**, this is predicted to mainly come from HDD and may be noticeable for short periods at some locations, but it is expected to

not exceed thresholds for significant effects and is therefore **not significant**. The HDD Crossing Locations are visible in **Figure 3** in **Annex A** – Figures of this NTS.

- 7.8.10 For **construction vibration**, this is predicted to be below levels that would cause building damage or significant disturbance for most receptors. At a small number of locations, vibration may be perceptible, but will be managed through advance notice and careful operation, and is therefore considered **not significant**.
- 7.8.11 For **construction traffic noise**, this is expected to have **negligible or minor impacts** in most roads, with only one road (Common Lane, Hambleton) predicted to experience a **moderate adverse impact** due to increased heavy vehicle movements. However, this impact is temporary and considered **not significant**.

Operation and maintenance

- 7.8.12 During operation, noise from the Proposed Development will mainly come from stationary sources such as substations, BESS, and associated equipment. Detailed modelling within the assessment has shown:
- 1) For most nearby homes and sensitive locations, operational noise levels are predicted to remain below thresholds for significant impact, both during the day and at night.
 - 2) At a small number of locations, noise may be slightly above background levels, especially at night, but these levels are still below national and World Health Organization guidelines and therefore are considered **not significant**.
 - 3) Occasional maintenance activities, such as replacing batteries or solar panels, may cause short-term increases in noise, but these are expected to be infrequent, limited to day-time hours, and **not significant**.
 - 4) Noise from operational traffic and maintenance visits is expected to be **negligible** and therefore **not significant**.
 - 5) PRowWs near the Proposed Development may experience some audible noise, but levels are predicted to be low, and impacts are **not significant**.

Decommissioning

- 7.8.13 The works which take place during the decommissioning phase of the Proposed Development are expected to be similar in magnitude (or less extensive) than those required for construction. Therefore, the assessment presented for construction noise and vibration impacts is therefore representative of the decommissioning phase.

Additional mitigation

- 7.8.14 No additional mitigation measures beyond those presented within the embedded mitigation section have been identified.

Residual effects

- 7.8.15 With all embedded and good practice mitigation measures in place, no significant noise or vibration effects are expected during construction or operation. Construction impacts will be managed through strict controls and best practice, and operational noise will remain within safe limits for nearby homes and sensitive locations.

7.9 Ornithology

- 7.9.1 Environmental Statement Chapter 12: Ornithology (ES Volume 1) **[EN0110012/APP/LVS/06.01.11]** has assessed the likely significant effects arising from the construction, operation and maintenance and decommissioning of the Proposed Development on Ornithology.

Baseline and context

- 7.9.2 The ornithology Study Area covers the Solar Development Sites (1-4 and 6-8), the Cable Route Corridor, and a buffer around the Order Limits. It includes all features that could be affected by the Proposed Development, with distances based on industry guidance and consultation with Natural England and NYC. Key extents are: 20 km for international designated sites, 2 km for national sites, up to 300 m for non-breeding bird surveys, 50 m for breeding bird surveys and 200 m for breeding bird habitat assessments.
- 7.9.3 The Study Area covers a mix of farmland, grassland, watercourses and woodland, supporting a wide range of bird species. Several internationally and nationally important protected sites are nearby, including the Lower Derwent Valley and Humber Estuary (Special Protection Area / Ramsar site), which regularly support large numbers of wintering and breeding waterbirds such as lapwing, golden plover, teal, and wigeon.
- 7.9.4 Surveys have identified over 60 bird species of conservation concern in the area, including ground-nesting birds like skylark, lapwing, corn bunting, and yellow wagtail, as well as species such as barn owl and red kite. Some Solar Development Sites, especially Solar Development Sites 1, 4 and 8 are regularly used by significant numbers of these birds, particularly during winter and migration periods.
- 7.9.5 The area also provides breeding bird habitat for several farmland and wetland birds, with up to 47 territories recorded for species like skylark, lapwing, corn bunting and reed bunting. The Cable Route Corridor supports similar species, with features suitable for breeding barn owl, red kite, hobby, peregrine, and kingfisher.

Future baseline

- 7.9.6 Without the Proposed Development, bird populations and habitats are expected to remain broadly similar in the short term. However, ongoing intensive farming and climate change may gradually reduce the quality and availability of habitats,

especially for farmland and ground-nesting birds. Protected sites are likely to remain in good condition due to legal safeguards, but wider countryside bird populations may continue to face challenges from habitat loss, changes in land use, and climate impacts such as warmer winters and more extreme weather. These pressures could affect breeding success and the availability of food for some species. Overall, while some changes are possible over time, the assessment assumes that current conditions will largely continue into the future, but with some uncertainty for farmland and wetland birds.

Embedded mitigation

7.9.7 The Proposed Development has been designed with a range of embedded and good practice measures to protect and enhance habitats for birds throughout construction, operation and maintenance and decommissioning. These measures are secured through the management plans or are illustrated in the Outline Environmental Masterplan (OEM) [EN0110012/APP/LVS/06.02.12].

7.9.8 Key embedded mitigation measures include:

- 1) **Habitat Buffers:** at least 15 m buffer zones around ancient/veteran trees and woodland, 8 m from hedgerows, and 10 m from watercourses, to protect important bird habitats and reduce disturbance.
- 2) **Habitat Creation and Enhancement:**
 - a) creation and enhancement of 833 ha of grassland (65.7 ha within the Bird Mitigation Area)
 - b) creation of 32 km of hedgerows and reinforcement of 23.2 ha of existing hedgerows
 - c) 523 new trees planted
 - d) 8.5 ha of proposed native woodland belt and block planting
 - e) 6.6 ha of proposed enhancements to water courses
 - f) 4.6 ha of scrub planting
 - g) A series of proposed scrapes within the Bird Mitigation Area (up to 8 ha).
- 3) **Ecological Connectivity:** green corridors and sensitive grassland management beneath solar arrays to maintain foraging and movement routes for birds and other wildlife.
- 4) **Dedicated Bird Mitigation Area:** Approximately 61 ha in the southern part of Solar Development Site 1 will be managed as a multifunctional mitigation area, supporting both breeding and non-breeding birds. This area will include wetland features, species rich grassland, and measures to minimise disturbance, and will be made functional before construction begins.
- 5) **Construction Phase Measures:** protection of habitats with fencing, pollution prevention, sensitive lighting, appointment of an Ecological Clerk of Works, use of trenchless crossings for watercourses, and timing of works to avoid sensitive periods for birds where practicable.
- 6) **Operation and Maintenance Measures:** Activity on site will be low intensity, and will be undertaken in accordance with the oLEMP

[EN0110012/APP/LVS/07.05] and oOEMP [EN00110012/APP/LVS/07.03]. Operational maintenance activities will be infrequent and limited to replacement activities, routine maintenance, vegetation management and inspections, retention of buffer zones, continued habitat management, and measures to reduce disturbance such as sensitive lighting and management of public access.

- 7) **Decommissioning Measures:** removal of infrastructure will follow best practice, with planting established under the approved Landscape and Ecological Management Plan (LEMP) [EN0110012/APS/LVS/07.05] generally remaining in situ, except for grassland areas, which may be removed to enable potential reversion to agricultural use, and works timed to avoid sensitive periods for birds.

- 7.9.9 All mitigation measures will be secured and managed through detailed environmental management plans, with ongoing consultation with Natural England and other relevant bodies.

Assessment of effects

Construction and decommissioning

- 7.9.10 During construction and decommissioning, there may be temporary disturbance to non-breeding and breeding birds from noise, visual activity, and habitat changes. However, these effects are anticipated to be **minor** and **not significant**, as noise levels are predicted to remain below thresholds likely to cause disturbance, and embedded mitigations (such as buffer zones, sensitive timing of works, and a dedicated Bird Mitigation Area) will minimise impacts.
- 7.9.11 Measures will be implemented to mitigate for impacts to nesting and breeding birds. Where reasonably practicable, works would be undertaken outside the bird breeding season (taken to be April to August. inclusive).
- 7.9.12 For works within 250 m of the southern portion of the Solar Development Site 1, where it adjoins the Bird Mitigation Area, this will be limited to construction activities that do not give rise to noise levels equal to or above 50 dB during the non-breeding period. Construction works that are likely to generate noise levels above 50 dB will be undertaken during the breeding season only (specifically April–August) when qualifying species presence is considered low and not ornithologically meaningful.

Operational phase

- 7.9.13 Once operational, the Proposed Development will generate very low levels of noise and activity, with only occasional maintenance visits. During PV solar array replacement, the same principles set out during construction will apply, where practicable. The risk of disturbance to birds will be **negligible** and **not significant**. The Bird Mitigation Area and retained habitats will provide ongoing refuge and foraging opportunities for key species.

Designated Sites and non-breeding birds

- 7.9.14 The assessment considered potential effects on internationally important bird sites nearby (Lower Derwent Valley and Humber Estuary Special Protection Area /Ramsar site) and the land outside these sites that is used by key bird species (known as Functionally Linked Land (FLL)). Surveys found that some Solar Development Sites, especially Solar Development Sites 1, 4 and 8 are regularly used by important non-breeding birds such as lapwing, golden plover, greylag goose, and others. However, the Proposed Development is located outside the boundaries of these protected sites.

Land take and habitat change

- 7.9.15 The Proposed Development will result in the permanent loss of some arable land used by non-breeding and breeding birds, particularly Solar Development Sites 1, 4 and 8. Before mitigation, this is considered a **moderate adverse** effect at the local scale, which is **significant**, as these areas are regularly used by qualifying bird species. However, the creation and management of the Bird Mitigation Area (approximately 61 ha) and other habitat enhancements are expected to offset these losses and provide high quality habitat for displaced birds and supporting local bird populations. With these measures in place, the effect is assessed as **minor beneficial** which is **not significant**, representing a net ecological gain.
- 7.9.16 With the implementation of embedded mitigation and the dedicated Bird Mitigation Area, the Proposed Development is not expected to have significant adverse effects on ornithology. Temporary and localised impacts during construction will be minimised, and long-term habitat management will provide benefits for both breeding and non-breeding birds.

Additional mitigation

- 7.9.17 To address the residual effects associated with the loss of open arable habitat, the designated Bird Mitigation Area within Solar Development Site 1 will also be managed to deliver enhanced breeding and foraging conditions for ground-nesting farmland birds.

Residual effects

- 7.9.18 Although the proposed Bird Mitigation Area will not fully replace the total area of open arable land lost for ground-nesting birds like skylark, its high-quality and actively managed grassland is expected to provide equivalent to better habitat value. The Bird Mitigation Area will be managed with techniques such as light grazing, rotational cutting, no pesticide use and structural diversity, all of which are proven to support higher densities of breeding birds. This approach is supported by local conservation groups and aligns with regional conservation goals, including potential benefits for species like corncrake.
- 7.9.19 While the Bird Mitigation Area covers about half the area needed to fully replace all displaced skylark territories (based on national averages), the uplift in habitat

quality is expected to offset most of the losses. The area will also benefit other ground-nesting and farmland birds, such as lapwing, corn bunting, yellow wagtail, mallard, and meadow pipit, by providing suitable nesting and foraging conditions.

- 7.9.20 With these measures in place, the residual effects on breeding skylark, lapwing, and other ground-nesting birds are assessed as **minor adverse to neutral**, which is **not significant**, at the local scale, provided the management plan is successfully implemented and monitored.

7.10 Socioeconomics

- 7.10.1 Environmental Statement Chapter 13: Socioeconomics (ES Volume 1) **[EN0110012/APP/LVS/06.01.13]** presents the findings of the likely significant effects arising from the construction, operation and maintenance and decommissioning of the Proposed Development on socioeconomic receptors.

Baseline and context

- 7.10.2 The socioeconomic Study Area covers the NYC region, with a focus on the former Selby District and its surrounding wards. The assessment considers potential effects on employment, businesses, community facilities, PRoW, tourism and development land both within and around the Proposed Development. Wider impacts across North Yorkshire and the Humber, and nationally, are also taken into account to ensure a robust and comprehensive approach.
- 7.10.3 The area around the Proposed Development is largely rural, with a growing population and a strong local economy. Selby district has seen higher population growth than the regional and national average, and its workforce is concentrated in sectors such as manufacturing, construction and agriculture. Employment rates are high, unemployment is low, and residents generally have higher levels of qualifications than the regional average.
- 7.10.4 Most homes in the area are owner-occupied, with a smaller proportion of private rentals compared to the national average. The visitor economy is important locally, with a range of accommodation and tourism facilities, and the area attracts hundreds of thousands of visitors each year.
- 7.10.5 Community recreational facilities, as well as PRoW, are well used and form an important part of local life. Local businesses are clustered in towns and villages, with farms and rural enterprises spread throughout the area.
- 7.10.6 The socioeconomic baseline is expected to remain unchanged, except for the projected population increase, where it is expected to grow from 92,000 to 98,696 by 2030. The future baseline at the decommissioning stage will reflect the socioeconomic and land use conditions prevailing at that time, which may differ from those at the construction stage. While it is not possible to predict these changes with certainty, as it is over 60 years away, it is anticipated that the surrounding area will continue to evolve in line with regional development trends, including population growth and potential shifts in agricultural, recreational, or tourism-related land uses.

Embedded mitigation

- 7.10.7 The Proposed Development has been designed to minimise impacts on local communities, businesses, tourism and recreation throughout construction, operation and decommissioning.
- 7.10.8 Both the oPRoWMP **[EN0110012/APP/LVS/07.09]** and oSSCEP **[EN0110012/APP/LVS/07.13]** detail good practice measures and embedded mitigation relevant to all phases of the Proposed Development relating to the management of PRoW and promoting competition, innovation and skills within the local and regional areas of the Proposed Development.

Construction

- 7.10.9 Measures include careful planning of construction activities and worker accommodation to reduce pressure on local services, providing support for workers to find suitable accommodation, and designing site layouts with buffers from roads, PRoW, and tourism destinations. Construction compounds are suitably located to minimise visual and amenity impacts, and PRoW will be kept open where practicable, with clear signage and temporary diversions if needed.

Operation and maintenance

- 7.10.10 The layout includes buffers and landscaping to reduce visual impacts on nearby tourism and recreation facilities. New permissive paths will improve connectivity, and ongoing management plans will help ensure that impacts on local communities and businesses remain low. Peaks in activity, such as major maintenance or equipment replacement, will be managed using the same best practice measures as during construction.

Decommissioning

- 7.10.11 Similar mitigation measures will be applied during decommissioning as to those for construction, with impacts expected to be less than during construction due to a smaller workforce and reduced activity. Where practicable, Interconnecting Cables and Grid Connection Cables will be left in situ, or removed by opening the ground at regular intervals and pulling the cable through to the extraction point, avoiding the need to open-up the entire length of the cable route, thereby minimising disruption to agricultural users.

Assessment of effects

Employment

- 7.10.12 The construction phase is expected to create an average of 385 jobs over the 36-month construction period, with a daily peak of 770 workers for limited peak periods for the Solar Development Sites. For the Cable Route Corridor, average workers has been estimated at 60, with a daily peak of 120 for limited peak periods. with about half likely to be filled by local workers. After accounting for

indirect and induced effects of the construction activity including employment growth at suppliers construction workers spending money in the Study Area, the net effect is estimated at 520 jobs, of which 260 would be local. This is considered a **minor beneficial effect** for the local economy, but **not significant**. During operation, employment effects are minimal, with only slight peaks during replacement activities. Decommissioning is expected to have similar but slightly reduced effects compared to construction, also **not significant**.

Tourism accommodation

- 7.10.13 All tourism accommodation within 1 km of the Order Limits is expected to experience, at worst, **minor adverse effects**, which **are not significant**.

Community and recreational facilities

- 7.10.14 Most community and recreational facilities are expected to experience only indirect, not significant effects. However, two fisheries (Birkin Fishery and Gascoigne Wood Fishery) may experience **moderate adverse effects** during construction due to temporary disruption, which is considered **significant**.

Public Rights of Way

- 7.10.15 The local network of PRoWs and recreational routes are important to the local population for personal health and wellbeing, and for amenity.
- 7.10.16 Some PRoWs will require local management and/or temporary closures or diversions during construction, but these will be managed to minimise disruption. With mitigation, the effects on PRoWs are assessed as **minor adverse** and **not significant**.
- 7.10.17 The availability of alternative recreational routes and walking opportunities in the wider area has been considered, including those accessible from local residential areas. This ensures that, while some change in amenity is unavoidable, the overall provision of recreational opportunities remains robust within the local context.
- 7.10.18 The Proposed Development also features opportunities for a number of enhancements to the existing PRoW network with the provision of new permissive routes (for non-motorised users).

Local businesses

- 7.10.19 Most local businesses are expected to experience not significant effects. However, three businesses (Birkin Fisheries Tea Room, Fairfield Equine Facilitated Wellbeing and Gascoigne Wood Fishery) may experience **moderate adverse effects** during construction due to temporary disruption, which is considered **significant**.

Access to temporary accommodation

- 7.10.20 The demand for temporary accommodation from construction workers is expected to be absorbable within the local market, resulting in a **minor adverse** effect that is **not significant**.

Land allocation and development land

- 7.10.21 The Proposed Development is not expected to affect land allocations or the long-term availability of mineral resources. It is also not expected to affect development land that may interact with the Proposed Development's Order Limits, due to the Applicant's ongoing engagement with the developers of those other projects.

Additional mitigation

- 7.10.22 In addition to embedded measures, further mitigation will be implemented where necessary to reduce potential impacts during construction. To reduce disruption at the nearby Birkin Fishery and Gascoigne Wood Fishery, regular engagement will be maintained with the fishery operators to coordinate works around key events, noisy activities will be scheduled outside peak fishing times, and temporary acoustic and visual screening will be installed along the boundaries closest to the fisheries.
- 7.10.23 Additionally, measures for both Birkin Fisheries Tea Room and Fairfield Equine Facilitated Wellbeing include management of HGV movements to reduce impacts or avoid peak visitor times where practicable, and operators will be informed of any busy periods. Temporary screening from the Order Limits will be considered at Birkin Fisheries Tea Room to reduce visual disturbance. Potential noisy activities or visually disturbance will be managed accordingly at Fairfield Equine Facilitated Wellbeing.
- 7.10.24 There is a requirement in the oCEMP [EN0110012/APP/LVS/07.02] to further address these when producing the detailed CEMP.

Residual effects

- 7.10.25 During construction, the influx of temporary workers will provide a short-term, minor benefit to the local economy, with efforts made to maximise local recruitment and manage accommodation demand. Any increased demand for private rental housing is expected to be small and manageable as the workers will make up around 3.5% of the total rental market within the area of Selby. If required, this will be mitigated by investing in local recruitment and procurement and using a flexible construction schedule to reduce workforce peaks. The impact will therefore be minor adverse on the rental market, with embedded mitigation taken into account.

- 7.10.26 Temporary impacts on socioeconomic receptors, including impacts from noise, traffic and visual disturbance, will be minimised through mitigation measures, with overall effects expected to be **minor adverse** or **negligible**.
- 7.10.27 For PRoW and recreational routes, temporary impacts will be managed through careful planning, signage and diversions, but effects will remain as **minor adverse effects**.
- 7.10.28 During operation, the Proposed Development is not expected to have significant socioeconomic impacts, as economic activity and transport patterns will be similar to current conditions.
- 7.10.29 Decommissioning will have reduced and short-term impacts compared to construction, with similar mitigation measures in place to minimise disruption.

7.11 Traffic and movement

- 7.11.1 Environmental Statement Chapter 14: Traffic and Movement (ES Volume 1) **[EN0110012/APP/LVS/06.01.14]** presents the impact assessment and likely significant effects of the Proposed Development on traffic and movement.

Baseline and context

- 7.11.2 The Study Area for the traffic and movement assessment covers the traffic routes to the Solar Development Sites and the routes that may be used to access the Cable Route Corridor.
- 7.11.3 The surrounding Strategic Road Network (SRN) is comprised of the A1(M), the A63 and A64 in the west of the Study Area, the A19 in the east, the A64 to the north and the M62 to the south. Whilst the SRN is busy, the local highway network consists of mostly quiet rural roads. A full detailed assessment of the baseline traffic conditions and collision numbers on surrounding roads are provided within the detailed assessment of Chapter 14: Traffic and Movement (ES Volume 1) **[EN0110012/APP/LVS/06.01.14]**.
- 7.11.4 Pedestrian infrastructure including PRoWs and National Cycle Routes run through the Study Area.
- 7.11.5 A range of public transport options are available within the vicinity of the Proposed Development. Several bus routes serve the local villages and main roads near each Solar Development Site and Cable Route Corridor, with frequent services connecting larger towns and cities such as York, Selby, Leeds and Pontefract. Key bus stops are located within 1 to 1.5 km of most sites, providing regular access for local residents and workers.
- 7.11.6 Rail connections are also available nearby, with stations such as South Milford, Church Fenton, Sherburn-in-Elmet, Knottingley, and Selby offering hourly or more frequent services to major destinations including Leeds, York, Halifax and Hull. These facilities provide good public transport links for the area surrounding the Proposed Development.

- 7.11.7 Regarding the future baseline, there are currently no planned highway works in the Study Area beyond routine maintenance. However, it has been advised that design work was underway for improvements to the A63/ A162 Monk Fryston Roundabout to provide additional capacity. It is anticipated that these works will be completed by 2028, in time for the commencement of the start of construction of the Proposed Development.

Embedded mitigation

- 7.11.8 A range of measures have been built into the design of the Proposed Development to minimise impacts from construction traffic and vehicle movements. These include:
- 1) A Construction Traffic Management Plan, in substantial accordance with the oCTMP [EN0110012/APP/LVS/07.12] will be implemented to formalise and control construction vehicle routes, access points, and parking to ensure safe and efficient movements.
 - 2) Protection for local roads and communities including restricting heavy goods vehicles to agreed routes, providing passing places on narrow roads, and carrying out localised highway improvements where needed.
 - 3) Safety and cleanliness measures such as wheel washing, road sweeping, and dust suppression will be in place to keep local roads clean and minimise disturbance.
 - 4) Separation or protection for PRow will be provided where construction routes cross or run close to existing footpaths and bridleways.
 - 5) Clear communication will be maintained with local residents, including advance notice of works, contact details for a Community Liaison Manager, and on-site information boards.
 - 6) A range of management plans covering construction (see paragraph 5.2.18), operation (see paragraph 5.3.10), decommissioning (see paragraph 5.4.7) and traffic will be secured and approved by the local authority before each phase begins to ensure that all above commitments are met.

Assessment of effects

Construction

- 7.11.9 During the construction phase, the Proposed Development will generate additional traffic, including heavy goods vehicles (HGVs) and staff vehicles, across the Solar Development Sites and along the Cable Route Corridor. The assessment considered effects such as severance, driver delay, pedestrian and cyclist amenity, and fear and intimidation. The assessment and findings are summarised below:
- 1) **Traffic Volumes:** Construction will result in temporary increases in daily vehicle movements, with peak periods seeing up to 1,110 trips per day,

including up to 322 HGVs (this assumes worst-case scenario of works across all sites occurring concurrently). Shared transport for workers will be used where practicable to reduce the number of car trips.

- 2) **Traffic Routing:** Designated routes have been identified to minimise impacts on residential areas, and existing field accesses will be used where practicable. Construction vehicle movements will be scheduled to avoid peak hours on the local road network.
- 3) **Severance:** Most roads will see less than a 30% increase in traffic, with a few lightly trafficked roads experiencing higher percentage increases. However, due to low baseline flows and the temporary nature of impacts, severance impacts are considered **minor** and **not significant**.
- 4) **Driver Delay:** The only location identified as operating at capacity is the A63/A162 roundabout. Both the A63 and A162 are routes that provide access to a number of residential areas, and are classified as being of medium sensitivity to change. However, NYC is developing proposals to upgrade the junction to create additional highway capacity to accommodate existing traffic, and future traffic related to local developments. These improvements would increase the junction capacity and significantly reduce the likelihood of driver delay at the junction. Overall impacts are considered **minor** and **not significant**. If the proposed improvements are not in place prior to construction, the cumulative impact could be considered **medium to high adverse**, and **significant**. However, with mitigation measures detailed in the oCTMP [EN0110012/APP/LVS/07.12], the residual cumulative effects would be minor adverse, not significant.
- 5) **Pedestrian and Cyclist Amenity:** Some roads will see more than a 50% increase in HGVs, as a result of the low baseline flows on the roads, but most are of a low sensitivity to change. Impacts on pedestrian and cyclist amenity are considered **minor** and **not significant**.
- 6) **Fear and Intimidation:** The assessment found no step change in the level of fear and intimidation on any route, with all roads remaining within their baseline categories. Impacts are therefore considered **negligible** and not significant.
- 7) **Abnormal Loads:** Movements of abnormal loads will be coordinated with local authorities and scheduled during off-peak periods to minimise disruption.

7.11.10 Overall, the temporary increase in construction traffic is expected to result in minor or negligible impacts on the local road network, with **no significant adverse effects identified**.

Operation and maintenance

7.11.11 During the operation and maintenance phase of the Proposed Development, each Solar Development Site is expected to receive approximately five maintenance visits per month, typically by LGVs. For the grid connections within

the Cable Route Corridor, it is not anticipated there will be any impact on transport operations as occasional maintenance access is expected to occur only once or twice per year.

- 7.11.12 As the expected increase in traffic numbers during operation is due to be below the 10% variation outlined within national guidance, it is considered that no significant impacts are likely to occur and therefore **no significant effects**.
- 7.11.13 Alongside regular maintenance trips, it is expected that some infrastructure such as solar panels and batteries will require replacement during the 60-year life cycle. The detailed assessment within Chapter 14: Traffic and Movement (ES Volume 1) [EN0110012/APP/LVS/06.01.14] concludes that as the programme for battery and panel replacements will be less intensive and occur on a site-by-site basis compared to construction, the number of vehicle trips will be lower than during the construction phase. Therefore, as vehicle numbers are lower than construction, the associated environmental effects would also be less than those during construction. Relevant measures to manage replacement traffic will be carried out in accordance with the oOEMP [EN0110012/APP/LVS/07.03].
- 7.11.14 As replacement traffic is expected to be lower than construction traffic, this assessment has been based solely on the phase with the highest traffic volumes (the construction phase), and as such potential impacts for Operation and Maintenance are not quantified, given that the effects for construction have been considered to be not significant.

Decommissioning

- 7.11.15 Decommissioning of the Proposed Development is expected to give rise to a similar level of forecast trip generation to the construction phase, minus the traffic generated during the construction works of the Cable Route Corridor. Overall, however, there is expected to be less traffic generated as there will be no construction works associated with the Cable Route Corridor. As such, the construction assessment presented earlier provides a worst-case scenario for any potential effects during the decommissioning phase.
- 7.11.16 An oDEMP [EN0110012/APP/LVS/07.04] has been developed for the Proposed Development, with a commitment to develop and seek approval for a Decommissioning Traffic Management Plan (DTMP) included, prior to the commencement of the decommissioning phase of the Proposed Development.

Additional mitigation

- 7.11.17 No additional mitigation is required as the embedded mitigation is considered sufficient to reduce the impact of the project activity.

Residual effects

Construction

- 7.11.18 For the construction phase, **temporary low / negligible residual effects** are anticipated on severance, driver delay and pedestrian and cyclist amenity, which is considered **not significant**.

Operation and maintenance

- 7.11.19 An operational assessment of traffic and movement has been scoped out of the assessment, as outlined above.

Decommissioning

- 7.11.20 The assessment of traffic and movement during the decommissioning stage has been scoped out of the assessment, as outlined above.

7.12 Water Resources and Flood Risk

- 7.12.1 Environmental Statement Chapter 15: Water Resources and Flood Risk (ES Volume 1) [EN0110012/APP/LVS/06.01.15] presents the findings of the likely significant effects arising from the construction, operation and maintenance and decommissioning of the Proposed Development in respect of water resources and flood risk.

Baseline and context

- 7.12.2 The Study Area for this assessment is defined by the Order Limits plus a 1 km buffer, selected based on professional judgement of the potential impacts and pathways related to the Proposed Development. The Study Area ensures that all receptors that are potentially connected with the Proposed Development through water movement are included.
- 7.12.3 The Study Area is in a predominantly flat, arable landscape interspersed with villages and crossed by major roads. The area is drained by a network of rivers, dikes and land drains, including the River Aire, River Ouse, Selby Dam, and numerous smaller watercourses and drainage channels. Several ponds, with some used for fishing, are also present.

Surface water

- 7.12.4 The Study Area contains several main rivers and many ordinary watercourses, with some sites and cable routes crossing or running close to these features. The area is managed by Internal Drainage Boards, and surface water is an important consideration for both flood risk and water quality.

Groundwater

- 7.12.5 The underlying geology consists of mainly sandstones, mudstones, and limestones, with thick superficial deposits in many areas. The Sherwood Sandstone Group is a principal aquifer, providing significant groundwater resources, while other formations are less permeable. Groundwater levels are generally shallow and fluctuate seasonally.

Water quality and abstraction

- 7.12.6 The area falls within the Humber River Basin District, with several surface and groundwater bodies classified under the Water Environment Regulations (Ref 9). There are multiple licensed surface water and groundwater abstractions within and near the Order Limits, including for agriculture and private water supply. Parts of the area are designated as Nitrate Vulnerable Zones due to agricultural activity.

Flood risk

- 7.12.7 Flood risk in the area arises from rivers, surface water, groundwater, and in rare cases, reservoirs. Most of the land is at low to moderate risk of flooding, but some areas near rivers and drains are at higher risk, particularly during extreme events. Site-specific hydraulic modelling has been used to inform the flood risk assessment.

Environmental designations

- 7.12.8 Several water-dependent SINC's are located within 1 km of the Proposed Development, and the Cable Route Corridor passes close to nationally and internationally designated sites such as SSSIs and SACs. There is also one SINC within the Order Limits (Ouse Bank, Westfield, Riccall Ings).

Water protection zones

- 7.12.9 Parts of the Order Limits fall within Drinking Water Safeguard Zones and Source Protection Zones, which are areas designated to protect public and private water supplies from pollution.

Future baseline

- 7.12.10 In the coming decades, climate change is expected to bring hotter, drier summers and wetter winters to the area, with more frequent extreme weather events. This will likely result in greater variability in river flows and groundwater levels, with higher risks of both drought and flooding.
- 7.12.11 These changes mean that, even without the Proposed Development, the local water environment will face increased challenges from climate-driven shifts in rainfall, temperature, and flood risk. Any future developments in the area could further influence these baseline conditions.

Embedded mitigation

- 7.12.12 The Proposed Development has been carefully designed to minimise impacts on water resources and flood risk. Key embedded mitigation measures include:
- 1) **Avoiding sensitive areas:** infrastructure is set back from watercourses, with minimum offsets to protect rivers, ditches and riparian zones. Flood-sensitive infrastructure, such as BESS and substations, are located outside of high flood risk zones wherever practicable.
 - 2) **Flood resilience:** where infrastructure must be placed in areas at risk of flooding, it is designed to be flood-resistant and raised above predicted flood levels. Site layouts are informed by detailed flood modelling.
 - 3) **Sustainable drainage:** a drainage strategy using sustainable drainage systems (SuDS) will manage surface water runoff, maintaining greenfield runoff rates and reducing flood risk (refer to Appendix 15.4: Outline Drainage Strategy (ES Volume 3) [EN0110012/APP/LVS/06.03.15.04]).
 - 4) **Pollution prevention:** measures are in place to prevent pollution from construction and operation, including containment for firewater and chemicals, and careful management of runoff from battery storage areas.
 - 5) **Minimising ground disturbance:** construction methods such as trenchless techniques (e.g., HDD) are used for crossing major watercourses and sensitive sites, reducing the risk of pollution and habitat disturbance.
 - 6) **Protection of water supplies:** a 50 m buffer is maintained around all groundwater and surface water abstractions,
 - 7) **Restoration and monitoring:** temporary construction areas will be fully reinstated after use, and ongoing monitoring and management plans will be in place to ensure continued protection of water resources and flood risk throughout construction, operation and maintenance and decommissioning.
- 7.12.13 All of the above measures are secured via the suite of management plans, which will be approved by the local authority before each phase of the project begins.

Assessment of effects

Construction

- 7.12.14 During construction, the main risks to water resources and flood risk include disturbance to surface water and groundwater from earthworks, installation of infrastructure, and temporary compounds. Potential impacts include sediment release, accidental pollution, changes to drainage patterns and temporary increases in flood risk. However, with embedded mitigation and best practice measures in place, effects on water quality, quantity, and flood risk are assessed as **minor adverse to negligible** and **not significant** for all receptors, including rivers, groundwater and designated sites. Temporary impacts from culverting low-importance watercourses and land drains are also assessed as **not significant**.

Operation

- 7.12.15 During operation, risks are much lower due to reduced activity. The main risks related to accidental pollution from maintenance and changes to drainage patterns from permanent infrastructure. With ongoing mitigation and management, effects on water quality, quantity and flood risk remain **minor adverse to negligible** and **not significant**. Permanent infrastructure is designed to be flood-resilient, and drainage systems will be maintained to prevent increased flood risk.

Decommissioning

- 7.12.16 Decommissioning activities may temporarily disturb water resources and flood risk, similar to construction. Potential impacts include sediment release, pollution, and changes to drainage and groundwater. Most infrastructure will be removed, but cables within the Cable Route Corridor may be left in situ to minimise disturbance. With mitigation measures in place, effects during decommissioning are expected to be **minor adverse to negligible** and **not significant**.

Additional mitigation

- 7.12.17 As there are no significant effects identified within the technical assessment, no additional mitigation is required.

Residual effects

- 7.12.18 No significant effects have been identified through the assessment, after embedded mitigation has been taken into account. Therefore, no additional mitigation is required, and effects remain the same as those reported above.

7.13 Other Environmental Matters

- 7.13.1 Environmental Statement Chapter 16: Other Environmental Matters (ES Volume 1) [EN0110012/APP/LVS/06.01.16.01] presents the findings of the assessment concerning the potential impacts of the Proposed Development for 'Other Environmental Matters' during the construction, operation and maintenance, and decommissioning phases. The chapter addresses other environmental topics that do not require individual chapters on the basis that they have been scoped out of the ES. The findings of this chapter support the ES where applicable, and feed into the mitigation proposals for the Proposed Development and commitments made within various Outline Management Plans submitted in support of the DCO Application.

Air Quality – Construction Dust

- 7.13.2 The Air Quality Construction Dust assessment presents a summary of the findings of an assessment of the likely significant effects in relation to construction dust as a result of the Proposed Development

- 7.13.3 The assessment reviews the current air quality conditions, relevant legislation and planning policy, focusing on particulate matter (PM₁₀ and PM_{2.5}) in the area around the Proposed Development.

Baseline and context

- 7.13.4 Baseline air quality concentrations are well below national objectives for both PM₁₀ and PM_{2.5}.
- 7.13.5 There are between 10-100 highly sensitive human receptors within 20 m of the Order Limits, including residential properties in the surrounding rural areas.
- 7.13.6 Three highly sensitive ancient woodland ecological sites (Common Wood and two at Gilbertson's Wood) are located within 20 m of the Order Limits.
- 7.13.7 Four SINCS are within the Order Limits, but these are considered low sensitivity as these are of local designation.
- 7.13.8 Additional low sensitivity SINCS and FLL supporting important bird species are also present within or near the Order Limits.

Assessment of effects

- 7.13.9 Taking into consideration the dust emission magnitude and the sensitivity of the area, the assessment shows that the Proposed Development has been classified as high risk to dust soiling, low risk to human health and high risk to ecological impacts (at worst), prior to the implementation of mitigation measures. However, risks vary depending on the location and type of construction activity and it should be noted that the assessment considered the entire Proposed Development as a whole.

Residual effects

- 7.13.10 With appropriate best practice mitigation measures in place suitable for high-risk sites, dust-emitting activities can be greatly reduced or eliminated. Proposed mitigation measures include effective site management, dust monitoring measures, site maintenance, careful management of soils and cleaning of roads. These mitigation measures are set out within Appendix 16.1: Construction Dust Assessment (ES Volume 3) [EN0110012/APP/LVS/06.03.16.01], and secured via the oCEMP [EN0110012/APP/LVS/07.02].
- 7.13.11 With these measures in place, the effects on existing receptors are assessed to be **not significant** from the dust-generating activities onsite.

Arboriculture

- 7.13.12 The Arboriculture Impact Assessment provides an assessment of the impact of the proposal to construct the Proposed Development on trees, woodlands and hedges within and within influencing distance of the Order Limits and makes recommendations for mitigating any negative impacts.

Baseline and context

- 7.13.13 A detailed tree and hedge survey was carried out for the Solar Development Sites, Cable Route Corridor, Highways Improvements areas and Site 8 Access area. This identified over 1,685 individual trees, 257 groups of trees, 25 woodland blocks and 440 hedges within or within influencing distance of the Order Limits.
- 7.13.14 There are no Tree Preservation Orders or Conservation Areas present within the Solar Development Sites, except for one tree within influencing distance of the Order Limits which will be protected. One ancient woodland identified as present within influencing distance of Solar Development Site 1, and nine veteran / ancient trees present across Solar Development Sites and the Cable Route Corridor.
- 7.13.15 No trees with statutory protection, ancient or veteran trees will be removed to facilitate the Proposed Development.
- 7.13.16 Three hedgerows, identified in the ecology and arboricultural surveys, have been identified as 'Important' under the Hedgerow Regulations 1997 criteria (Ref 9).

Assessment of effects

- 7.13.17 To allow for construction, it may be necessary to remove up to 54 individual trees, 11 entire tree groups, and 19 entire hedges (totalling about 1,501 m length), small parts of one tree group (c. 6 trees) and one woodland group (2-3 trees) and parts of 55 hedges, with a combined total length of approximately 1715.5m in the worst-case scenario. Most of these are of moderate or low quality, and none are classified as high quality or ancient/veteran trees or trees in ancient woodland.
- 7.13.18 Three hedges, and short lengths of two hedges will be removed for ornithology enhancement and path creation adjacent to the Solar Development Site.
- 7.13.19 All other trees, tree groups, woodlands and hedges will be kept and protected during construction, operation, and decommissioning. Special measures will be taken to avoid damage to trees close to construction areas, including no-dig construction methods and supervision by qualified arboriculturists.
- 7.13.20 Some trees may need minor pruning to allow access for construction vehicles, but no trees with statutory protection or ancient/veteran trees will be removed.

Residual effects

- 7.13.21 With careful planning and the use of protection measures, the vast majority of trees and hedges will be retained and safeguarded throughout the lifetime of the Proposed Development.
- 7.13.22 Any trees or hedges lost will be replaced with extensive new planting of native woodland blocks, belts and hedges across all Solar Development Sites. This will help to maintain and enhance tree cover and wildlife habitats.
- 7.13.23 Existing hedges will also be improved by filling gaps, increasing their width, and planting additional hedge trees.

- 7.13.24 Trees and hedges lost to cable installation will be replanted where appropriate in the Cable Route Corridor, subject to further detailed design works (set out in the detailed CEMP).
- 7.13.25 Overall, with these measures in place, the long-term residual effects on trees and hedges are expected to be minimal, and the project will result in a net gain in canopy cover and habitat provision.

BESS Fire Emissions

- 7.13.26 The assessment considers the potential air quality impacts in the rare event of a fire involving the Battery Energy Storage System (BESS). The modelling focused on possible emissions and their effects on human health and the surrounding area.

Assessment of effects

- 7.13.27 Substances likely from a BESS fire were modelled using an air quality dispersion model to determine the likely effects on human health. This included concentrations of carbon monoxide, formaldehyde, hydrogen chloride, hydrogen cyanide, hydrogen fluoride, ammonia nitrogen dioxide and particulates.
- 7.13.28 A high-level visibility assessment was undertaken using the modelled particulates to determine the effect of BESS fire emissions on visibility on the local road network.
- 7.13.29 Predicted concentrations were assessed against Acute Exposure Guidance Levels (AEGLs), which have higher threshold concentrations than the national air quality objectives and are relevant to short-term releases. The occurrence of adverse health effects is not likely to occur to the general public at concentrations below the AEGLs.
- 7.13.30 Based on the distance to the nearest locations of potential human exposure and the anticipated short-term nature of a fire incident, the assessment concluded that there would be no significant air quality effects as a result of a BESS fire incident.
- 7.13.31 In addition, the lowest visibility predicted on local roads occurs at the A63 (24 m south of the BESS compound). In the unlikely event of a BESS fire, smoke could reduce visibility distance to 146.1 m at this location, which is twice the vehicle stopping distance required for a vehicle travelling at 60 mph to stop safely. These predictions assume a fire occurring at the closest BESS enclosure to the road coinciding with the worst possible weather conditions for dispersing smoke at that road location.
- 7.13.32 In the event of a BESS fire, it is unlikely to result in closure of the A63.

Residual effects

- 7.13.33 The oBSMP [EN0110012/APP/LVS/07.06] identifies how the Applicant will use industry good practice to reduce risk to life, property and the environment in the

rare event of a BESS fire. In addition, the Emergency Response Plan produced at the detailed design stage will incorporate all necessary emergency response procedures and actions based upon data supplied by the BESS system provider.

- 7.13.34 A weather station will be installed within the BESS area to establish wind directions immediately if a BESS fire occurs.
- 7.13.35 With these measures in place, residual effects are expected to be minimal, ensuring safe construction and operation of the Proposed Development.

Electromagnetic Field (EMF)

Baseline and context

- 7.13.36 The Proposed Development will include underground power cables, conversion units, substations, and a BESS. All electrical equipment, including that found in the home, emits electric and magnetic fields, which can potentially affect human health.
- 7.13.37 Underground cables generally produce much lower electric and magnetic radiation above ground than overhead powerlines, as emissions from adjacent conductors tend to cancel each other out. However, they can produce magnetic fields, which depend on the current in the cables.

Assessment of effects

- 7.13.38 The assessment considered a worst-case scenario for EMF emissions, taking into account the maximum voltages and locations for all underground cables and equipment. The assessment uses guidelines produced by International Commission on the Non-Ionizing Radiation Protection (ICNIRP)Ref 6). These guidelines identify exposure limits and reference levels for electric and magnetic fields. Where the field levels exceed these reference levels, further investigation is required.
- 7.13.39 For the proposed 275 kV underground cables, the maximum predicted magnetic field is well below the public exposure limit. The closest dwellings are at least 50 m away, therefore the exposure will be significantly below the reference level identified in the ICNIRP guidelines Ref 6).
- 7.13.40 It is acknowledged there are existing 400 kV overhead powerlines operating within the Order Limits, there will be a cumulative impact where the Proposed Development cables cross beneath them. The ICNIRP guidelines (Ref 6) for public exposure limits recommend a minimum clearance distance of 15 m, which is a distance the nearest residential receptor achieves. With the exception of the point where the Cable Route Corridor crosses under the existing overhead lines, it is typically located over 500 m from the existing overhead lines at its nearest point and will therefore have no significant cumulative impact with the overhead powerlines.
- 7.13.41 The proposed substations and BESS are located over 350 m from the nearest dwellings and workplaces, ensuring compliance with exposure guidelines. For

users of PRowWs, any EMF effects would be minimal and not significant due to their transient presence.

Residual effects

- 7.13.42 Electric field levels from overhead powerlines will be above the reference level directly beneath the lines, but the recommended clearance distance and actual separation from dwellings ensure exposure remains well within safe limits.
- 7.13.43 Conversion units, substations, and BESS will be housed in protective enclosures and located far from residential properties, further reducing any potential EMF exposure.
- 7.13.44 For people using PRowWs, any EMF effects will be minimal and not significant, as exposure is brief and intermittent.
- 7.13.45 Overall, with these design measures and separation distances in place, the residual effects of EMF from the Proposed Development are expected to be minimal and well within recognised safety guidelines.

Ground conditions

- 7.13.46 The Appendix 16.3: Ground Conditions Preliminary Risk Assessment (ES Volume 3) [EN0110012/APP/LVS/06.03.16.03] reviewed ground conditions across the Solar Development Sites and Cable Route Corridor for the Proposed Development, considering geology, groundwater, land use, contamination risks and mining history.

Baseline and context

- 7.13.47 The Solar Development Sites and Cable Route Corridor are underlain by variable Superficial Deposits (sand, clay and silt) and bedrock.
- 7.13.48 Groundwater is present within the bedrock and surface watercourses (including the River Ouse, multiple streams and land drains) cross the Order Limits.
- 7.13.49 The area is mainly agricultural, with some localised potentially contaminated ground from farming infrastructure and possible infilled pits or quarries. No significant industrial land uses, landfills, or petrol stations are present.
- 7.13.50 The Cable Route Corridor crosses a groundwater source protection zone for public supply that is of low sensitivity, but more sensitive source protection zones are absent.
- 7.13.51 The Order Limits is within a coal mining reporting area, with deep underground mine workings but no high-risk development areas, mine entries, or shallow mine workings.

Assessment of effects

- 7.13.52 The risk of ground subsidence, as a result of historical mines, is considered very low.

- 7.13.53 The risk from contaminated land to human health or controlled waters is typically very low to low for the Solar Development Sites and moderate / low for the Cable Route Corridor, due to possible localised contamination.
- 7.13.54 No significant sources of contamination have been identified, but unforeseen ground conditions or contamination may be encountered during construction.

Residual effects

- 7.13.55 Ground investigations will be carried out post-consent, prior to construction, to confirm the conceptual site model, assess geotechnical properties, and validate contamination risks.
- 7.13.56 Soil sampling and analysis will support detailed design and construction methodology, especially at key crossings.
- 7.13.57 Potential sources of contamination and sensitive receptors along the Cable Route Corridor will be avoided where practicable.
- 7.13.58 Appropriate mitigation measures, including a discovery strategy for managing unexpected contamination for the Cable Route Corridors, will be adopted as set out in the oCEMP [EN0110012/APP/LVS/07.02].
- 7.13.59 With these measures in place, residual effects are expected to be minimal, ensuring safe construction and operation of the Proposed Development.

Glint and Glare

- 7.13.60 'Glint' is defined as a momentary flash of bright light typically received by moving receptors or from moving reflectors, while 'Glare' is defined as a continuous source of bright light typically received by static receptors or from large reflective surfaces.
- 7.13.61 The Glint and Glare assessment considers the potential impacts from both fixed south-facing solar panels and single-axis panels on various receptors, including aviation, roads, dwellings, railways, waterways and PRow.
- 7.13.62 Appendix 16.3: Glint and Glare Assessment (ES Volume 3) [EN0110012/APP/LVS/06.03.16.04] reviewed the possible effects of Glint and Glare as a result of the Proposed Development. This is accompanied by an empirical study on glint and glare from solar PV installations near UK aerodromes.

Baseline and context

- 7.13.63 A 1 km Study Area from the Solar Development Sites is considered appropriate for glint and glare effects on ground-based receptors (dwellings, roads, railways, waterways and PRow) and 10 km for airfields (to account for aviation receptors). Receptors within this distance are identified based on mapping and aerial photography of the region.

Assessment of effects

- 7.13.64 The Glint and Glare Study, through its modelling, predicted potential significant impacts from both fixed and south-facing panels towards aviation activity on two airfields in the Study Area (Sherburn-In-Elmet and Burn), and recommended mitigation measures to be undertaken. However, the empirical study indicates that such impacts do not occur in the real world. On this basis, no significant effects are assessed to arise to airfield users from the Proposed Development, and specific mitigation measures for those airfields are not required. However, a communications protocol will be developed between the Proposed Development and airfields in relation to glint and glare issues. This is secured in the oOEMP [EN0110012/APP/LVS/07.03].
- 7.13.65 Significant solar reflections were assessed as possible from inside a train driver's primary field-of-view for some locations, and temporary significant impacts were predicted on a number of roads and residential properties without advanced planting in place. With additional mitigation in place, (advanced planting), it is assessed that any significant glint and glare issues would be mitigated and not significant.
- 7.13.66 No mitigation is proposed for waterways or users of the PRoW as no significant effects were identified. Where glare is possible for all other receptors, existing or proposed vegetation (in the form of advanced planting) will provide screening to reduce adverse effects on these receptors.

Residual effects

- 7.13.67 With existing and proposed advanced planting in certain locations, adverse effects to road and railway users, and residential properties would be addressed and no significant residual effects remain.

7.14 Cumulative and In-Combination Effects

- 7.14.1 Environmental Statement Chapter 17: Cumulative and In-Combination Effects (ES Volume 1) [EN0110012/APP/LVS/06.01.17] presents the findings of an assessment of the potential for cumulative and in-combination effects to arise from the construction, operation and maintenance and decommissioning of the Proposed Development.

Methodology

- 7.14.2 For this assessment, two types of effect are considered:
- 1) **In-Combination Effects:** the combined effect of individual impacts from the Proposed Development, which have been identified as part of the assessment reported within ES Chapter 5 to 16 (ES Volume 1) [EN0110012/APP/LVS/06.01] that are considered likely to result in a new or different likely significant impacts on their own. For example, this can occur during construction if a given receptor is likely to be subjected to a

combination of effects such as noise, dust, and visual impacts associated with the Proposed Development.

- 2) **Cumulative Effects:** where there is the potential for two or more developments that are reasonably foreseeable and/or consented, but not yet forming part of the baseline environment, within close enough proximity to the Proposed Development to lead to significant cumulative effects on the same receptor. ES Chapter 5 to 16 (ES Volume 1)
[EN0110012/APP/LVS/06.01] assess where there are cumulative effects within their technical chapter.

- 7.14.3 The list of cumulative developments is set out in Appendix 17.1: Long List of In-Combination Effects and Cumulative Developments (ES Volume 3) **[EN0110012/APP/LVS/06.03.17.01]**. These developments were screened to assess their potential interaction with the Proposed Development, and a short list of cumulative developments was produced to inform the cumulative effects assessment. The short list of developments are outlined in table 17-10 of ES Chapter 17: Cumulative and In-Combination Effects (ES Volume 1) **[EN0110012/APP/LVS/06.01.17]**.

Assessment of In-Combination effects

- 7.14.4 In-combination effects are the combined effect of individual impacts from the Proposed Development that are likely to result in a new or different likely significant effect, or an effect of greater significance, than any one of the impacts on their own. The assessment draws on the assessments of impacts provided in Chapters 5 to 16 (ES Volume 1) **[EN0110012/APP/LVS/06.01]**.
- 7.14.5 Tables 17-8 and 17-9 in Chapter 17: Cumulative and In-Combination Effects (ES Volume 1) **[EN0110012/APP/LVS/06.01.17]** summarise the potential effect interactions for both construction and operation. No significant effect interactions are anticipated as a result of the construction, operation and maintenance and decommissioning of the Proposed Development.

Assessment of Cumulative effects

- 7.14.6 The assessment of cumulative effects arising from the Proposed Development in combination with other proposed developments (inter-project effects) is based upon a review of current submitted planning applications, as well as a study of planning policy documents.
- 7.14.7 An assessment of the cumulative effects of the Proposed Development along with the shortlisted cumulative developments have been assessed in each technical chapter (as relevant) (Chapter 5 to 16 (ES Volume 1) **[EN0110012/APP/LVS/06.01]**) and summarised in Chapter 17: Cumulative and In-Combination Effects (ES Volume 1) **[EN0110012/APP/LVS/06.01.17]**.
- 7.14.8 Within the majority of technical chapters, no likely significant effects have been identified through the cumulative effects assessment where they were not already predicted for the Proposed Development in isolation.

- 7.14.9 Chapter 5: Agricultural Land and Soils (ES Volume 1) **[EN0110012/APP/LVS/06.01.05]** has identified a cumulative effect due to the temporary loss of 2.6% of the Best and Most Versatile agricultural land available in Selby as a result of all cumulative developments in the area which would be **locally significant**, and 0.2% of the Best and Most Versatile agricultural land in the Yorkshire and Humber region, which would be **not significant** at that scale..
- 7.14.10 Chapter 10: Landscape and Visual (ES Volume 1) **[EN0110012/APP/LVS/06.01.10]** has identified 11 schemes which have the potential to result in cumulative effects with the Proposed Development. Additional adverse effects include impacts upon landscape character due to the cumulative number of developments as well as visual impacts due to the size and geographical extent of other developments. These impacts are outlined in table 10-28 and 10-29 within Chapter 10: Landscape and Visual (ES Volume 1) **[EN0110012/APP/LVS/06.01.10]**. **Significant** cumulative effects are assessed for two landscape character areas during construction, but these reduce down to **not significant** during operation. **Significant** cumulative visual effects are assessed for seven viewpoints during construction, with all but one of these reducing down to **not significant** at operation. The only remaining **significant** cumulative effect is for Viewpoint 20 which represents users of a Public Right of Way near Sites 3 and 4.

Annex A Figures of the NTS

References

- Ref 1 UK Government, “Planning Act 2008,” 2008. [Online]. Available at: <https://www.legislation.gov.uk/ukpga/2008/29/contents> [Accessed 01 January 2026]
- Ref 2 Ministry of Housing, Communities and Local Government (MCHLG) , “Planning Act 2008: Pre-application stage for Nationally Significant Infrastructure Projects”, 2024. [Online]. Available at: <https://www.gov.uk/guidance/planning-act-2008-pre-application-stage-for-nationally-significant-infrastructure-projects>. [Accessed 01 January 2026]
- Ref 3 UK Statutory Instruments, “The Infrastructure Planning (Environmental Impact Assessment) Regulations,” 2017. [Online]. Available at: <https://www.legislation.gov.uk/uksi/2017/572/regulation/14>. [Accessed 01 January 2026]
- Ref 4 Department for Energy Security and Net Zero, “Clean Power 2030 Action Plan”, 2024. [Online]. Available at: <https://www.gov.uk/government/publications/clean-power-2030-action-plan> [Accessed 01 January 2026]
- Ref 5 Department for Environment, Food & Rural Affairs, “Agricultural land use in England at 1 June 2024”, 2024. [Online]. Available at: <https://www.gov.uk/government/statistics/agricultural-land-use-in-england/agricultural-land-use-in-england-at-1-june-2024> [Accessed 01 January 2026]
- Ref 6 International Commission on Non-Ionizing Radiation Protection (ICNIRP). [Online]. Available at: <https://www.icnirp.org/> [Accessed 01 January 2026]
- Ref 7 Met Office Hadley Centre, “HadUK-Grid gridded and regional average climate observations for the UK,” 2018. [Online]. Available at: <https://catalogue.ceda.ac.uk/uuid/4dc8450d889a491ebb20e724debe2dfb/> [Accessed 01 January 2026]
- Ref 8 Government of the United Kingdom of Great Britain and Northern Ireland, “Noise policy statement for England,” 2010. [Online]. Available at: <https://www.gov.uk/government/publications/noise-policy-statement-for-england>. [Accessed 01 January 2026]
- Ref 9 UK Government, “The Hedgerow Regulations,” 1997. [Online]. Available at: <https://www.legislation.gov.uk/uksi/1997/1160/contents/made>. [Accessed 09 December 2025]
- Ref 10 UK Statutory Instruments, “The Water Environment (Water Framework Directive) (England and Wales) Regulations,” 2017. [Online]. Available at: <https://www.legislation.gov.uk/uksi/2017/407/contents/made> [Accessed 09 December 2025]



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