Fosse Green Energy

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EN010154

6.4 Environmental Statement

Non-Technical Summary

VOLUME

6

Planning Act 2008 (as amended)

Regulation 5(2)(a)

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

18 July 2025

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulation 2009 (as amended)

Fosse Green Energy

Development Consent Order 202[ ]

6.4 Environmental Statement

Non-Technical Summary

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Rev 1	18 July 2025	DCO Submission
Rev 2	02 September 2025	Procedural Decision

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1. Introduction

1.1 Overview

1.1.1 This document has been prepared on behalf of Fosse Green Energy Limited (hereafter referred to as 'the Applicant') and is a Non-Technical Summary of the Environmental Statement (ES) for the proposed Fosse Green Energy project (hereafter referred to as 'the Proposed Development'). The Proposed Development is located within the North Kesteven District, in Lincolnshire, approximately 9 kilometres (km) to the south and south west of Lincoln City Centre, in proximity to the villages of Thorpe on the Hill, Witham St Hughs, Haddington, Thurlby , and Bassingham, with the Cable Corridor extending towards Navenby.

1.1.2 The Proposed Development will involve the construction, operation (including maintenance) and eventual decommissioning of ground mounted solar photovoltaic (PV) panels, along with associated infrastructure such as Battery Energy Storage System (BESS) and an Onsite Substation across 1,070ha of land within the 'Principal Site', as well as an underground cable of approximately 10km in length, connecting the Proposed Development to the national electricity transmission network at the proposed new substation near Navenby (a separate project promoted by National Grid which does not form part of the Proposed Development). The total area of the Proposed Development comprising the Principal Site and the Cable Corridor (referred to as the 'DCO Site') is approximately 1,368ha and is shown in **Figure 1**.

1.1.3 The objective of the Proposed Development is to maximise renewable energy generation and deliver a scheme that is designed sensitively with reference to the environment and the landscape it is situated within. The Proposed Development includes land for ecological mitigation and enhancement.

1.1.4 The Proposed Development is a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008 (Ref 1), as it will have the capacity to generate, store, and export more than 50 megawatts (MW) of electricity. Under the Planning Act 2008, a type of planning consent called a Development Consent Order (DCO) is required.

1.1.5 The Environmental Statement (ES) considers comments received during the non-statutory and statutory consultation and details the outcome of further environmental assessment work conducted since the disclosure of the Preliminary Environmental Information (PEI) Report during statutory consultation. The ES forms part of the Applicant's DCO application which is submitted to the Planning Inspectorate for examination. Following an examination by the Planning Inspectorate, the DCO application will be decided by the Secretary of State for Energy Security and Net Zero.

1.2 The Applicant

1.2.1 The Applicant, Fosse Green Energy Limited, is a partnership between Windel Energy Limited and Recurrent Energy.

1.2.2 Windel Energy Limited, founded in 2018, is a privately held company that specialises in the development and asset management of renewable energy projects and low carbon technologies with live projects ranging from 10MW to 440MW output across England and Wales. Windel Energy Limited work closely with landowners, giving them the opportunity to diversify their income stream by leasing their land for renewable energy developments.

1.2.3 Recurrent Energy, a subsidiary of Canadian Solar Inc., is one of the world's largest and most geographically diversified utility-scale solar and energy storage project development, ownership, and operations platforms. With an industry-leading team of in-house energy experts, Recurrent Energy serves as Canadian Solar’s global development and power services business.

1.2.4 To date, Recurrent Energy has successfully developed, built, and connected 11 GWp of solar projects and more than 3 GWh of energy storage projects across six continents. As of March 2025, its global pipeline includes over 26.5 GWp of solar and 69 GWh of energy storage capacity.

1.3 What is an Environmental Impact Assessment?

1.3.1 Environmental Impact Assessment (EIA) is a process to ensure that planning decisions are made with full knowledge of the likely significant environmental effects of a proposed development. The outcome of the EIA process is reported within the Environmental Statement (ES) which is submitted with the DCO application. The ES is based on consultation and further environmental information and assessments. The EIA for the Proposed Development is undertaken in compliance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref 2) (EIA Regulations).

1.3.2 The objective of the EIA is to identify any likely significant effects which may arise from a proposed development and to identify measures to prevent, reduce, or offset any adverse effects and to deliver any beneficial effects or enhancements. During the EIA process for the Proposed Development, opportunities and management measures have been identified and incorporated within the development proposals to prevent or reduce any adverse environmental effects, and to enable sustainable design and construction principles to be embedded and form part of the Proposed Development.

2. EIA Process and Methodology

2.1 Overview

2.1.1 **Chapter 5: EIA Methodology** of the ES **[EN010154/APP/6.1]** describes the approach the EIA has taken to assessing impacts associated with the Proposed Development, including the significance criteria against which impacts have been assessed.

2.2 EIA Scoping

2.2.1 The purpose of the EIA Scoping process is to identify expected 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, including identifying which topics should be included in the EIA and the level of detail to which they should be assessed.

2.2.2 An EIA Scoping Report and a request for an EIA Scoping Opinion under Regulation 10 of the EIA Regulations was submitted to the Planning Inspectorate on 19 June 2023 (**Appendix 1-A: EIA Scoping Report [EN010154/APP/6.3]**).

2.2.3 The Scoping Opinion was received on 25 July 2023, which presents the formal response from the Planning Inspectorate (on behalf of the Secretary of State) and statutory consultees (**Appendix 1-B: EIA Scoping Opinion [EN010154/APP/6.3]**).

2.2.4 Key issues raised in the Scoping Opinion are summarised in Section 3 of the technical ES chapters (**Chapters 6 to 15 [EN010154/APP/6.1]**) and have been considered during the EIA process.

2.3 Consultation

2.3.1 The main consultation activities undertaken so far include:

a. EIA Scoping;

b. Non-statutory (informal) consultation;

c. Statutory (formal) consultation;

d. On-going consultation with a range of consultees and stakeholders.

2.3.2 In addition, a project website has been set up to provide information on the Proposed Development: https://fossegreenenergy.co.uk/ and communication channels (email, Freepost, and phone line) have been open for stakeholders to enquire about the Proposed Development.

3. Description of the Proposed Development

3.1 The Site and Surroundings

3.1.1 The DCO Site lies within the county of Lincolnshire, within the district of North Kesteven. It is located approximately 9km south and south west of Lincoln City Centre in a predominantly agricultural landscape.

3.1.2 The Principal Site, intersected by the A46, is surrounded by the villages of Morton, Witham St Hughs, Bassingham, Thurlby, and Thorpe on the Hill amongst others. The Cable Corridor passes in the vicinity of the villages of Bassingham, Boothby Graffoe, and Coleby, terminating east of Navenby where a new substation is proposed to be constructed by National Grid.

3.1.3 The DCO Site consists primarily of agricultural fields interspersed with individual trees, woodland blocks, hedgerows, linear tree belts, farm access tracks, and local transport roads. The nature of the landscape is largely flat with open views.

3.2 Description of the Proposed Development and Design Parameters

3.2.1 The Proposed Development comprises solar PV panels and associated infrastructure including Solar Station Compounds, BESS, the Onsite Substation, and a cable connection to the national electricity transmission network. The Solar PV Panels will convert the sun's energy into electricity for export to the national electricity transmission network via cables.

3.2.2 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.

3.2.3 Instead, the Proposed Development will seek a DCO that would control the aspects of the solar farm which cause potential environmental impacts – such as use of land for compounds, construction traffic, dust generation and water generation. These are known as the 'design parameters'. This approach also ensures the Proposed Development will be able to generate electricity and minimise impacts as far as practicable, using technology which is constantly improving and may allow greater amounts of electricity to be generated in the future, within the existing design parameters. Wherever an element of flexibility is maintained, the likely worst-case impacts are reported in the ES. Further information about the design parameters is presented in the sections below, in **Chapter 3: The Proposed Development** of this ES

[EN010154/APP/6.1], and in the **Proposed Development Parameters [EN010154/APP/7.4].** The configuration of the Proposed Development components will be determined based upon environmental and technical factors.

3.2.4 The configuration of the Proposed Development components will be determined based upon environmental and technical factors The Proposed Development components comprise:

a. **Solar PV panels (also known as 'modules')** – These will be at a maximum height of 3.5m and will have a minimum clearance above ground level (AGL) of 0.8m. The Proposed Development currently considers the following PV panel configurations (as illustrated in **Figure 2A** and **Figure 2B)**:

   i. Fixed south facing configuration, where the PV tables would be aligned east to west with the panels sloping towards the south at a fixed angle of 5 to 45 degrees from horizontal (**Plate 1**). ;

   ii. Single axis tracker configuration, where the PV tables are configured in rows generally orientated north-south and which will tilt east to west following the movement of the sun throughout the day;

b. **Battery Energy Storage System (BESS)** – This will allow the storage of energy generated by the PV panels or imported from the grid. The precise number of individual battery storage containers will depend upon the duration of energy storage; however, it is expected that there would be approximately 480 megawatt hours (MWh) of BESS capacity which equates to approximately 328 batteries either distributed throughout the Principal Site (referred to as 'distributed BESS' arrangement) and located with up to four BESS containers alongside the Solar Stations (described below), or located at a single BESS Compound (referred to as 'centralised BESS' arrangement);

c. **Solar Station Compounds** – These are required to process the energy generation and comprise:

   i. **Inverters** – These convert the direct current (DC) current used by the PV panels and batteries to alternating current (AC) current, which is the format used by the national electricity network. The Proposed Development will require either smaller (string) inverters, an example is shown on **Plate 2**, or fewer but larger central inverters (approximately 170);

   ii. **Transformers** – These step up the voltage of the electricity generated before it reaches the Onsite Substation. It is anticipated that there will be approximately 84 transformers (shown on **Plate 3**);

   iii. **Switchgear** – These are the combination of electrical disconnector switches, fuses or circuit breakers used to control, protect and isolate electrical equipment. It is anticipated that approximately 300 switchgears could be located within the Principal Site;

d. **An Onsite Substation and control buildings** – A new Onsite Substation will be located within the Principal Site which will include transformers, switchgear and metering equipment required to facilitate the export of electricity to the National Grid;

e. **Onsite cabling** – Low voltage cabling will connect each solar PV panel and will be located above ground level, tied to the back of the panels. Medium voltage distribution cables (around 33kV) will be routed underground in trenches via the interconnecting corridors to the Onsite Substation;

f. **Grid Connection Cable** – This high-voltage (400kV) cable will connect the Onsite Substation to the National Electricity Transmission System at the proposed National Grid substation near Navenby. The Cable Corridor is shown on **Figure 1** and has been refined since statutory consultation. The actual trench will be approximately 3m wide and 3m deep within a working area of 30–40m, within the Cable Corridor;

g. **Fencing and security** – A fence will enclose the operational areas of the Proposed Development (Solar PV Array Areas, the BESS Compound, and the Onsite Substation). The fence around the Solar PV Array Areas is likely to be a stock proof mesh-type security fence with wooden posts and approximately 2m in height. Pole mounted closed circuit television (CCTV) systems installed at a height of up to 3.5m are also likely to be deployed around the perimeter of the operational areas facing along the fence line and into the Principal Site (shown on **Plate 4**). The Onsite Substation and the BESS Compound would be surrounded by a secure metal palisade fence up to 2.5m in height in line with electrical safety standards;

h. **Access tracks** – The internal access tracks would be constructed across the Principal Site. These would typically be 5m wide with passing bays provided as required; and

i. **Landscaping and biodiversity enhancement areas** – The Proposed Development will include dedicated bird mitigation land parcels, new planting, field boundary enhancement and planting of grassland seed mixes within the Solar PV Array Areas and within the wider Principal Site.

3.2.5 During the construction phase, one main construction compound near the A46 (approximately 200m x 100m) and several secondary compounds (approximately 100m x 100m) will be created, as well as temporary roadways to facilitate access to all land within the Principal Site. The construction compounds will be ‘built-out’, being gradually replaced by the solar PV arrays as the construction progresses. Temporary construction compounds will also be required along the Cable Corridor.

3.2.6 Landscaping and habitat management in areas around the solar infrastructure have been included within the Proposed Development design to contribute to achieving Biodiversity Net Gain (BNG). **Figure 2** shows the planting proposals.

Plate 1: Solar PV Panels with Fixed South Facing Configuration

Plate 2: Typical string inverter

Image reproduced courtesy of Huawei.

Plate 3: Typical transformer cabin (including switchgear)

Image reproduced courtesy of Selma.

Plate 4: Example of mesh stockproof fencing and a metal perimeter CCTV pole

3.3 Construction

Construction Programme

3.3.1 The construction phase is anticipated to take 24 months if multiple construction teams are mobilised simultaneously, as planned, or slightly longer (up to 30 months) if one construction team construct it field by field. Subject to being granted consent, construction is anticipated to start in 2031 to enable completion for the agreed connection date of 2033. The final programme will be dependent on the final design of the Proposed Development, the final agreed connection date with National Grid, and potential environmental constraints on the timing of the construction activities.

3.3.2 The potential for an earlier start date would be discussed with National Grid following receipt of any DCO consent, in the event National Grid can facilitate connection earlier than the current offered date.

Construction Activities

3.3.3 Construction works are envisaged to include the following activities:

a. Site preparation:
   i. Delivery of construction materials, plant and equipment;
   ii. The establishment of the temporary construction compound(s);
   iii. The establishment of the perimeter fence;
   iv. The upgrade of existing tracks and access roads and construction of new tacks required;
   v. The upgrade or construction of crossing points (bridges/culverts) over drainage ditches; and
   vi. Marking out location of the infrastructure.
b. Principal Site construction:
   i. Delivery of construction materials, PV panels, BESS, cabling, plant and equipment;
   ii. Erection of panel mounting structures;
   iii. Mounting of panels;
   iv. Installation of electric cabling;
   v. Installation of transformer containers;
   vi. Installation of battery storage units;
   vii. Construction of substation compound; and
   viii. Construction of onsite electrical infrastructure to facilitate the export of generated electricity.
c. Testing and commissioning; and

d. Reinstatement, landscaping and habitat creation.

Site Access

3.3.4 During construction there are expected to be 20 site access points which would provide access to an internal network of access tracks enabling access to each field parcel. These are illustrated on **Figure 2**.

3.3.5 The internal access tracks would be constructed across the Principal Site and are also shown indicatively on **Figure 2**. These would typically be 5m wide with passing bays provided as required. Initially at each of the main access points, access tracks would be required to be 6m wide on approach to the construction compounds to facilitate two-way Heavy Goods Vehicle (HGV) traffic. The internal access tracks will likely be constructed of compacted stone or gravel with excavation kept to a minimum, or for secondary tracks left as grass. Where drainage is required a ditch or a swale may be located downhill of the internal access track to control any potential for surface water run-off.

3.3.6 It is expected that during the construction phase there will be a peak of around 50 HGV deliveries per day (100 HGV movements per day) across the regional road network attributed to the Principal Site, with an average of 35 HGV deliveries per day (70 HGV movements per day) throughout the duration of the construction phase. These vehicles will be distributed across the local road network. For the Cable Corridor, there is anticipated to be 8 HGV deliveries per day (16 HGV movements per day). It is also anticipated that there would be 2 to 3 abnormal indivisible loads deliveries in total, associated with the construction of the Onsite Substation. Abnormal indivisible loads are larger than standard HGV size and will deliver large equipment to the Onsite Substation.

3.3.7 Temporary car parks will be provided within the proposed construction compound areas. Construction workers will then be transported around site via mini-bus, or similar.

Construction Staff

3.3.8 At the peak of construction, which is expected to be during 2032, it is estimated that a maximum of up to 600 workers will be required on site per day. On average the construction is anticipated to require 350 workers per day, with 25 allocated to the works on the Cable Corridor. This number will be less at other times of the construction phase and if construction is carried out over a slightly longer period than the anticipated 24 months.

3.3.9 The core working hours will be 07:00 to 19:00 Monday to Friday, and 09:00 to 18:00 on Saturday (except for any percussive piling works within 400m of residential properties). No HGV deliveries or works likely to generate substantial noise will be undertaken during the hours of 13:00 to 18:00 on Saturday. Working hours will be year-round, although there is the possibility of shorter hours in the months with reduced daylight hours. There will be no works on Sundays and Bank Holidays. Some works activities may need to

occur out of these hours/times due to activities requiring to be undertaken continuously (such as HDD and cable jointing) however will be subject to restrictions outlined in the **Framework CEMP [EN010154/APP/7.7]**. Some noisy activities are restricted during early hours near residential properties, as described in **Chapter 11: Noise and Vibration [EN010154/APP/6.1]**.

3.3.10 Additionally, quiet non-intrusive works such as the attachment of PV panels may take place over longer periods during the high summer and other quiet non-intrusive works such as electrical testing, commissioning and inspection may take place over longer periods throughout the year.

Construction Controls

3.3.11 The construction phase will be subject to management documents which will limit and control activities. The outline documentation provided with the DCO application to mitigate effects associated with this phase include:

a. Framework Construction Environmental Management Plan (CEMP) **[EN010154/APP/7.7]**;

b. Framework Soil Management Plan (SMP) **[EN010154/APP/7.10**;

c. Framework Public Rights of Way Management Plan **[EN010154/APP/7.14]**; and

d. Framework Construction Traffic Management Plan (CTMP) **[EN010154/APP/6.18]**.

3.3.12 The production of detailed versions of these plans is secured through DCO requirements, meaning that they must be in place before development can lawfully begin and complied with thereafter.

Site Reinstatement and Habitat Creation

3.3.13 Prior to and during the construction phase, and following construction, a programme of site reinstatement and habitat creation will be implemented.

3.3.14 The Principal Site has been designed to fit within the network of Public Rights of Way (PRoW) and existing permissive paths in the area, with approximately 9.5km of additional permissive paths proposed to further enhance the local connectivity.

3.3.15 The Proposed Development has been designed to integrate with and, where practicable, enhance the local green infrastructure network, improving ecological connectivity across the Principal Site.

3.3.16 Based on the indicative layout of the Principal Site, new planting would include, in addition to hedgerow enhancement, gapping up and infill planting, and grassland under the panels and along perimeter buffers:

a. Approximately 16km of new native hedgerows;

b. Over 200 new trees;

c. Approximately 20ha of species rich grassland (outside of Solar PV areas);

d. Approximately 83ha of permanent grassland for bird mitigation purposes; and

Approximately 1.8ha of community orchard[1].

3.3.17 Offsetting provisions have been embedded within the Proposed Development design for mitigating the loss of arable farmland and providing habitat for ground nesting birds, in particular Skylark and Lapwing. As set out in **Chapter 8: Ecology and Biodiversity** of this ES **[EN010154/APP/6.1]**, a minimum of 64ha of permanent grassland will be delivered to support ground nesting breeding birds, along with a minimum 181ha of managed arable land created in general alignment with the **Framework Landscape and Ecological Management Plan (LEMP) [EN010154/APP/7.15]** to mitigate for the loss of nesting habitat for ground-nesting birds.

3.3.18 Furthermore, based on the current plans for the DCO Site, the Proposed Development is predicted to result in a biodiversity net gain of 30.64% for area habitat units, 50.62% for hedgerow units, and 11.83% for watercourse units. The Proposed Development, therefore, is considered to exceed the BNG target of ≥0% BNG. The Applicant has committed to deliver a minimum of 30% biodiversity net gain in habitat units, 50% biodiversity net gain in hedgerow units and 10% biodiversity net gain in watercourse units using DEFRA's Statutory Biodiversity Metric (SBM) (Version 1.0.4) for the Proposed Development (see the **Biodiversity Net Gain Report [EN010154/APP/7.12]** for further details via a requirement in the DCO).

3.4 Operation

3.4.1 The design life of the Proposed Development is 60 years with decommissioning to commence no later than 60 years after the date of first commissioning (currently anticipated to be 2033 to 2093). Decommissioning is expected to take between 12 and 24 months and would be undertaken in phases.

3.4.2 During the operational phase, activity on the Principal Site will be limited principally to vegetation management, equipment maintenance and servicing, periodic replacement of faulty components, periodic fence inspection, panel cleaning, and monitoring to ensure the continued effective operation of the Proposed Development. No areas are proposed to be permanently lit, although limited motion sensor triggered lighting of specific operational units would be in place for safety.

3.4.3 Given the proposed 60-year operational life of the Proposed Development, there will be a requirement for periodic replacement of some or all of the Principal Site elements. The indicative design life of the key equipment of the Principal Site ranges from 5-40 years dependent on the component (see **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]** for

[1] The purpose of the community orchard is for use by local residents and the community to enable open access to the area, enjoyment of the space and to allow residents and the community to pick fruit from the trees grown within this orchard.

further detail). The ES includes an assessment of the likely impact of component replacement (e.g. panels and batteries) and outlines what measures will be put in place to ensure that these components are diverted away from the waste chain.

3.4.4 Grass underneath the panels will either be mowed or grazed by sheep where and when appropriate, with the preference being grazing in cooperation with a willing and able farmer. As for the panel cleaning, in the UK solar PV panels need to be cleaned on average every two years and will be cleaned purely with water.

3.4.5 It is anticipated that there will be up to four permanent staff located on-site undertaking day-to-day maintenance tasks once the Proposed Development is operational. There will be additional staff (up to 20 per day) attending the Principal Site when required for maintenance, landscaping works, the replacement of solar infrastructure, and cleaning of the PV panels.

3.4.6 A **Framework Operational Environmental Management Plan (OEMP) [EN010154/APP/7.7]** has been produced as part of the DCO application to demonstrate how mitigation and management measures will be implemented. The delivery of a detailed version of the Operational Environmental Management Plan is secured through a DCO requirement.

3.5 Decommissioning

3.5.1 At the end of the 60-year design life the Proposed Development will be decommissioned. Decommissioning is expected to take between 24 and 30 months. All PV panels, Onsite Substation, mounting structures, inverters, transformers and batteries would be removed and recycled or disposed of in accordance with good practice and market conditions at the time.

3.5.2 Buried cables would either be removed or left in situ. Leaving the cables in the ground avoids disturbance to overlying land, habitats and to neighbouring communities and does not prevent agricultural use due to the depth of installation of the cables. Alternatively, the cables can be removed by opening up 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.

3.5.3 It is anticipated that some areas of landscape and biodiversity mitigation and enhancement within the Principal Site may be left in situ given they could contain protected species and so relevant licences at the time would need to be obtained for any changes. Nonetheless, the majority of the Principal Site will be returned to its original use and condition after decommissioning.

3.5.4 The specific method of decommissioning the Proposed Development at the end of its operational life is uncertain at present as the engineering approaches to decommissioning will evolve over the operational life of the Proposed Development. Decommissioning would be undertaken safely and according to the environmental legislation at the time of decommissioning,

including relevant waste legislation. Wastes will be managed, recycled or disposed of in accordance with the relevant legislation and guidance at the time.

3.5.5 The environmental effects of decommissioning are usually similar to, or of a lesser magnitude than, construction effects.

3.5.6 A **Framework Decommissioning Environmental Management Plan [EN010154/APP/7.9]** accompanies the DCO application and outlines measures to mitigate effects associated with decommissioning of the Proposed Development. Similar to other management plans, the delivery of detailed version of the Decommissioning Environmental Management Plan is secured through a DCO requirement.

4. Site Selection, Alternatives and Design Evolution

4.1 Site Selection

4.1.1 The DCO Site was identified through a site selection exercise undertaken by the Applicant. **Chapter 4: Alternatives and Design Evolution** of the ES **[EN010154/APP/6.1]** presents an overview of the reasons for selecting the DCO Site, a description of and justification for the evolution of the DCO Site Boundary, a description of how the design has evolved since EIA Scoping, and a discussion of the reasonable alternatives.

4.1.2 A range of technical, environmental and economic factors are considered when investigating and assessing a potential site for NSIP-scale ground-mounted solar PV development. The key factors which were considered by the Applicant when selecting land for the Proposed Development included, but are not limited to the following (in no particular order):

a. **Irradiance and Site Topography** – The Applicant has identified Lincolnshire as an optimal area within the UK to locate a large scale solar development due to its good levels of irradiation and large areas of open flat land.

b. **Grid Connection** – Proximity to a grid connection with appropriate capacity at the proposed National Grid substation near Navenby. This would provide an economically viable point of connection for the Principal Site to export and import electricity into the National Grid.

c. **Proximity to Residential Dwellings and Consideration of Land Use, Planning and Environmental Constraints** – The Applicant sought to avoid urban areas, planning allocations, areas of high flood risk, existing relevant infrastructure and also sensitive landscape, ecology, Green Belt, and heritage designations to refine the area of search.

d. **Agricultural land classification and land type** – There is a need to avoid and minimise the use of best and most versatile (BMV) agricultural land, which is classification grades 1, 2, and 3a. However, development is not prohibited from being located on BMV agricultural land. Based on the provisional soil data, the majority of the Principal Site was not classified as best and most versatile (69%), which has been verified through soil surveys.

e. **Accessibility** – Good access for HGVs and abnormal invisible loads (AIL) is preferred for straightforward construction of large-scale solar development. The Applicant selected land which has good access to the strategic and local road network including the A15 and A46.

f. **Public Rights of Way (PRoW)** – In selecting the land for the Proposed Development, the Applicant sought to, where possible, avoid land crossed by a dense network of PRoWs. Where land was identified with a PRoW present, consideration was then given to the potential size of the developable area for solar PV infrastructure which would remain following the application of buffers around PRoWs.

4.1.3 Following consideration of the above amongst wider factors in addition to land availability, the area in which the Proposed Development has been located was identified as having good potential for a large-scale ground mounted solar PV facility.

4.2 Alternatives Considered

4.2.1 Following site selection, alternative solar infrastructure technologies and battery storage arrangements were considered and developed, taking into account environmental considerations, the Design Vision for the Proposed Development and the need to achieve optimum functionality. The solar PV technologies considered were fixed south facing arrays, single axis tracking arrays, and east-west fixed arrays. The east west fixed arrays were discounted for several reasons including the higher numbers of construction vehicles that would be required to deliver a more densely packed scheme.

4.2.2 Alternative layouts of the Proposed Development have been considered in response to preliminary environmental assessments, the Proposed Development's Design Vision and functionality, and feedback from stakeholders during the non-statutory consultation process.

4.2.3 Alternative cable corridors were considered for the Proposed Development to connect into the proposed substation near Navenby. Planning, engineering, property and environmental constraints were considered in order to refine the Cable Corridor to a single corridor. Furthermore, at the EIA Scoping stage, overhead lines were considered for the Grid Connection Cable between the Proposed Development and the proposed substation near Navenby, which was discounted to minimise environmental impacts.

4.3 Design Evolution

4.3.1 The design of the Proposed Development has evolved from EIA scoping stage to ES stage in relation to site layout and technology, including, but not limited to:

a. Refinements to the boundary of the Proposed Development.

b. Removal of solar PV panels on land south of the A46 following ecology surveys which identified the existence of ground nesting bird habitat, and identification of an area to the north of the A46 more suitable for solar panels.

c. Changes to the layout at River Farm, a Grade II listed building, to follow historic field boundaries and maintain intervisibility between River Farm and Church Farm which forms the setting of these two heritage assets.

d. Removal of solar PV panels from three fields following statutory consultation, in response to feedback from the community.

e. Amendment to the permissive path network following comments from Lincolnshire Wildlife Trust and the local community.

4.3.2 A full list of changes to the Proposed Development is set out in **Chapter 4: Alternatives and Design Evolution** of the ES **[EN010154/APP/6.1]**, specifically in **Table 4-2.**

5. Assessing Environmental Effects

5.1 Topics Assessed

5.1.1 **Chapters 1 to 5** of the ES **[EN010154/APP/6.1]** provide an introduction to the policy and legislative context, a description of the DCO Site and surrounds, an overview of the Proposed Development and alternatives that were considered during the design process, and the approach and methodology to the EIA. The following environmental topics have been assessed within topic specific chapters of the ES **[EN010154/APP/6.1]**:

a. **Chapter 6: Climate Change**;

b. **Chapter 7: Cultural Heritage**;

c. **Chapter 8: Ecology and Nature Conservation**;

d. **Chapter 9: Water Environment**;

e. **Chapter 10: Landscape and Visual Amenity**;

f. **Chapter 11: Noise and Vibration**;

g. **Chapter 12: Socio-Economics and Land Use**;

h. **Chapter 13: Traffic and Transport**; and

i. **Chapter 14: Other Environmental Topics**, including:

i. Air Quality;
ii. Glint and Glare;
iii. Ground Conditions;
iv. Materials and Waste;
v. Major Accidents and Disasters;
vi. Telecommunications, Television Reception and Utilities; and
vii. Electric and Electromagnetic Fields.

5.1.2 **Chapter 15: Cumulative Effects and Interactions** of the ES **[EN010154/APP/6.1]** describes Cumulative Effects and Effect Interactions that lead to combined effects on sensitive receptors.

5.1.3 **Chapter 16: Summary of Environmental Effects** of the ES **[EN010154/APP/6.1]** presents a summary of the significant effects identified as a result of the EIA.

5.2 Approach to Assessment and Terminology

5.2.1 The ES has been prepared to satisfy the requirements of the EIA Regulations (Ref 1).

5.2.2 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 the quality standards for each technical discipline result in deviations in the standard assessment methodology, these are described in the relevant chapters as applicable within the ES **[EN01054/APP/6.1].**

5.2.3 Where adverse or beneficial effects are identified, these have been assessed against the following scale:

a. **Negligible** – effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, and are of no significant consequence;
b. **Minor** – slight, very short or highly localised effect of no significant consequence;
c. **Moderate** – noticeable effect (by extent, duration or magnitude) which may be considered significant; or
d. **Major** – considerable effect (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards; considered significant.

5.2.4 Each of the technical chapters within the ES provides further description and definition of the significance criteria relevant to each topic. Where possible, this has been based upon quantitative and accepted criteria (for example,

noise assessment guidelines), together with the use of value judgement and expert interpretation to establish to what extent an effect is significant.

5.2.5 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 avoid or reduce the effect, or reduce the likelihood of it happening. The use of any such mitigation will be secured through the DCO, should it be granted. As the design of the Proposed Development has evolved to date, the Applicant has worked with environmental specialists to ensure the design avoids or reduces environmental effects on receptors where practicable through the use of embedded mitigation measures (meaning measures that form part of the design or methods for construction or operation), such as the use of a Construction Environmental Management Plan. These measures are taken into account in the EIA and assessment of effects of the Proposed Development.

5.2.6 Each of the technical chapters of the ES (**Chapters 6 to 14 [EN010154/APP/6.1]**) provides the criteria, including sources and justifications, for quantifying the different categories of effect.

6. Environmental Statement Findings

6.1 Introduction

6.1.1 An assessment of the environmental effects of the Proposed Development during its construction, operation (including maintenance), and eventual decommissioning has been completed for each of the topics identified in Section 5.1 above.

6.1.2 The conclusions on the likely significant environmental effects of the Proposed Development are described within the ES **[EN010154/APP/6.1]**. This section provides a non-technical summary of the overall findings of the ES.

6.2 Climate Change

6.2.1 **Chapter 6: Climate Change** of this ES **[EN010154/APP/6.1]** presents an assessment of the likely significant effects on Climate as a result of the Proposed Development, through the completion of a Lifecycle greenhouse gas (GHG) impact assessment. This chapter also presents a Climate Change Risk Assessment (CCRA) which considers the impact of Climate Change on the Proposed Development and on resources and receptors in the surrounding environment. The chapter also provides an In-combination Climate Change Impact (ICCI) Assessment which assesses how receptors in the surrounding environment may be affected by the combined impact of future climate conditions as well as the Proposed Development. The chapter then provides information on proposed mitigation measures.

Baseline

Lifecycle GHG impact assessment

6.2.2 The study area for the GHG impact assessment covers all direct GHG emissions arising from activities undertaken at the Proposed Development Site during the construction, operation (including maintenance), and decommissioning of the Proposed Development. It also includes indirect emissions embedded within the construction products (e.g. solar PV panels, BESS and cables) and construction materials (e.g. the steel required to construct the PV mounting structures) arising as a result of the energy used for their production, as well as emissions arising from the transportation of products and materials, waste, and construction workers.

6.2.3 For the GHG impact assessment, the current and future baseline is a 'no-development' scenario whereby the Proposed Development is not implemented. The baseline comprises existing carbon stock and sources of GHG emissions resulting from the existing activities within the Proposed Development Site, as well as the emissions that may be avoided as a result of the Proposed Development. This includes the operational emissions from the generation of electricity that would occur should the Proposed Development not go ahead but which will be displaced in the case of the Proposed Development being delivered.

6.2.4 The current land use within the DCO Site will have minor levels of associated GHG emissions from agricultural activities and minor carbon sequestration from vegetation. Therefore, for the purpose of the GHG assessment, embodied GHG emissions are considered to be zero in the future baseline.

Climate Change Risk Assessment and In-Combination Climate Change Impact Assessment

6.2.5 The current baseline for the Climate Change Risk Assessment and In-Combination Climate Change Assessment is the climate at the DCO Site for the 30-year period of 1981 to 2010 (the standard baseline for climate data). This is based on historic climate data recorded by the closest meteorological station to the Proposed Development (RAF Waddington).

6.2.6 The future baseline is expected to differ from the present-day baseline. United Kingdom Climate Projections (UKCP) 2018 probabilistic projections for pre-defined 30-year periods for climate variables have been used to inform future baseline and predict changes such as more intense temperatures.

Embedded Design Measures

Lifecycle GHG impact assessment

6.2.7 The Proposed Development has been designed to mitigate the impacts of the Proposed Development on the climate. These measures are included in the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]**, including increasing recyclability, minimising waste and maximising use of low carbon materials, reusing resources where possible,

reducing the number of construction staff and employee trips, switching vehicles and plant off when not in use, conforming to vehicle emissions standards, and conducting regular maintenance of plant and machinery to enhance efficiency.

Climate Change Risk Assessment and In-Combination Climate Change Impact Assessment

6.2.8 A range of measures have been embedded into the design to mitigate the impacts of climate change on the Proposed Development itself. The **Framework Construction Environmental Management Plan [EN010154/APP/7.7]** incorporates measures to mitigate and prevent an increase in flood risk, for example.

Assessment of Effects

Lifecycle GHG Impact Assessment

6.2.9 GHG emissions sources within the scope of the construction emissions include embodied carbon associated with the manufacture of the materials and their components, particularly the manufacturing of the BESS and solar PV panels, which will have the greatest carbon impact during construction. Transportation of these products will be the second greatest contributor, while the remaining comes from worker commuting, waste, and fuel and water use.

6.2.10 Operational GHG Impacts include the effects of the physical presence of the energy infrastructure, and its operation, use and maintenance. GHG emissions sources within the scope of the operational emissions include operational energy use (i.e. for auxiliary services and standby power) and fuel used for the transportation of workers to the Proposed Development and maintenance activities. Operational emissions will predominantly be from the replacement of panels and the associated embodied carbon in the materials, and therefore occur at regular intervals, rather than ongoing, constant emissions.

6.2.11 The benefits of generating renewable energy from the Proposed Development far outweigh the associated emissions during operation. The Proposed Development's operational phase will indirectly cause a reduction in atmospheric GHG concentration compared to the without-project baseline and aligns with a trajectory towards net zero.

6.2.12 Sources of GHG emissions during decommissioning within the scope of the assessment include worker commuting, water use for decommissioning activities, fuel use on-site, transportation of materials and waste, and waste disposal.

6.2.13 The GHG impact of construction and decommissioning are anticipated to result in **minor adverse**, **non-significant** effects on the climate. The impact of operations is considered to have a beneficial, significant effect due to the operational carbon intensity remaining below that of a gas fired generating facility throughout its lifetime, its role in achieving the rate of transition required

by nationally set policy commitments and supporting the trajectory towards net zero.

6.2.14 The Proposed Development will deliver an overall lifetime carbon saving, relative to the grid average without decarbonisation, of 3,302,906 tCO_2e. Taking into account the emissions associated with constructing the equipment, transporting it to the UK, installing and decommissioning activities, the carbon payback period for construction emissions we be at approximately Year 4 of operation. This will help the UK meet its national and international targets.

6.2.15 This Proposed Development demonstrates an indirect reduction in atmospheric GHG concentration and avoidance of emissions; therefore, it is overall **beneficial** and has a positive impact on climate which is considered to be **significant**.

Climate Change Risk Assessment

6.2.16 Future climate projections have been reviewed and the sensitivity of assets have been examined. As a result of the embedded Climate Change mitigation measures, no significant Climate Change risks during the construction, operation and decommissioning phases have been identified.

In-Combination Climate Change Impact Assessment

6.2.17 Future climate projections and the sensitivity of receptors to both Climate Change and the Proposed Development have been examined and no significant effects have been identified. The Proposed Development will not significantly reduce the ability for receptors to adapt to climate change.

Cumulative Effects

6.2.18 Since the receptor for GHG emissions is global, there is not a requirement or expectation to assess the impact of the Proposed Development along with other developments on climate change. The significant beneficial effect attributed to the Proposed Development will not worsen any adverse effects caused by other developments.

6.2.19 As the Climate Change Risk Assessment is only concerned with the assets of the Proposed Development and a broader consideration of existing interdependent infrastructure, a cumulative assessment is not required.

6.2.20 The In-Combination Climate Change Assessment is, by nature, a cumulative assessment, and therefore does not require further consideration.

6.3 Cultural Heritage

6.3.1 **Chapter 7: Cultural Heritage** of the ES **[EN010154/APP/6.1]** considers the potential impacts on designated and non-designated heritage assets. Heritage assets include archaeological sites, historic buildings, conservation areas, registered parks and gardens, and historic landscapes.

Baseline

6.3.2 **Figure 3** shows designated heritage assets in relation to the Proposed Development. There are no designated heritage assets located within the DCO Site boundary. A single Grade II listed building, River Farmhouse (NHLE 1168186), is located within a land parcel excluded from, but surrounded by, the DCO Site boundary. There are 44 non-designated heritage assets located within the DCO Site.

6.3.3 In addition, there are 145 designated heritage assets located within the defined Study Areas (up to 5km from the DCO Site Boundary). Designated heritage assets include Scheduled Monuments, Listed Buildings and Conservation Areas .

6.3.4 **Figure 4** shows designated heritage assets in relation to the Proposed Development. There are 351 non-designated heritage assets within, or overlapping the border of, the 1km Study Area. Non-designated heritage assets include, but are not limited to, monuments, archaeological sites, findspots and buildings not recorded as designated heritage assets.

Embedded Design Measures

6.3.5 The following embedded mitigation measures have been incorporated into the Proposed Development design:

a. The DCO Site Boundary has been designed to avoid or minimise potential changes to the setting of designated heritage assets, including Grade I, Grade II* and Grade II listed buildings;

b. The use of setbacks of land retained for agriculture or areas of enhanced grassland to provide buffers around historic settlements and heritage assets;

c. Design of solar PV areas to ensure key areas of impact (such as Solar Stations or trackways) avoid areas of known archaeological remains where possible;

d. The retention of existing hedgerows and woodland wherever possible;

e. The removal of all above ground infrastructure to create a buffer zone around the Grade II listed River Farm (NHLE 1168186);

f. The exclusion of development to maintain a view corridor to and from Lincoln Cathedral on land north of the A46;

g. The removal of the Solar PV Panel areas from ploughing and the predominant use of low level piling, which minimises impacts upon buried archaeological remains;

h. Early definition of areas of archaeological preservation in which development is excluded; and

i. The proposed use of horizontal directional drilling (HDD) to install the high voltage interconnector cables beneath the A46 and River Witham,

avoiding surviving remains of the Fosse Way Roman road (MLI60943) and settlement remains south of Haddington (AEC018).

6.3.6 Good practice measures regarding the protection of buried archaeological remains during construction and decommissioning works as well as any maintenance works during operation are presented within the relevant management plans (**Framework CEMP [EN010154/APP/7.7], Framework OEMP [EN010154/APP/7.8] and Framework DEMP [EN010154/APP/7.9]**).

6.3.7 The ongoing and proposed future phases of field work will ensure that any sensitive remains can be identified, appropriately assessed and safeguarded, through flexibility of detailed design measures and following industry standard practices. Where archaeological remains are found, the detailed design of the Proposed Development will aim to avoid disturbing them. This includes leaving some areas free from development and, in some cases, using special 'no-dig' construction methods such as shallow foundations or avoiding underground cabling to protect remains during construction. Where it is not possible to avoid disturbing the ground, small-scale archaeological excavations will be carried out before construction starts. Any important archaeological findings will be recorded and shared with the public in a way that reflects their importance. While some remains may be lost during construction, this will be balanced by the new knowledge gained and the public benefit of sharing the findings.

Assessment of Effects

6.3.8 The assessment of effects has been undertaken while taking embedded mitigation for the Proposed Development into account. A desk-based assessment has been prepared and the information obtained to date has informed this assessment. A geophysical survey has been completed and the full results of the geophysical survey are presented in **Appendix 7-G: Geophysical Survey Report [EN010154/APP/6.3]** of the ES. Further archaeological surveys, including trial trenching surveys have been completed with **Appendix 7-H: Trial Trenching Report (Interim) [EN010154/APP/6.3]** detailing the results of the excavations. These results will be further analysed, and a final Trial Trenching Report will be provided prior to Examination of the DCO application.

Construction

6.3.9 During the construction phase of the Proposed Development, there is the potential for physical impacts and/or impacts through change to the setting of heritage assets as a result of construction activities which includes but is not limited to, the presence and movement of construction plant and equipment; the siting of construction compounds; noise and lighting; increased traffic volumes; any below ground activities including but not limited to groundworks, planting, earth-moving operations, topsoil removal, trenches for cabling, the installation of solar PV panels and associated infrastructure; and the introduction of the physical form and appearance of the Proposed Development.

6.3.10 The significance of the potential effects on known and potential buried archaeological remains (including late prehistoric/Roman remains, medieval remains and agricultural features) before additional mitigation ranged from **neutral to moderate adverse**. However, following the implementation of the embedded and additional mitigation measures, it is considered that in the worst-case scenario, the residual effect on buried archaeological remains would be a **neutral (not significant)**. Additional mitigation comprising a programme of archaeological investigation and recording would deliver benefits which would offset the loss of remains and allow for this already non-significant adverse effect to be further reduced or potentially avoided completely.

Operation (and Maintenance)

6.3.11 During the operation and maintenance phase of the Proposed Development, there is the potential for impacts through change to the setting of heritage assets as a result of operational activities which includes, but is not limited to, the continued presence of the physical form and appearance of the Proposed Development; operational traffic movements; operational lighting; and/or noise.

6.3.12 During the operational and maintenance phase of the Proposed Development, no significant effects have been identified, however **adverse** (not significant) effects have been identified for the following heritage assets:

a. Grade II Listed Buildings (Grange Cottage [1061951] and River Farmhouse [1168186]) – potential long term impact on setting and views;

b. A negligible adverse (not significant) effect has been identified for the non-designated Tonge's Farm [119774] – potential long-term adverse change within the setting.

6.3.13 Effects on the remaining heritage assets remain neutral (not significant).

6.3.14 It is not expected that the operational and maintenance of the Proposed Development would result in any further intrusive activities, and as such no impact to below ground archaeological remains is anticipated during this phase.

Decommissioning

6.3.15 It is considered that there will be no additional impacts on buried heritage assets during decommissioning activities. Decommissioning will be undertaken within largely the same footprint used during construction of the Proposed Development and therefore any impact to buried heritage assets would have occurred, and have been mitigated, during the construction phase. Similarly, temporary changes to the setting of designated and non-designated building and earthworks arising from the decommissioning works are assumed to be commensurate with, and no worse than, those experienced during construction of the Proposed Development.

Cumulative Effects

6.3.16 The Cumulative Effects assessment identified six of the shortlisted developments listed in **Chapter 15: Cumulative and Effect Interactions** of this ES **[EN010154/APP/6.1]** with the potential for Cumulative Effects.

6.3.1 Other developments with the potential for Cumulative Effects were given consideration owing to their proximity to the Proposed Development or potential for impacts on the same heritage receptors as the Proposed Development.

6.3.2 The construction phase cumulative impacts to the buried archaeological resource arising from the Proposed Development and nearby cumulative schemes would likely comprise some degree of loss through intrusive groundworks. However, this impact is reduced through design measures (such as avoidance), through the use of piling for the installation of photovoltaic panel frames, which limits the area of impact within the sites, and through the implementation of appropriate further measures. Accordingly, the construction phase cumulative impact is a neutral effect on non-designated remains of medium to low value. This is not a significant effect.

6.3.3 In terms of buried archaeology, impacts are limited to the construction phase, therefore there is no potential for significant Cumulative Effects during operation.

6.3.4 During decommissioning, it is not anticipated that there would be any impacts from the Proposed Development which would give rise to Cumulative Effects.

6.3.5 In terms of designated heritage assets, historic buildings and historic landscape elements, the assessment of the Proposed Development concluded that there would be no adverse effects anticipated for the majority of the resource. As such, any identified effects from the shortlist of cumulative schemes would not be material to the assessment of the Proposed Development.

6.3.6 For those heritage assets which would be adversely affected by the Proposed Development (Grade II Listed River Farmhouse and Grange Cottage, as well as the non-designated Tonge's Farm), the cumulative schemes are situated at sufficient distance from those assets, and separated by the DCO Site, built form (settlements) and vegetation, and as such would be unlikely to affect those historic buildings in any way. As such there would be no cumulative impacts from the Proposed Development and the cumulative schemes.

6.4 Ecology

6.4.1 **Chapter 8: Ecology and Nature Conservation** of the ES **[EN010154/APP/6.1]** presents the findings of an assessment of the potential for significant effects of the Proposed Development on ecology and nature conservation (collectively referred to as biodiversity) within the DCO Site and surrounding area (the Zone of Influence). The assessment considers effects on designated sites, habitats, and protected species and is based on

information obtained at the time of publication through a desk study and ecological field surveys. It was undertaken and reported with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment (EIA) in the UK and Ireland[2].

Baseline

6.4.2 A desk study was carried out to identify statutory and non-statutory sites designated for their biodiversity value and records of protected and/ or notable habitats and species (ecological features) and invasive non-native species that are relevant to the Proposed Development.

6.4.3 Greater Lincolnshire Nature Partnership was contacted in April 2023 to obtain pre-existing ecological data (such as location and citations of Local Wildlife Sites, records of protected, notable habitats and species; and on scheduled invasive non-native species within 2km of the DCO Site).

6.4.4 A review of available online data was also undertaken using a range of sources, as detailed in **Chapter 8: Ecology and Nature Conservation** of the ES **[EN010154/APP/6.1].**

6.4.5 The requirement for detailed ecological field surveys was determined following a Preliminary Ecological Appraisal (included as **Appendix 8-B**: **Preliminary Ecological Appraisal (PEA)** of the ES **[EN010154/APP/6.3]**).

6.4.6 Ecological field surveys were undertaken throughout 2023, 2024 and 2025 as detailed in **Table 8-1** of **Chapter 8: Ecology and Nature Conservation** of the ES **[EN010154/APP/6.1]**, which also describes the survey areas, methods, results, survey periods and relevant guidance documents for each survey.

6.4.7 Ecological features considered in **Chapter 8: Ecology and Nature Conservation** of this ES **[EN010154/APP/6.1]** include species and habitats that are important at an international, national, and local level (this considers how rare and important the species and habitats are). The findings of these detailed surveys are presented in **Appendices 8-C** to **8-J** of the ES **[EN010154/APP/6.3]**.

6.4.8 **Figure 5** shows the statutory designated sites in relation to the Proposed Development. The desk study identified no sites internationally designated for their biodiversity value within 10km of the DCO Site. This includes Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites, nor any sites for which mobile species such as birds and bats are a qualifying feature[3] within 30km of the DCO Site.

6.4.9 The closest site designated for biodiversity importance at a national level is Whisby Nature Park Local Nature Reserve (LNR) which is approximately 340m north of the DCO Site. Swanholme Lakes LNR and Site of Special

[2] Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. CIEEM, Winchester
[3] A qualifying feature is habitat listed in Annex 1 of the Habitats Directive or a species listed in Annex 2 of the Habitats Directive that is known to be present within the site and is therefore a primary reason for the designation

Scientific Interest (SSSI) is located approximately 4.0km to the north-east of the Principal Site.

6.4.10 **Figure 6** shows the non-statutory designated sites in relation to the Proposed Development. There are 29 sites that are non-statutorily designated for their biodiversity value within 2km of the DCO Site (as presented in **Table 8-7** of **Chapter 8: Ecology and Nature Conservation** of the ES **[EN010154/APP/6.1]**). Three of these sites (River Witham, Aubourn to Beckingham Local Wildlife Site (LWS) Navenby Heath Road Verges LWS, and Navenby, Green Man Road Verges LWS) are within or partially within the DCO Site. River Witham, Aubourn to Beckingham LWS is avoided and outside of the developable areas of the Proposed Development. Navenby Heath Road Verges LWS and Navenby, Green Man Road Verges LWS are within the Cable Corridor.

6.4.11 In addition, the desk study identified three areas of Ancient Woodland, outside of the DCO Site, but within 2km of the DCO Site Boundary.

6.4.12 A Phase 1 Habitat survey was undertaken over several survey visits on 27 June 2023 with follow up surveys completed on the 24 August, 5–6 September 2003, 7–9 November 2023, 8–9 May 2024, and 7-8 May 2025. The survey identified that the land within the DCO Site is dominated by intensively managed arable agriculture, but also includes grassland fields, established trees and hedgerows with small areas of woodland (called copses) and 16 ponds. The surrounding habitat is mainly arable, with small pockets of mature woodland. The findings of the survey identified the requirement for further assessment of aquatic plants and invertebrates, terrestrial invertebrates, Great Crested Newt *Triturus cristatus*, reptiles, birds (breeding and non-breeding), Badger *Meles meles*, Otter *Lutra lutra,* and Water Vole *Arvicola amphibious*. The results of surveys undertaken are presented in **Appendices 8-B** to **8-K** of the ES **[EN010154/APP/6.3]**.

6.4.13 A tree survey was also carried out, to determine their value and root protection areas (RPA), and identify the need for avoidance or mitigation. The results of these surveys are presented in the **Chapter 8: Ecology and Nature Conservation [EN010154/APP/6.1]** and **Appendix 10-H: Arboricultural Impact Assessment [EN010154/APP/6.3]** of the ES.

Embedded Design Measures

6.4.1 Embedded design measures have been incorporated into the design of the Proposed Development, as presented in **Table 8-10** of **Chapter 8: Ecology and Nature Conservation** of this ES **[EN010154/APP/6.1]** and within the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]** which is secured as part of the DCO application requirements. As a first principle, the Proposed Development has sought to avoid important ecological features and where this has not been possible, then embedded design measures have been added to form an integral, committed and deliverable part of the Proposed Development or otherwise comprise

standard construction practices. Examples of embedded design measures for construction include:

a. Applying buffers from habitat features:
   i. offsets of at least 15m from existing woodlands and lines of trees;
   ii. offsets applicable to each tree's Root Protection Area, for individual trees and trees occurring within hedgerows;
   iii. a minimum no development buffer of 5m from hedgerows without trees;
   iv. a minimum offset of 10m from the bank-top of watercourses as per Environment Agency guidelines; and
   v. suitable no development buffers (dependent on the aquatic habitat present) from water bodies (such as ponds) to protect aquatic habitats.

b. Additionally, for protected species:
   i. Horizontal Directional Drilling (HDD) for sections of the Cable Corridor at a minimum depth of 2m below minor/ordinary watercourses (except where minor/ordinary watercourses have minimal or no water flow and water management is easily managed) and 5m where it crosses the River Witham and River Brant (to protect fish);
   ii. avoidance of protected species, such as:
      - 30m buffer from active Badger setts;
      - 15m buffer from trees with potential to support bat roosts;
      - 10m buffer from watercourses for riparian mammals; and
      - 100m buffer from a potential Otter holt.
   iii. a security perimeter fence will be erected early in the construction phase to secure the DCO Site and prevent construction activity in proximity to retained habitats within the DCO Site and habitats adjacent to the DCO Site; and
   iv. where lighting is required during construction, it will conform to best practice guidelines with respect to minimising or removing light spill into habitats.

6.4.2 As part of the landscape design for the Proposed Development, new habitats will be provided to increase biodiversity compared to the existing baseline. This will include areas of undeveloped land and converting areas of agricultural land around and beneath the solar PV panels into grassland, strengthening hedgerows by planting up any gaps, planting new areas of trees and enhancing habitats next to watercourses, and the designation of natural re-generation areas. The creation and subsequent management of habitats is detailed within a **Framework Landscape and Ecological Management Plan (LEMP) [EN010154/APP/7.15]**, included as part of the DCO application.

These measures will benefit species by increasing areas of habitat provision and improving connectivity between habitats within and across the DCO Site.

6.4.3 The Proposed Development will also provide a range of habitat boxes, for bats and birds within existing woodland areas and retained trees to increase the availability of nesting and roosting features and enhance the value of these habitats for these species groups. A number of reptile and amphibian habitat piles and hibernacula will be provided in suitable areas, such as close to ponds or watercourses, using natural materials generated during site clearance site, such as logs, turf, and grass strimming.

6.4.4 Pre-construction surveys will be undertaken during the appropriate seasons prior to the construction of the Proposed Development. These will inform detailed design where needed, provide up to date status of protected species that require mitigation during site clearance, and inform any protected species licensing that may be required should species distribution change or detailed design result in licencing requirements for species.

6.4.5 An Ecological Clerk of Works will be appointed to manage the risks to biodiversity during the construction of the Proposed Development, advising on protected or otherwise valued ecological features, providing practical solutions.

6.4.6 A programme of monitoring will be established prior to operation to ensure that biodiversity measures are implemented according to the management plans with necessary remediation.

Assessment of Effects

Construction

6.4.7 Effects on ecological features from infrastructure projects can arise from direct and indirect impacts upon designated sites, habitats or species, and be of a temporary or permanent nature. Indirect effects can occur for example through pollution of air and water, and via changes in lighting, noise or hydrology.

6.4.8 The construction of the Cable Corridor has the potential to directly impact upon habitats within Navenby Heath Road Verges LWS and Navenby Green Man Road Verges LWS, resulting in a **temporary minor adverse effect**, that is **not significant** in EIA terms. Regardless, the Proposed Development will seek to avoid or minimise any effects on these LWS through careful routing of the Cable Corridor during detailed design, post consent.

6.4.9 The construction of the Cable Corridor may result in the temporary loss of and fragmentation of *Deschampsia* neutral grassland, resulting in a **temporary minor adverse effect**, that is **not significant** in EIA terms. The trenched method will lead to a temporary loss of a narrow corridor within this area, however the habitat in this location has been regularly disturbed in the past through grazing and can readily be recreated through natural regeneration and/or supplementary seeding from the adjacent grassland and appropriate management.

6.4.10 The construction of the Proposed Development has the potential to result in the temporary loss of Main Rivers (including ditches), which will be restored post-construction, and aquatic macrophytes and macroinvertebrates within this habitat. This may result in a **temporary minor adverse effect**, that is **not significant** in EIA terms as it does not affect the overall resource of running water, nor the integrity of any particular watercourse. However, the Proposed Development will seek to avoid and minimise any predicted impacts, with standard environmental protection measures implemented during construction of the Proposed Development, as detailed in **Table 8-10** of **Chapter 8: Ecology and Nature Conservation** of this ES **[EN010154/APP/6.1]**.

6.4.11 Construction activities are predicted to result in the permanent loss of arable field margins with scarce arable flora and loss and fragmentation of cropland (arable fields with pollen and nectar and/or wild bird mix) within the Principal Site. Areas of cropland will be retained, particularly the arable margins, as much as is practicable, buffered and their quality improved through positive management, however the majority of this habitat will be lost. This may result in a **temporary minor adverse effect**, that is **not significant** in EIA terms.

6.4.12 The potential loss of small sections of hedgerows within the DCO Site as a result of construction of the Cable Corridor and fences and access routes across the DCO Site has the potential to result in a **temporary minor adverse effect** that is **not significant** in EIA terms as it does not affect the overall resource of hedgerows, nor the integrity of particular hedgerows. The majority of hedgerows across the DCO Site will be avoided and any replanting required or plugging of gaps within defunct hedgerows, has been embedded within the design of the Proposed Development. Once hedgerows establish along with additional hedgerow planting proposed across the DCO Site, it is predicted that the Proposed Development will be able to deliver a net gain in this habitat and the overall impact will be **beneficial**.

6.4.13 It is acknowledged that construction activities will result in the loss of arable farmland used by ground-nesting birds, however sufficient areas of habitat creation, alongside extensive habitat enhancements, have been incorporated into the Proposed Development to offset the impact of the loss of arable farmland used by ground-nesting birds as well as provide extensive benefits for other ecological features and wider biodiversity. The Proposed Development will create areas of permanent, open grassland habitats that will provide higher quality nesting and foraging opportunities for ground-nesting birds. Considering the embedded mitigation, the effect of habitat loss is **not significant** in EIA terms.

6.4.14 At this stage, no residual significant effects on important ecological features are anticipated to occur due to the construction of the Proposed Development, with the implementation of suitable mitigation measures.

Operation (and Maintenance)

6.4.15 With the implementation of suitable embedded mitigation, the assessment of effects on important ecological features has concluded that the operation of the Proposed Development is unlikely to result in significant effects on important species, habitats and designated sites.

6.4.16 The assessment identified that during operation (and maintenance) there is the potential for displacement of foraging/commuting bats due to the presence of solar panels. Taking into account the measures embedded into the Proposed Development design, which include providing large areas of permanent grassland which is suitable for foraging bats, and a design which ensures solar panels are distanced from all important habitats used by foraging bats, for example water bodies, hedgerows and woodlands; there is anticipated to be a negligible effect (not significant in EIA terms) on the overall bat populations present within the DCO Site.

6.4.17 Although the requirement for a minimum 10% gain in biodiversity for NSIPs will not become mandatory until a future date under the Environment Act 2021 (anticipated to be November 2025), the Applicant has committed to deliver a minimum of 30% biodiversity net gain in habitat units, 50% biodiversity net gain in hedgerow units and 10% biodiversity net gain in watercourse units using DEFRA's Statutory Biodiversity Metric (SBM) (Version 1.0.4) for the Proposed Development. This commitment is secured by way of a Requirement in the DCO.

Decommissioning

6.4.18 At this stage, the effects of decommissioning of the Proposed Development are likely to be similar to those for construction and will need to follow legislation and policy requirements at the time of decommissioning.

Cumulative Effects

6.4.19 No plans or projects identified in **Chapter 15: Cumulative Effects and Interactions** of the ES **[EN010154/APP/6.1]** are considered to cumulatively impact on important ecological features identified in **Chapter 8: Ecology and Nature Conservation** of the ES **[EN010154/APP/6.1]**. It is expected that all the cumulative developments included in the assessment will implement suitable mitigation measures in line with relevant legislative and policy requirements and best practice. Therefore, the potential for impacts to important ecological features during the construction, operation and maintenance, and decommissioning phases of the Proposed Development are considered to be limited to within the DCO Site itself. Other developments are not likely to contribute to the effects on important ecological features identified, therefore the Cumulative Effects are not significant.

6.5 Water Environment

6.5.1 **Chapter 9: Water Environment** of the ES **[EN010154/APP/6.1]** presents the findings of an assessment of the likely significant effects of the Proposed

Development on the water environment. It also identifies and proposes measures to address the potential impacts and effects of the Proposed Development on surface waterbodies (e.g. rivers, streams, ditches, canals, lakes and ponds) including water quality, hydromorphology, flood risk, drainage and water resources during construction, operation, and decommissioning of the Proposed Development.

Baseline

6.5.2 For the purposes of this assessment, a general Study Area of 1km around the Proposed Development boundary has been considered in order to identify water bodies that are hydrologically connected to the Proposed Development and have the potential to be directly impacted by the activities associated with the Proposed Development. As watercourses flow, water quality and flood risk impacts may propagate downstream. The watercourses across the Study Area drain towards the River Witham and the Fleet, and these are considered the final receiving waterbodies that could conceivably be affected (and which are all within the Study Area).

6.5.3 Baseline desk study and site survey have identified several surface and groundwater features of importance within the 1km Study Area. The Proposed Development is mainly located within the Anglian River Basin Management Plan (RBMP) area (under the Witham Management Catchment), with a small area of the Principal Site to the north west within the Humber RBMP area (under the Trent Lower Erewash Management Catchment). It extends across three Water Framework Directive (WFD) Operational catchments, namely the Witham Upper, Witham Lower and Trent and Trib Operational Catchments.

6.5.4 Significant surface water features in the Study Area include the WFD designated River Witham (Witham from Cringle Brook to confluence with Brant water body) and River Brant (Brant Upper Water Body to River Witham water body). The catchments of the following WFD water bodies also cross into the Study Area albeit the water bodies are not themselves in the Study Area: Boultham Catchwater Drain, South Hykeham Catchwater, Metheringham Beck, Dunston Beck and the Fleet Lower Catchment. Named and unnamed drains, ditches and ponds (many being artificial) are ubiquitous across the Study Area, associated with agriculture and land drainage.

6.5.5 Significant groundwater features within the Study Area include the Lincolnshire Limestone bedrock aquifer which is a principal aquifer, as well as several bedrock and superficial secondary aquifers. Surface and groundwater abstractions are present across the Study Area. There are several water resource designations also present within the Study Area including Nitrate Vulnerable Zones, Drinking Water Protected Areas, and Drinking Water Safeguard Zones.

6.5.6 The majority of the Principal Site lies in Flood Zone 1 (less than 1 in 1,000 annual probability of flooding), with areas of Flood Zone 2 (between 1 in 100 and 1 in 1000 annual probability), and Flood Zone 3 (1 in 100 or greater annual probability of flooding) running across the Principal Site associated with the

floodplain of the River Witham. There is also an area of Flood Zone 2 and Flood Zone 3 to the north west of the Principal Site associated with Mill Dam Dyke.

6.5.7 The majority of the Cable Corridor lies within Flood Zone 1, but with areas of Flood Zone 2 and 3, mainly associated with the River Brant. There are flood defences that border the River Witham and River Brant in the Study Area.

6.5.8 The risk of surface water flooding within the Principal Site is generally very low (chance of flooding of less than 1 in 1000 annual probability), with areas of low, medium, and high risk generally associated with flow pathways following topographic low points, including drains and agricultural ditches, where surface water sits and pools rather than draining away, or areas at risk of flooding from smaller Ordinary Watercourses and/or local land drains.

6.5.9 Further flood risk details are provided in **Appendix 9-C: Flood Risk Assessment (FRA)** of the ES **[EN010154/APP/6.3].**

Embedded Design Measures

6.5.10 The Proposed Development has been designed, as far as practicable, to avoid and reduce impacts and effects on the water environment through the process of design development, and by embedding measures into the design.

6.5.11 The construction of the Proposed Development will take place in accordance with a detailed Construction Environmental Management Plan (a **Framework Construction Environmental Management Plan [EN010154/APP/7.7]** is included as part of this DCO application). The **Framework Construction Environmental Management Plan [EN010154/APP/7.7]** details the measures that would be undertaken to mitigate the temporary effects of construction on the water environment. The measures within the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]** focus on managing the risk of pollution to surface waters and the groundwater environment. It also includes measures regarding the management of activities within floodplain areas (i.e. kept to a minimum and with temporary land take required for construction (such as temporary construction compounds and temporary construction access roads) to be located out of the floodplain as far as reasonably practicable).

6.5.12 Construction works undertaken adjacent to, beneath and within watercourses will comply with relevant guidance and good practice measures. This will include requirements of the Environment Agency for Main Rivers, and requirements of the Lead Local Flood Authority and Internal Drainage Boards for Ordinary Watercourses.

6.5.13 The topography of the DCO Site is relatively flat, and apart from where cables are to be installed across watercourses using open trench techniques, the construction works across the DCO Site are buffered from watercourses by at least 10m.

6.5.14 Where direct works are required within a watercourse, for instance for watercourse crossings for cable installation and access tracks, suitable mitigation measures for these works are outlined in the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]**.

6.5.15 Direct impacts to the River Witham and River Brant would be avoided through the use of trenchless (horizontal directional drilling) crossings for cables. These would avoid any direct works to watercourses, with horizontal directional drilling send and receive pits set back a minimum of 10m from the channel and 16m from the landward toe of flood defences.

6.5.16 All new infrastructure will be a minimum of 10m away from watercourses. Individual solar PV panels will be held above the ground surface on mounting structures. This prevents sealing the ground with an impermeable surface beneath the solar panels, allowing rainfall/runoff to infiltrate to ground throughout the Principal Site.

6.5.17 **Appendix 9-D: Framework Surface Water Drainage Strategy** of the ES **[EN010154/APP/6.3]** describes the measures for the attenuation of surface water runoff from new areas of hardstanding (e.g. the BESS and Onsite Substation) and across the Solar PV Array Areas. Attenuation swales have been designed to contain the 100-year (plus a 40% allowance for an increase in peak rainfall intensity due to climate change) design storm event. The existing surface water flood risk to properties along The Avenue will be reduced by the drainage proposals, thereby providing betterment. The drainage proposals also cover the management of drainage in the event of a fire (firewater containment). This framework strategy will be developed into a detailed Surface Water Drainage Strategy post consent, and this will be a requirement of the DCO.

6.5.18 Potential impacts from the decommissioning phase of the Proposed Development are similar in nature to those during construction, as some ground works would be required to remove infrastructure. A detailed Decommissioning Environmental Management Plan will be prepared prior to decommissioning to identify required measures to prevent pollution and flooding. A **Framework Decommissioning Environmental Management Plan [EN010154/APP/7.9]** is included within the DCO application.

Assessment of Effects

6.5.19 Several activities during the construction, operation, and decommissioning phases are likely to generate impacts, which, if unmitigated, have the potential to affect the water environment.

6.5.20 Following the implementation of embedded mitigation measures (see above), including industry good practice measures secured via the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]**, the effects for surface water, groundwater, or flood risk during construction are considered neutral or slight adverse, and therefore not significant.

6.5.21 During the operational phase, there is the potential for adverse impacts on watercourses from run-off and spillages from new hardstanding and maintenance activities, if not properly mitigated. There is the potential for impacts on hydrology to occur from alterations to natural flow pathways, and an increase in diffuse pollutants received by waterbodies. During the operational phase, the operator of the Proposed Development would apply good industry standard practice measures and adhere with environmental legislation. **Appendix 9-C: Flood Risk Assessment (FRA)** of the ES **[EN010154/APP/6.3]** indicates that there is no increase in flooding on or off-site as a result of the Proposed Development.

6.5.22 The effects for surface water, groundwater, water resources or flood risk during operation are considered neutral or slight adverse, and therefore not significant.

6.5.23 Potential impacts from the decommissioning phase of the Proposed Development are similar in nature to those during construction, as some ground works would be required to remove infrastructure. With mitigation measures in place as defined through the Decommissioning Environmental Management Plan, the effects for surface water, groundwater, or flood risk during decommissioning are also considered not significant.

6.5.24 **Appendix 9-B: Water Framework Directive (WFD) Screening Assessment** of the ES **[EN010154/APP/6.3]** has concluded that there would be no deterioration in the status of any WFD waterbody classification and no prevention of future improvement in status, given the mitigation built into all phases of the Proposed Development.

Cumulative Effects

6.5.25 Several other schemes within the same catchment as the Proposed Development have been considered in the cumulative assessment. For these applications, it is assumed they would follow standard good industry practice in terms of mitigation and compliance with environmental permits and licences in relation to construction and decommissioning of the Proposed Development. In relation to operation and management of the Proposed Development it is assumed that the other schemes would develop and adhere to flood risk assessments and appropriate drainage strategies in line with good practice. As such, there are not expected to be any significant Cumulative Effects anticipated during the construction, operation, and decommissioning phases.

6.6 Landscape and Visual Amenity

6.6.1 **Chapter 10: Landscape and Visual Amenity** of this ES **[EN010154/APP/6.1]** presents the findings of an assessment of the potential significant effects on landscape character and visual amenity that would result due to the Proposed Development. Landscape effects relate to changes to the fabric or individual elements of the landscape, its aesthetic or perceptual qualities and overall landscape character. Visual effects relate to changes to the existing visual

amenity as experienced by visual receptors (people) from the loss or addition of features within their view.

Baseline

6.6.2 A 2km Study Area from the Principal Site and Cable Corridor was defined as the area within which there is potential for significant landscape and visual effects. Although the Proposed Development may be visible beyond 2km, it is unlikely to result in any notable change given the intervening distance, vegetation, and built form.

6.6.3 The assessment of landscape and visual effects is informed by identification of the sensitivity of each receptor and a description of the magnitude of change that would result from the Proposed Development. These judgements are then combined to identify the overall level of effect.

6.6.4 Landscape receptors with potential to be altered are published National Character Areas (NCAs), published Landscape Character Areas (LCAs), and Local Landscape Character Areas (LLCAs) which were defined specifically to inform the identification of landscape effects.

6.6.5 Visual receptors with potential to experience change are residents, people engaged in recreational travelling on public rights of way, and people travelling on the local road network.

6.6.6 The assessment has been informed by desk based and field work, which was undertaken in both summer and winter conditions.

Embedded Design Measures

6.6.7 The landscape and visual impact assessment has informed the iterative design process, incorporating design principles in response to policy requirements, published landscape character assessments and fieldwork analysis. This embedded mitigation has been considered throughout the assessment of effects on landscape character and visual amenity. The design of the Proposed Development has undergone a series of design iterations to embed mitigation measures into the design. Following statutory consultation, the design of the Proposed Development has continued to evolve to take into account stakeholder feedback and the findings of the ongoing surveys and assessments, to integrate with the local green infrastructure network, improving ecological and recreational connectivity across the DCO Site.

6.6.8 To date, mitigation embedded in the Proposed Development comprises:

a. Careful siting of solar PV panels, BESS and Onsite Substation in the landscape, responding to existing topography and vertical screening;

b. Conserving existing vegetation patterns through the placement of new elements within the established field structure;

c. Addition of approximately 16km of new native hedgerows, over 200 new trees and a new community orchard as part of the Proposed Development landscaping design;

d. Sensitive design in relation to form and materials through consideration of the height and appearance of project elements; and

e. Sensitive lighting strategy to minimise light spill.

Assessment of Effects

6.6.9 Potential landscape and visual impacts, accounting for embedded mitigation, are assessed for the construction phase (winter), operation year 1 (winter), operation year 15 (winter and summer), and decommissioning (winter). Year 15 has been chosen to align with industry practice as a year when vegetation planting has matured; the reality is that the planting should have matured many years before this date.

Landscape and Visual Effects During Construction

6.6.10 The assessment has identified that **significant** landscape effects will arise as a result of construction within the Principal Site at a district and local level at six receptors, namely **major adverse significant effects** at the Principal Site, Cable Corridor, LLCA 03: Tunman Hill, and LLCA 08: Thurlby Fenland, and **moderate adverse significant effects** at Sub-area 2: Terrace Sandlands, and Sub-area 5: Witham and Brant Vales. The construction of the grid connection cables in the Cable Corridor will result in **moderate adverse significant** landscape effects across the three Local Landscape Character Areas (LLCAs) namely, LLCA 13: Low Fields South, LLCA 14: Low Fields North and LLCA 15: Lincoln Cliff. These effects are associated with the change to the landscape through loss of vegetation and change to the perceptual qualities such as tranquillity associated with the change from arable landscape to a construction site landscape.

6.6.11 There will be **no significant** effects on the remaining LCAs and LLCAs, due to construction being located outside of these areas and/or the impact being of smaller scale, largely limited to perceptual change.

6.6.12 During construction it is anticipated that **significant** (**moderate and major adverse)** visual effects will arise for 31 visual receptor groups including residents, recreational users of PRoW and motorists on the local road network, where there are views into the DCO Site during construction. This is a result of the introduction of construction plant and activity into people's views.

Landscape and Visual Effects During Operation

6.6.13 Once the Proposed Development is operational, the number of **significant** landscape effects will be reduced to five receptors as the construction equipment will be removed and the DCO Site reinstated. The district and local landscape character areas will be impacted across the Principal Site and LLCA 08: Thurlby Fenland and LLCA 03: Tunman Hill with **major adverse**

significant effects, whilst Sub-area 2: Terrace Sandlands and Sub-area 5: Witham and Brant Vales will experience **moderate adverse significant effects**, due to the introduction of a solar farm in the landscape. The significant landscape effects will further reduce to three **moderate adverse significant effects** at the local level (Principal Site, LLCA 03: Tunman Hill, LLCA 08: Thurlby Fenland) as the mitigation planting is established at year 15 of operation, enhancing the landscape structure and integrating the Proposed Development with the surrounding landscape.

6.6.14 There will be **no significant** landscape effects across the Cable Corridor, since the cable will be underground and the land above it will be returned to its original use, which is mainly agriculture.

6.6.15 Once the Proposed Development is operational, the number of **significant** visual effects will be reduced to 15 receptor groups including residents, recreational users of PRoW and motorists on the local road network. As the mitigation planting will be established by year 15 of operation, providing a greater level of visual screening, the number of **significant** visual effects will further reduce to seven receptor groups, principally recreational users of PRoW network across the Principal Site. This is partly due to the sequential nature of the views along the footpaths and the introduction of solar PV panels in close range views. **No significant** visual effects have been identified for residents at year 15 of operation, with the exception of Grange Cottage which is considered to have potential for **moderate adverse significant** visual effects in winter, given the potential for views during winter time over the adjacent field of solar PV panels. In summer when vegetation is in leaf, the existing and proposed planting will screen a larger proportion of the Proposed Development in comparison to winter conditions such that there will be a subtle change to the existing view and a **minor adverse not significant effect**.

Decommissioning

6.6.16 The **significant** landscape effects during decommissioning phase will be similar to those at the construction, apart from the impacts across the Cable Corridor which will be negligible.

6.6.17 The number of **significant** visual effects during decommissioning will be smaller than at construction due to the proposed mitigation planting, which will additionally screen or filter the views, reducing the impact of these relative to construction.

Cumulative Effects

6.6.18 A list of cumulative schemes considered to have potential to result in significant cumulative landscape and visual effects was identified in **Chapter 10: Landscape and Visual Amenity** of this ES **[EN010154/APP/6.1]**. The cumulative schemes considered are those either of similar typology to the Proposed Development or other typologies (such as residential developments) that are located adjacent.

6.6.19 The cumulative landscape impacts can change either the physical fabric or character of the landscape, or any special values attached to it.

6.6.20 The cumulative impacts on visual amenity can be caused by combined visibility, when the Proposed Development and cumulative scheme are visible at the same time, or sequential impacts, when the observer has to move to another viewpoint to see different developments.

6.6.21 The following significant Cumulative Effects are anticipated for Landscape and Visual receptors, where the magnitude of effect is higher than that of the Proposed Development in isolation. During construction:

a. **Major Adverse (significant)** landscape Cumulative Effects on the North Kesteven District landscape sub-area Witham and Brant Vales due to the noticeable increase in extent over which changes to the landscape character would be perceived during construction and changes to the visual amenity of users of the Viking Way (PRoW Cole/2/1 and BooG/2/2) as a result of the Proposed Development together with ID95 Application Reference: PL/0087/23. North Hykeham Relief Road.

b. **Moderate Adverse (significant)** landscape Cumulative Effects on the North Kesteven landscape sub-area Limestone Heath due to the noticeable increase in extent over which changes to the landscape character would be perceived during construction as a result of the Proposed Development together with ID63 Application Reference: EN010149. Springwell Energy Farm and ID103 Application Reference: EN0110016. Leoda Solar Farm.

6.6.22 During operation (year 15) it is considered there would be no notable difference between the landscape and visual effects of the Proposed Development, and the cumulative landscape and visual effects of the Proposed Development.

6.6.23 As the Proposed Development has an estimated design life of 60 years, it is not possible to predict the effects of decommissioning of the Proposed Development. Broadly, however, the effects of decommissioning are likely to be similar to, but less than the effects experienced during construction, albeit with the benefit of established perimeter planting.

6.7 Noise and Vibration

6.7.1 **Chapter 11: Noise and Vibration** of the ES **[EN010154/APP/6.1]** presents the findings of an assessment of the likely significant effects of the Proposed Development in relation to noise and vibration.

Baseline

6.7.2 Baseline noise monitoring was carried out to establish the existing noise climate in the area. Sensitive receptors which have the potential to be affected by the Proposed Development were identified.

Embedded Design Measures

6.7.3 Embedded mitigation for construction and decommissioning includes the use of best practical means identified in the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]** and the **Framework Decommissioning Management Plan [EN010154/APP/7.9]**, such as the sequential start-up of plant and vehicles rather than all together and regular plant maintenance.

6.7.4 Appropriate routing of construction and decommissioning traffic on public roads and along access tracks is detailed in the **Framework Construction Traffic Management Plan (CTMP) [EN010154/APP/7.18]**.

6.7.5 Where practicable, drilling works under crossing to lay cables will be avoided within 200m (the distance at which significant effects are predicted at night) of residential receptors. Where drilling activities may occur within 200m of sensitive receptors, the option for open cut cable laying will be explored as an alternative to drilling. The potential for the use of quieter equipment than listed in the ES will also be explored.

6.7.6 A construction noise monitoring scheme shall be developed alongside a communication strategy and noise complaint system. Voluntary consent under Section 61 of the Control of Pollution Act 1974 will be sought prior to noisy work required outside core work hours being carried out to demonstrate that noise and vibration has been minimised as far as reasonably practicable.

6.7.7 During operation, embedded mitigation measures include plant selection and design layout to minimise noise at receptors, with noise generating plant located away from sensitive receptors, such that noise emissions are less impactful. The illustrative site layout has been designed to locate Solar Stations at least 200m from residential properties.

6.7.8 The Applicant has made a commitment that the actual noise at sensitive receptors will be no higher than the noise levels presented in the ES. This is secured in a DCO requirement.

Additional Mitigation

6.7.9 Where significant noise effects are identified (at one residential receptor) prior to mitigation being put in place, additional measures in the form of temporary, mobile acoustic screening would be implemented. With the implementation of this screening, noise levels would be reduced such that they are not significant.

Assessment of Effects

6.7.10 The duration of any construction and decommissioning noise effects is considered to be temporary, short-term, with no permanent residual effect once works are completed. The assessment considers that working hours will be 07:00 to 19:00 Monday to Friday, and 09:00 to 18:00 on Saturday (except for any percussive piling works within 400m of residential properties). No HGV

deliveries or works likely to generate substantial noise will be undertaken during the hours of 13:00 to 18:00 on a Saturday. Working hours will be year-round, although there is the possibility of shorter hours in the months with reduced daylight hours. There will be no works on Sundays and Bank Holidays. Some works activities may need to occur out of these hours/times due to activities requiring to be undertaken continuously (such as HDD and cable jointing) however will be subject to restrictions outlined in the **Framework CEMP [EN010154/APP/7.7]**. Some noisy activities are restricted during early hours near residential properties, as described in **Chapter 11: Noise and Vibration [EN010154/APP/6.1]**.

6.7.11 Construction and decommissioning noise levels will be controlled through implementation of the detailed Construction Environmental Management Plan and Decommissioning Environmental Management Plan.

6.7.12 Noise generated by typical construction and decommissioning activities during core work hours are not significant with the exception of Housham Grange (R35), which may experience temporary **significant** construction noise effects prior to additional mitigation. This is likely to be an overestimate based on the current assumption of the number of equipment working simultaneously all adjacent to this property. Due to the transient nature of construction, which will progress field to field and the short term nature of the effect the implementation of additional mitigation (as mentioned above), the effect will be not significant.

6.7.13 The installation of cabling using horizontal directional drilling (HDD) to avoid surface obstacles is likely to require continuous work outside the core work periods during the construction phase. Noise calculations indicate that one sensitive location has the potential to result in significant noise effects if drilling activities extend into the night-time period. The hierarchy of mitigation measures for drilling activities will ensure that drilling activity noise effects will be reduced as far as reasonably practicable. This hierarchy includes maximising the distance from drill entry or exit pits to sensitive receptors and the use of acoustic fencing, if required. As such, it is anticipated that embedded mitigation measures can be suitably adopted that noise effects due to drilling activities are considered to be not significant.

6.7.14 Driven piling for solar PV mounting structures (if undertaken) may result in **moderate adverse significant** vibration effects at Grange Cottage (R26), Housham Grange (R35), and 19 Park Crescent (R50). However, the predictions are considered cautious as they are currently based on large percussive piling rigs due to unavailability of vibration data for the mini rigs used for solar PV structures. For all other receptors, the distance between sensitive receptors and locations where high vibration generating construction and decommissioning activities will occur is such that construction induced vibration effects are not significant. If driven piling is to be undertaken, a commitment is included in the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]** to undertake a construction vibration risk assessment such that significant effects would be avoided. If it is unavoidable, the risk assessment would focus on limiting the exposure of

nearby receptors to levels of vibration exceeding the relevant thresholds as far as reasonably practicable. Furthermore, the timing of any driven piling within 60m to residential receptors will be delayed until after 10am to avoid more sensitive time periods.

6.7.15 For the assessment of operational noise, the typical background noise levels at sensitive receptors have been defined from the night-time period, which provide the lowest levels. During operation, plant will operate continuously so there will not be any noticeable impulsive or intermittent characteristics from noise emissions. For all receptors, operational noise levels may be perceptible at some receptors; however, noise would not be of sufficient magnitude to result in significant effects on health and quality of life. Consequently, predicted noise levels of operational solar plant at the nearest receptors are **not significant**. All reasonable measures to reduce noise have been adopted through provision of embedded mitigation secured in the **Framework Operational Environmental Management Plan [EN010154/APP/7.8]** to demonstrate compliance with requirements set out in the Noise Policy Statement for England.

6.7.16 Since the assessment has been based on equipment that is typically noisier than most equipment currently available on the market, the Applicant will continue to explore ways to reduce the noise effects during construction and operation at key receptors during the procurement of equipment during detailed design, post consent.

Cumulative Effects

6.7.17 Of the shortlisted developments listed in **Chapter 15: Cumulative Effects and Interactions** of this ES **[EN010154/APP/6.1]**, ten other developments are considered to have the potential for Cumulative Effects when considered alongside the Proposed Development due to being located within the 500m Zone of Influence for noise and vibration. Following a detailed Cumulative Effects assessment, it is concluded that no significant Cumulative Effects will arise as a result of the Proposed Development, together with the other ten cumulative schemes.

6.8 Socio-Economics and Land Use

6.8.1 **Chapter 12: Socio-Economics and Land Use** of this ES **[EN010154/APP/6.1]** presents the findings of an assessment of the likely significant effects of the Proposed Development in relation to socio-economics and land use, including agricultural soils.

Baseline

Population and Labour Force

6.8.2 The Study Area for the population and labour force baseline is the Lower Layer Super Output Areas (LSOAs)[4] that comprise the 60-minute drive time area.

[4] LSOAs are a type of small geographical area representing approximately 1,500 people.

Comparator geographies include the East Midlands region and England and Wales as a whole.

6.8.3 According to the Office for National Statistics (ONS) Mid-Year Population Estimates, in 2021, the residential population of the Study Area was 4,794,438. Of residents within the Study Area, 61.3% were of working age and 20% were 65+. The population is on average older compared to the East Midlands and England and Wales.

6.8.4 According to the Annual Population Survey, in 2023-24 the unemployment rate among working age residents in the Study Area was 4.5%, higher than the rate recorded for the East Midlands (4.1%) but lower than the rate recorded for England and Wales (3.8%). 36.6% of working age residents in 2023 within the Study Area had a degree level qualification or higher. This is lower than the rates recorded for the East Midlands (40.2%) and England and Wales (46.6%). The proportion of residents in the Study Area with no qualifications was 9.7%, which is higher than rates recorded for East Midlands (7.7%) and England and Wales (6.3%).

6.8.5 Based on the most recently available Business Register and Employment Survey data published in 2021 on employment by group, the highest levels of employment in the Study Area are recorded in health (14.4% of employment), manufacturing (12.8%), education (8.9%) and retail (8.5%) sectors.

Local receptors

Local Accommodation

6.8.6 As of 2025, there are approximately 1,714 rooms in hotel, bed and breakfast and inns accommodation within a 30-minute drive of the DCO Site and 7,606 rooms within a 60-minute drive of the DCO Site.

PRoW

6.8.7 There are 36 PRoW located within the Principal Site, as well as 27 PRoW which run alongside the boundary or are in close proximity to the DCO Site. Five further PRoW intersect the Cable Corridor. There are also seven existing permissive paths located within the existing Principal Site as shown on **Figure 2**.

Residential Properties, Businesses and Community Facilities

6.8.8 Residential properties are primarily located in the villages/landscape features surrounding the DCO Site and Cable Corridor, including Thorpe on the Hill, Morton, Witham St Hughs, Thurlby, Haddington, Aubourn, Bassingham, Norton Disney, Boothby Graffoe and Coleby. Businesses are also predominantly located in the villages/landscape features surrounding the DCO Site. There are four farms within the Principal Site, as well as another 11 within 500m of the DCO Site.

6.8.9 Within 2km of the Principal Site, there are 16 identified community facilities including churches, primary schools, village halls and pubs. An additional nine community facilities are identified within 2km of the Cable Corridor.

Agricultural Land

6.8.10 The Principal Site has around 1050ha of agricultural land, of which approximately 280ha is best and most versatile (BMV) land of subgrade 3a. Field surveys did not identify soils of higher Grades 1 and 2. The design has been developed to avoid BMV land as much as practicable, with 69 per cent of the Proposed Development's physical infrastructure proposed to be built on non-BMV land.

Embedded Design Measures

6.8.11 Primary mitigation measures are embedded within the Proposed Development, as set out in the respective chapters, to reduce other construction and operational effects (such as noise, air quality, transport, and landscape and visual) which in turn will mitigate the effects on the local community and existing facilities from a socio-economic and land use perspective.

6.8.12 To mitigate construction impacts, above ground infrastructure has been positioned to avoid best and most versatile agricultural land as far as practicable, solar panels have been designed to facilitate sheep grazing beneath panels, noise emitting equipment has been located away from residential receptors as far as practicable and additional planting has been incorporated to integrate the Proposed Development into the local area. Closures of PRoW have been avoided where possible and diversions have been localised where practicable. Additional permissive paths are proposed to further enhance the local connectivity. An optimal access strategy for construction, operation and decommissioning to mitigate effects relating to transport has been developed to mitigate effects on the local community and existing facilities from a socio-economic and land use perspective. The **Framework Construction Environmental Management Plan [EN010154/APP/7.7]** formalises construction-related mitigation. Furthermore, a **Framework Construction Traffic Management Plan (CTMP) [EN010154/APP/7.18]** has been developed as part of the DCO application and will contain mitigation to avoid and/or reduce impacts relating to construction traffic. A **Framework Soil Management Plan [EN010154/APP/7.10]** is included as part of the DCO application and contains industry standard good practice mitigation measures to reduce impacts on soil.

6.8.13 A **Framework Landscape and Ecological Management Plan (LEMP) [EN010154/APP/7.15]** has been prepared to accompany the DCO application, setting out how land will be managed during operation.

6.8.14 A **Framework Decommissioning Environmental Management Plan [EN010154/APP/7.9]** outlines the measures that will mitigate effects related to decommissioning of the Proposed Development.

Assessment of Effects

Construction Effects

Employment

6.8.15 The estimated construction period is expected to take approximately 24 to 30 months (the target programme) (for the purpose of the assessment a 24 month programme has been used to represent activity on site being most intense) and is expected to require a maximum of up to 600 gross direct full-time employment (FTE) construction jobs on-site per day during this construction period and an average of 350 gross direct FTE jobs on-site per day during the construction period. Taking into account leakage (% of jobs that benefit those residents outside of the Study Area area), displacement (% of jobs that account for a reduction in related jobs in the Study Area) and the multiplier (further economic activity associated with the additional local income, supplier purchase and longer-term development effects), it is anticipated that the Proposed Development will support, on average, 394 total net jobs per annum during the construction period. Of these, 177 jobs per annum will be expected to be taken up by residents within the Study Area. The impact of construction employment generation has been assessed as having a **minor beneficial** effect. This is considered not significant.

Gross Value Added (GVA)

6.8.16 By applying the average gross direct value added per construction worker in the area to the total number of construction workers generated from the Proposed Development gives the total GVA arising from the construction period, calculated to be £27.4 million, of which £12.3 million is likely to be in the Study Area. The impact of direct GVA generation was assessed as having a **minor beneficial** effect on the Study Area economy. This is not significant.

Temporary Worker Accommodation

6.8.17 Based on a worst-case scenario whereby all 330 peak workers need accommodation, the analysis indicates that during peak seasonal demand (July), the workforce could be accommodated in the hotel, bed and breakfast and inns accommodation sector within a 60-minute drive time area from the DCO Site with 811 rooms left over. In a 30-minute drive time radius, the peak workforce couldn't be accommodated, requiring an extra 73 rooms. It can also be noted that this analysis only takes into consideration the hotel, bed and breakfast and inns accommodation sector. There are also alternative accommodations (such as Airbnb, serviced apartments, etc.) that could also cater for a portion of any demand generated and therefore further mitigate any impact on accommodation provision. It is considered that there would be **no effect** on the hotels, bed and breakfasts and inns accommodation sector, as approximately 45% of the workforce will commute to the DCO Site.

PRoW

6.8.18 The Proposed Development would require minor permanent diversions of sections of three PRoW (these are shown on **Figure 2**). The additional length

to journeys for users would be approximately 100m or less. The impact on PRoW has been assessed as **negligible** and therefore not significant. All other PRoW are expected to experience minimal to no impacts during construction and will stay open. Therefore, impacts on these PRoW have been assessed as **negligible** and not significant.

Recreational Receptors and Visitor Attractions

6.8.19 Taking into account the residual effects assessment results of the air quality, noise and vibration, traffic and transport and visual assessments relating to construction activities, no visitor attraction, recreational facility or area is identified to have significant residual effects and as such this represents a **negligible** effect which is **not significant.**

Agricultural Land

6.8.20 Impacts on the temporary use (short-term or long-term) of agriculture land have been assessed as **not significant**, as the majority of agricultural land will be returned to farming upon decommissioning or upon completion of construction. The land is not lost permanently, not will the agricultural land classification be changed. The only potential permanent losses of agricultural land are areas of planting introduced as part of the Proposed Development.

Residential Properties, Business Premises, and Community Facilities

6.8.21 Taking into account the residual effects assessment results of the air quality, noise and vibration, traffic and transport and visual assessments relating to the construction activities, there are no receptors as defined in this assessment that would experience a significant effect on their amenity during construction, and as such there would be **no effect.**

Development Land

6.8.22 Although there are some planning applications that intersect the DCO Site, these will not be affected by the land required for the Proposed Development. It is expected that all other developments will be able to go ahead and solutions will be found so that the Proposed Development and other developments can be constructed. Potential effects on development land during construction of the Proposed Development are anticipated to be negligible and thus **not significant** is expected to occur.

Operational Effects

Employment

6.8.23 It is estimated that operation of the Proposed Development will generate four jobs, required to maintain and operate the Proposed Development. There are expected to be no job losses as a result of the removal of agricultural land, instead it is expected that when the rent revenues from the change in land use start, additional jobs will be created as land owners diversify their land further with the underlying stability of rental income from the Proposed Development. This effect has therefore been assessed as **neutral** and not significant.

PRoW

6.8.24 The permanent diversions of sections of three PRoW would remain during the operation and maintenance phase. As outlined during the construction phase, the permanent diversion of the PRoW would result in a **negligible** effect. This is considered not significant. Outside of this, there would be no additional effects on the rest of the PRoW outside of those identified in construction and therefore there would be **no effect** on existing PRoW.

6.8.25 The Proposed Development will also create a network of new permissive paths across the Principal Site totalling approximately 9.5km, providing routes across the Principal Site and enhancing the recreational value of the DCO Site. Although these are not formal rights of way with indefinite protection (due to the landowner having the ability to remove the permissive path following the decommissioning phase), during operation they will provide safe routes for the use of local residents in the area. They will also provide connections between existing PRoW resulting in some reduction to local journey lengths. Taking this into account, the impact on users of PRoW from the provision has been assessed as permanent low beneficial which results in a **minor beneficial** effect. This is considered **not significant**.

Recreational Receptors and Visitor Attractions

6.8.26 Taking into account the residual effects assessment results of the air quality, noise and vibration, traffic and transport and visual assessments relating to operational activities, no visitor attraction, recreational facility or area is identified to have significant residual effects and as such this represents a **negligible** effect which is **not significant.**

Agricultural Land

6.8.27 Effects on agricultural land would occur as long-term effects arising from the construction of the Proposed Development and hence have been assessed in the construction phase. The land is not lost permanently and the agricultural land classification is not changed; the land is rested from intensive agricultural production which is expected to allow it to be returned in a better state than it is now, leading to a **minor beneficial (not significant)** effect.

Residential Properties, Business Premises, and Community Facilities

6.8.28 Taking into account the residual effects assessment results of the air quality, noise and vibration, traffic and transport and visual assessments relating to operational activities, there are no receptors as defined in this assessment that would experience a significant effect on their amenity during operation, and as such there would be **no effect**.

Development Land

6.8.29 Although some planning applications intersect the DCO Site, these will not be affected by the land required for the operation of the Proposed Development. The **Mineral Safeguarding Assessment** presented in **Appendix 12-C** of the ES **[EN010154/APP/6.3]** concludes that no sterilisation of mineral resources will occur due to the operation of the Proposed Development. The effect from

the Proposed Development during operation on development land is therefore assessed to be **negligible** (**not significant**).

Decommissioning Effects

Employment

6.8.30 It is assumed based on the activities taking place that a similar (probably slightly fewer) number of jobs required for constructing the Proposed Development will also be required for decommissioning. Therefore, employment impacts are assessed as **minor beneficial** and **not significant**. Employment loss of the jobs required during the operation of the Proposed Development is assessed as **negligible** and **not significant**.

PRoW

6.8.31 It is assumed that temporary impacts on PRoW during decommissioning will be similar to that of construction, and therefore have been assessed as **negligible** and **not significant**. The permissive paths introduced as part of the Proposed Development would be removed at this stage.

Recreational Receptors and Visitor Attractions

6.8.32 The potential changes to views during decommissioning of the Proposed Development could impact on the amenity of visitor attractions and recreational facilities in the local area. However, the magnitude of impact on the amenity of visitor attractions and recreational facilities during decommissioning is assessed to be very low, this represents a **negligible** effect on the amenity of visitor attractions and recreational facilities, which is **not significant**.

Agricultural Land

6.8.33 Given the short time frame of any disruption to farming activities during decommissioning activities and the return of the DCO Site to solely farming practices following completion of the decommissioning, impacts have been assessed as **negligible** and **not significant**.

Residential Properties, Business Premises, and Community Facilities

6.8.34 there are no receptors as defined in this assessment that would experience a significant effect on their amenity during decommissioning, and as such there would be no effect.

Development Land

6.8.35 Although there are some planning applications that intersect the DCO Site, these will not be affected by the land required for the decommissioning of the Proposed Development. It is expected that other developments will be able to go ahead and solutions will be found so that the Proposed Development can be decommissioned and other developments continued.

6.8.36 The effect from the Proposed Development during decommissioning on development land is therefore assessed to be **negligible** and **not significant**.

Cumulative Effects

6.8.37 The combined effect of the cumulative proposed developments may lead to additional employment in the Study Area. Furthermore, the combined effect of cumulative developments and the Proposed Development may lead to increase demand in the accommodation sector from the peak construction/decommissioning workforce if multiple schemes' construction/decommissioning phases were to overlap. No significant Cumulative Effects were found.

6.8.38 With regard to agricultural land, as soil is a natural resource, the Cumulative Effects assessment for land use was extended to consider other solar Nationally Significant Infrastructure Projects (NSIP) in the County of Lincolnshire. The amount of agricultural land use, specifically best and most versatile land (approximately 1.4% of BMV land is anticipated to be taken up by these Projects) is small when compared to the total amount of farmland in the county and in England. Accounting for the fact that the majority of this land will be returned to farming once the solar NSIPs are decommissioned, the overall impact on best and most versatile agricultural land is anticipated to be minimal and therefore significant Cumulative Effects are not anticipated.

6.9 Traffic and Transport

6.9.1 **Chapter 13: Traffic and Transport** of this ES **[EN010154/APP/6.1]** identifies and proposes measures to address the potential impacts and likely significant effects of the Proposed Development on traffic and transport, during the construction, operation, and decommissioning phases of the Proposed Development. An assessment of the Proposed Development has been undertaken which is based on a daily peak of 600 construction workers including 575 workers for the Principal Site and 25 workers for the Cable Corridor. For the purposes of the ES, it has been assumed that all 600 construction workers would travel to/ from the Principal Site to provide a worst-case assessment.

6.9.2 The main construction phase for the Proposed Development is currently predicted to last for a minimum of 24 months between 2031 and 2033, with the construction peak in terms of activity and vehicle movements expected to take place in 2032. Whilst the construction programme may extend slightly beyond 24 months (to 30 months if construction is implemented in phases), the approach taken in the traffic and transport chapter offers a reasonable worst-case assessment, that would generate the highest number of peak hour and daily road trips on the local network.

6.9.3 There is expected to be a daily peak of 575 construction workers, 25 two-way light goods vehicle (LGV) trips and 50 two-way HGV trips associated with the Principal Site. The associated vehicle trips will be split across 13 access points of the Principal Site including four accesses on Haddington Lane, two accesses on each of Fosse Lane, Bassingham Road and Clay Lane, and one access on each of The Avenue, Stone Lane and Moor Lane. There will also be a vehicle crossover on Stone Lane.

6.9.4 There is also expected to be a daily peak of 25 construction workers, 12 two-way LGV trips and 16 two-way HGV trips associated with the Cable Corridor. The associated vehicle trips will be split across seven accesses and use various routes to the east of the Principal Site including the A15 and Broughton Lane, Grantham Road, B1202 Heath Lane, Green Man Road and Hill Rise depending on access point and crossover locations. A full, detailed assessment has been carried out for the Cable Corridor within the ES.

6.9.5 The Study Area has been defined to include areas of the highways and Public Rights of Way (PRoW) networks which, based on experience of other similar large scale solar projects, are considered to be Traffic and Transport features likely to be at risk from possible direct and indirect impacts that might arise from the Proposed Development.

Baseline

6.9.6 The DCO Site encompasses a large area of predominantly agricultural land located to the north and south of the strategic trunk A-road, the A46, which runs in a northeast-southwest alignment through the DCO Site. To the north-east, the A46 provides access to Lincoln as well as further connections with the A57, A15 and A158. To the south west the A46 provides links to Newark-on-Trent as well as further connections with the A1, A17 and A617. Within the vicinity of the Principal Site, the highways are mostly local rural roads.

6.9.7 The eastern extent of the Cable Corridor is located a short distance to the west of the A15 which is expected to provide a key route for construction vehicles travelling to/ from the Cable Corridor.

6.9.8 Due to the location of the Principal Site in rural Lincolnshire, there is limited footway provision in the surrounding area. Footways are limited to the settlements that surround the Principal Site. However, there are a number of PRoW within, or in close proximity to the Principal Site (see **Section 6.8** and **Figure 2**).

6.9.9 There are no on- or off-road dedicated / marked cycling facilities within the immediate vicinity of the Principal Site. However, the surrounding rural local roads may be attractive to some cyclists as they are relatively lightly trafficked.

6.9.10 Within the vicinity of the proposed Principal Site boundary there are several bus routes which pass through surrounding local settlements. The closest bus stops served by the bus route 16 within close proximity to the Principal Site are Old Haddington Lane (on the A46) and Thurlby Telephone Box (on Bassingham Road).

6.9.11 The closest railway station is Swinderby station, located approximately 2km to the west of the northern extent of the Principal Site. This station provides access to services between Nottingham and Lincoln, and Leicester and Grimsby, with one service per hour.

Embedded Design Measures

6.9.12 The Proposed Development will minimise construction impacts through the following embedded mitigation measures, with further detail provided in the ES:

a. Implementation of a **Framework Construction Traffic Management Plan [EN010154/APP/7.18]** and detailed Construction Environmental Management Plan;

b. Providing suitable points of access for construction vehicles;

c. Delivering internal construction routes through the Principal Site;

d. Minimising closures to PRoW and permissive paths and providing diversions where applicable. The diversion routes will be agreed with the local authorities prior to construction, and a **Framework PRoWMP [EN010154/APP/7.14]** is submitted as part of the DCO application which contains further measures for PRoW and permissive path management;;

e. Managing areas where the proposed construction route crosses any existing local access roads;

f. Restricting HGV movements to certain routes (see **Figure 13-4** of the ES **[EN010154/APP/6.2])**;

g. Reducing HGV deliveries during certain times of the day;

h. Implementing a Delivery Management System to control HGV deliveries;

i. Implementing a monitoring system to ensure compliance with HGV routes;

j. Developing a communications strategy and regular meetings with contractors to review and address any issues associated with travel to/ from the Proposed Development;

k. Implementing Temporary Traffic Management (TTM) where required;

l. Encouraging local construction staff to car share to reduce single occupancy car trips;

m. Implementing a shuttle service to transfer staff to/ from nearby catchment areas;

n. Implementing minibuses to transfer staff internally within the Principal Site as required;

o. Provision of a main construction compound for the Principal Site close to the A46. There are also expected to be five smaller secondary compounds across the Principal Site;

p. Providing sufficient on-site car parking within the construction compounds across the DCO Site to accommodate all parking on-site;

q. Positioning of suitably qualified banksmen at the proposed accesses;

r. Vegetation clearance at the proposed access points where required to achieve appropriate levels of visibility;

s. Providing sufficient cycle parking spaces within the Principal Site to encourage staff to travel by bicycle where feasible;

t. Employing a specialised haulage service to obtain the necessary permits and management required to accommodate abnormal loads; and

u. A Stage 1 Road Safety Audit will be carried out.

Assessment of Effects

6.9.13 The following potential impacts have been considered as part of the EIA for the Proposed Development during the construction and decommissioning phases:

a. Severance of communities;

b. Pedestrian delay (incorporating delay to all non-motorised users);

c. Non-motorised user amenity;

d. Fear and intimidation on and by road users;

e. Road vehicle driver and passenger delay;

f. Road user and pedestrian safety; and

g. Large loads.

6.9.14 There are not expected to be any Hazardous and Dangerous Loads associated with the Proposed Development, therefore Hazardous and Dangerous Loads have not been considered further in the assessment.

6.9.15 Through the EIA Scoping process, the Planning Inspectorate agreed that the potential impacts listed above do not need to be considered in detail during the operation (and maintenance) phase due to the low number of operational traffic anticipated.

6.9.16 To determine the likely effects of the Proposed Development, the following scenarios have been considered:

a. Baseline (2022, 2023 and 2025) – AM, PM and Daily; and

b. Peak Construction Year (2032) With and Without Development – AM, PM and Daily.

6.9.17 The results of the assessment detailed in **Chapter 13: Traffic and Transport** of this ES **[EN010154/APP/6.1]** showed that the construction period impacts of the Principal Site are **negligible** or **minor adverse** across all receptors and categories of impact. The effect will be no greater than this during decommissioning, and likely less, due to the fewer trips, smaller workforce, and shorter duration expected for this phase. The effect during operation is predicted to be negligible, due to the low level of traffic anticipated during this phase, which will mainly be visits from maintenance workers alongside the 4 full time equivalent workers on site.

Cumulative Effects

6.9.18 An assessment of Cumulative Effects between the Proposed Development during the peak construction phase (2032) and other proposed and committed projects was conducted. In summary, the cumulative construction effects expected on Traffic and Transport receptors within the Study Area are likely to be **Slight Adverse** or **Neutral** (**Not Significant**).

6.9.19 Cumulative Effects during the operational phase of the Proposed Development have been scoped out of this assessment as the number of trips associated with the operational phase of the Proposed Development is expected to be minimal and therefore, not expected to result in potential for Cumulative Effects.

6.9.20 As the Proposed Development has an estimated design life of 60 years, it is not possible to predict which potential developments may need to be considered (e.g. those under construction, recently completed and operational or in the process of being decommissioned) at the same time as the Proposed Development is being decommissioned. Broadly, however, the effects of decommissioning are likely to be similar to and no worse than those identified during construction. It is therefore not expected that any significant Cumulative Effects will occur during this phase.

6.10 Other Environmental Topics

Air Quality

6.10.1 **Chapter 14: Other Environmental Topics** of this ES **[EN010154/APP/6.1]** Section 14.2 presents the findings of an assessment of the likely significant effects on local air quality as a result of the Proposed Development. This section considers the potential for activities to change local air quality during the construction, operation, and decommissioning phases of the Proposed Development. The guidance and methods that have been used are widely applied in England to assess the likelihood of emissions to air affecting the health and amenity of the local community or conditions at designated ecological sites.

6.10.2 Air quality effects from construction and operational road traffic were considered against the Institute of Air Quality Management (Ref 4) and Environmental Protection Act (Ref 5) screening criteria and identified as not requiring detailed assessment due to their very low levels. In addition, there are no emission sources from the Proposed Development during its operation and as such, the operational phase assessment was scoped out.

Baseline

6.10.3 There are no Air Quality Management Areas (AQMAs) within the administrative area of North Kesteven District Council and air quality is generally considered to be good.

Embedded Design Measures

6.10.4 Standard good practice measures to manage the impacts from dust generation are included in the **Framework Construction Environmental Management Plan [EN010154/APP/7.7].** These include measures such as avoiding stockpiling soil and materials near to the DCO Site Boundary, using water to damp down soil if earthworks are undertaken in dry weather, and covering any dusty materials being transported on or off-site. These measures have a strong track record of controlling offsite effects of emissions to air effectively, where they have been applied to other construction sites over the last 20 years. The nature of the activities required to construct, operate and decommission the Proposed Development have limited potential to generate emissions to air and with the proposed good practice control measures there should be no change to the future standard of air quality experienced by local communities, with or without the Proposed Development.

Assessment of Effects

Construction Effects

6.10.5 A Construction Dust Risk Assessment was carried out. The DCO Site was identified as having a "medium risk" of impacts relating to dust soiling and human health effects. With the implementation of the standard good practice measures during construction, the impact of the construction phase would be **negligible**. The standard good practice measures for implementation are included in the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]**. The effects of dust on health and amenity would be not significant.

6.10.6 The construction phase traffic was estimated to be below relevant screening criteria for assessment (Ref 6). As such, a construction phase air quality assessment was scoped out from further consideration, with the effects inherently negligible.

Operational Effects

6.10.7 There are no emission sources from the operation of the Proposed Development. In addition, the operational phase traffic is considered to be limited. As such, an operational phase air quality assessment was scoped out from further consideration.

Decommissioning Effects

6.10.8 The air quality effects during decommissioning will be similar to, if not less than, the construction phase. Decommissioning is expected to be shorter in duration, less intensive and with fewer road trips. Any impacts on health and amenity from air quality would be not significant.

Cumulative Effects

6.10.9 No cumulative impacts upon Air Quality are envisaged at this point as it is anticipated that any cumulative schemes will also be required to mitigate for construction phase impacts on air quality.

Glint and Glare

6.10.10 **Chapter 14: Other Environmental Topics** of this ES **[EN010154/APP/6.1]** Section 14.3 provides the results of the Glint and Glare assessment. Glint and Glare is essentially the unwanted reflection of sunlight from reflective surfaces. 'Glint' refers to a momentary flash of light and 'Glare' refers to a continuous source of bright light. The full assessment on Glint and Glare is available in **Appendix 14-D: Glint and Glare Assessment in this ES [EN010154/APP/6.3]**.

Baseline

6.10.11 Several potential receptors are present in the vicinity of the Principal Site. These include residents, road vehicles, railway users, users of bridleways and aircraft.

6.10.12 A 1km Study Area around the extent of the Principal Site was considered for the assessment of ground-base (residential, road, rail and bridleway) receptors, whilst a 30km Study Area was considered for aviation receptors.

Embedded Design Measures

6.10.13 The preliminary Glint and Glare assessment required mitigation measures in the form of hedge and tree planting to provide screening due to the High and Medium impacts found during the desktop visibility analysis at 67 residential receptors, 65 bridleway receptors and 156 road receptors and the Low impacts at 111 residential receptors, 14 bridleway receptors and 59 road receptors.

6.10.14 Where hedge and tree planting has been identified as required to mitigate glint and glare, this has been included within the landscape planting proposals presented in the **Framework Landscape and Ecological Management Plan (LEMP) [EN010154/APP/7.15]**. The Framework LEMP specifies, if and where required, that hedgerows will be infilled and maintained to a height of at least the height of the solar PV panels (which will be up to 3.5m) and will screen all views of the Proposed Development where Glint and Glare is possible at the identified receptors.

Assessment of Effects

6.10.15 Detailed modelling (geometric analysis) was conducted at 238 residential receptors, at 243 points along 44 roads within the study area, at 20 points along one rail receptor and at 82 bridleway receptors. In addition, geometric analysis was conducted at 12 runway approach paths and two Air Traffic Control Towers (ATCT) at RAF Waddington, Peacocks Farm, South Hykeham Airfield, South Scarle Airfield and Blackmoor Farm.

6.10.16 The modelled impact at each receptor does not take into consideration the local vegetation or other obstacles that may be present and assumes that there is no cloud at any point in the year. It is therefore a conservative and precautionary assessment, likely to overestimate the actual impacts associated with the Principal Site.

6.10.17 The desktop assessment undertaken for the Proposed Development for Glint and Glare concluded that solar reflections would be possible at:

a. Residential receptors;
b. Road receptors;
c. Bridleway users
d. Rail receptors; and
e. Aviation receptors

6.10.18 Following implementation of the proposed planting in the Framework Lansdscape and Ecological Management Plan, the Glint and Glare assessment for the Proposed Development concluded that no significant effects are anticipated. The proposed planting is predicted to fully mitigate the potential for glint and glare.

Cumulative Effects

6.10.19 It is assumed that other nearby solar schemes that are included within **Chapter 15: Cumulative Effects and Interactions** of this ES **[EN010154/APP/6.1]** will be designed to ensure that effective screening to prevent Glint and Glare effects is implemented. Therefore, Cumulative Effects are considered unlikely to arise for Glint and Glare.

Ground Conditions

Baseline

6.10.20 Section 14.4 of **Chapter 14: Other Environmental Topics** of the ES **[EN010154/APP/6.1]** addresses the effects of the Proposed Development on ground conditions including geology, hydrogeology and ground contamination of the DCO Site and surrounding area. The assessment considers the effects during the decommissioning, construction and operation phases of the Proposed Development. The need for mitigation measures and any monitoring that may be required during the construction phase is also considered and, where appropriate, any residual effects from both the construction and operational phases of the Proposed Development are indicated.

6.10.21 A review of published geological maps indicates that the DCO Site is underlain by superficial deposits of Alluvium, and sands and gravels, which are classified as Secondary A aquifers by the Environment Agency. The bedrock geology is Mudstone and Limestone, which are classified as Secondary B aquifers and Principal aquifers respectively by the Environment Agency.

6.10.22 The Principal Site does not lie within a Source Protection Zone (these zones show the extent of catchments for groundwater sources used for supplying public drinking water), although part of the Cable Run Corridor by Coleby is within a Zone 3 (Total Catchment).

6.10.23 The River Witham and River Brant both cross either the Principal Site or the Cable Corridor.

6.10.24 The DCO Site consists of fields mainly under arable production, interspersed with individual trees, hedgerows and wooded areas. Some farm buildings are located on-site. The DCO Site was undeveloped land/agricultural fields since the earliest available historical maps (late 1800's). Potential contaminative sources identified on-site are former pits which may have been filled with a variety of waste materials; and fuels and agricultural materials storage associated with current farm buildings and yards.

6.10.25 The DCO Site is shown as having a low risk of unexploded ordnance (UXO) on the freely available mapping; however the central part of the Principal Site lies within land formerly occupied by the Swinderby Airfield, which is considered a wartime site of interest.

Embedded Design Measures

6.10.26 Several environmental mitigation measures are expected to be employed as standard to minimise impacts to both human health and controlled waters during the construction phase of the Proposed Development as detailed in the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]**. Following the implementation of these mitigation measures, the remaining potential effects from impacts include the risk of disturbance of UXO and the risk from disturbance of potential contamination.

6.10.27 These risks can be mitigated through the commissioning of detailed UXO assessment prior to the commencement of any intrusive works; and a targeted Site Investigation and Risk Assessment, with proposals within both the UXO and the Risk Assessment reports being taken into consideration.

Assessment of Effects

6.10.28 Following the implementation of these mitigation measures, it is anticipated that all construction effects on ground conditions will be reduced to negligible. Therefore, no significant effects to ground conditions are expected through the construction works associated with the Proposed Development.

6.10.29 As the effects to ground conditions resulting from the operation of the Proposed Development were considered to be negligible pre-mitigation, the residual effects associated with the completed and operational Proposed Development are also anticipated to be negligible. Therefore, no significant effects to ground conditions are expected once the Proposed Development is completed.

Cumulative Effects

6.10.30 Given the negligible significance of the Proposed Development on Ground Conditions, there is no potential for the Proposed Development to contribute to significant cumulative schemes.

Materials and Waste

Baseline

6.10.31 To inform the assessment, the national and regional availability (consumption/sales) of key construction materials, landfill void capacity and recovery rates for construction wastes relevant to the Proposed Development were reviewed.

Embedded Design Measures

6.10.32 All management of waste, during construction, operation and decommissioning, will be in accordance with the relevant regulations. Waste will be transported by licensed waste carriers to waste management sites which hold the necessary regulatory authorisation and/or permits for those wastes consigned to them. These measures are set out in the **Framework Construction Environmental Management Plan [EN010154/APP/7.7]**, **Framework Operational Environmental Management Plan [EN010154/APP/7.8]** and **Framework Decommissioning Environmental Management Plan [EN010154/APP/7.9]**.

Assessment of Effects

6.10.33 Construction materials required to construct, operate, and decommission the Proposed Development are unlikely to be required in large quantities and are anticipated to be small in the context of regional and national construction material availability. Therefore, no significant effects are anticipated.

6.10.34 Construction wastes include surplus spoil, scrap, recovered spills, unwanted surplus materials, packaging, site office waste, and broken, worn-out, contaminated or otherwise spoiled plant, equipment, and materials. The overall quantities of construction waste generated by the Proposed Development are anticipated to be small in the context of regional inert and non-hazardous landfill capacity and national hazardous landfill capacity.

6.10.35 During construction, solar panels, inverters, transformers and other supporting equipment will be manufactured off-site to the specified sizes, and wastage during installation is expected to be minimal. Large-scale earthworks are not expected.

6.10.36 It is concluded that no significant effects are expected during construction.

6.10.37 Waste arising from the day-to-day operation of the Proposed Development would include welfare facility waste and general waste (e.g. paper, cardboard, wood). It is expected that throughout operation there would be ad hoc replacement of any components that fail or reach the end of their lifespan. It is likely that the Solar PV Panel waste generated by the Proposed Development during operation and maintenance and decommissioning would be managed by specialist regional or national recycling facilities, and that such facilities would be developed over the operation and maintenance phase in response to demand generated by the UK-wide solar panel industry. The quantity of waste disposed of to landfill is unlikely to be significant in the

context of regional landfill capacity. Therefore, no significant effects are expected during the operation of the Proposed Development.

6.10.38 During decommissioning, recycling routes are generally available for wastes at present, and it is likely that there will be even greater opportunities for recycling in the future, not least because the market will have expanded to meet demand as solar PV installations increase. A number of new investments in UK solar PV recycling have been announced and an 80% recovery rate is reported. This is expected to increase as these companies invest in their processes, enabling recycling rates over 95% to match other countries. No significant effects are expected during the decommissioning of the Proposed Development.

Cumulative Effects

6.10.39 Since waste solar panels are unlikely to be disposed of to landfill, and the majority of solar panel waste is not anticipated to be hazardous, no cumulative materials and waste impacts have been identified for the Proposed Development.

Major Accidents and Disasters

6.10.40 The assessment of Major Accidents and Disasters assesses the potential effects of the Proposed Development on the risk of major accidents and disasters occurring. 'Accidents' are defined as an occurrence resulting from uncontrolled developments in the course of construction, operation and decommissioning (e.g. major emission, fire or explosion). 'Disasters' are defined as naturally occurring extreme weather events or ground related hazard events (e.g., subsidence, landslide, earthquake).

Baseline

6.10.41 Several receptors are present in the vicinity of the Proposed Development which could be vulnerable to major accidents or disasters, either because of their proximity to the Proposed Development or their importance to the surrounding area. These include but are not limited to, towns, villages, farms and residential homes, commercial buildings, roads and railways, airports, designated ecological sites, waterbodies and overhead and underground infrastructure.

Assessment of Effects

6.10.42 An initial exercise was undertaken to identify all possible major accidents or disasters that could be relevant to the Proposed Development, including floods, fire, road accidents, utilities failure and plant disease. Major accidents or disasters with little relevance in the UK, such as volcanic eruptions, were not included. A study area of 10km from the DCO Site Boundary has been used for the assessment.

6.10.43 By their very nature, major accidents and disasters have the potential to lead to moderate or major adverse significant effects, and therefore the focus is on prevention and response planning to reduce the risk or effect of this

happening. This is on-going through design development and consultation with relevant statutory consultees.

6.10.44 However, at this stage, it is not expected that there is a significant risk of major accidents and disasters during construction, operation or decommissioning of the Proposed Development. The potential for Proposed Development to affect flood risk is covered in **Appendix 9-C: Flood Risk Assessment** of this ES **[EN010154/APP/6.3]** and for battery storage to result in a fire is covered in a **Framework Battery Safety Management Plan [EN010154/APP/7.17]** which are submitted with the DCO application.

Embedded Design Measures

6.10.45 Minimising the risk of major accidents during construction and decommissioning will be addressed through appropriate risk assessments, as required in the detailed Construction Environmental Management Plan.

Cumulative Effects

6.10.46 With the mitigation measures listed in **Table 14-14** of **Chapter 14: Other Environmental Topics** of this ES **[EN010154/APP/6.1]** to reduce the risk of fire and other shortlisted events for the Proposed Development, it is not expected that any cumulative developments would increase the risk or severity of the residual effects associated with major accidents and disasters affecting the Proposed Development.

Telecommunications, Television Reception and Utilities

Baseline

6.10.47 Existing infrastructure constraints identified at and adjacent to the DCO Site include overhead lines, assets operated by Anglian Water such as sewage treatment works, underground pipelines and a pumping station and other underground pipelines understood to be used for transportation of fuel.

Assessment of Effects

6.10.48 The Proposed Development is unlikely to interfere with telecommunications infrastructure due to the relatively low height of the solar PV panels and infrastructure associated with the Proposed Development, which will not provide an obstacle for telecommunication waves. Therefore, no effects on telecommunication are anticipated during the construction, operation and decommissioning phases.

6.10.49 Similarly, as the Proposed Development consists of fixed low-lying infrastructure, it is unlikely to interfere with digital television signals and therefore, no effects on digital television signals are anticipated in the construction, operation and decommissioning phases.

6.10.50 There is the potential for utilities to be affected during the construction of the Proposed Development through inadvertent damage which could be caused as a result of excavation and engineering operations. However, with

appropriate measures put in place it is not expected that there would be any adverse effects.

6.10.51 Potential impacts on utilities will be addressed through a number of embedded mitigation measures, these include locating the Proposed Development outside of utilities protected zones, using ground penetrating radar before any excavation takes place, this will identify any unknown utilities, and ensuring appropriate clearances are in place when plant and equipment is being moved beneath the overhead lines. With embedded mitigation in place, it is not expected that there will be any adverse effects. The application of embedded mitigation would reduce the likelihood of effects on utilities during construction. Therefore, no adverse effects are expected during construction. Additionally, the embedded mitigation measures used during construction would also apply during decommissioning. Therefore, no adverse effects are predicted during decommissioning. No effects are predicted on utilities during operation as no below-ground works are required during this phase. Measures in relation to safe working beneath overhead lines would be in place for all phases.

Cumulative Effects

6.10.52 It is expected that other developments included within the cumulative developments shortlist would also have no effect on telecommunications and television reception and would adhere to the same mitigation as set out in **Chapter 14: Other Environmental Topics** of this ES **[EN010154/APP/6.1]** to reduce the risk of damaging utilities. Therefore, no Cumulative Effects are expected on telecommunications, television reception, or utilities.

Electric and Electromagnetic Fields

6.10.53 Electric fields are the result of voltages applied to electrical conductors and equipment. Fences, shrubs, and buildings easily block electric fields. Electromagnetic fields are produced by the flow of electric current; however, unlike electric fields, most materials do not readily block electromagnetic fields. The intensity of both electric fields and electromagnetic fields diminishes with increasing distance from the source. Underground cables eliminate the electric field altogether as it is screened out by the sheath around the cable, and therefore the assessment undertaken within the ES only considers electro-magnetic fields.

6.10.54 Electromagnetic Fields associated with the Proposed Development are considered a minor risk and a preliminary assessment has been included within the ES on a precautionary basis.

6.10.55 With the exception of relatively short lengths of lower voltage cables connecting solar PV panels to string inverters, all medium and high voltage cables associated with the Proposed Development would be buried underground. Underground cables eliminate the electric field altogether as it is screened out by the sheath around the cable, but they still produce electromagnetic fields. In accordance with National Grid guidance, electromagnetic field effects from underground cables would not exceed the

International Commission on Non-Ionizing Radiation Protection (ICNIRP) reference levels and were therefore scoped out of this assessment. The Onsite Cables were also scoped out of the assessment as they would have a very low voltage and so would not significantly contribute to any increase in electromagnetic fields should they overlap with other infrastructure.

Baseline

6.10.56 The DCO Site is located within a mixture of primarily rural and semi-rural areas, which accommodate existing electrical assets. Electric and magnetic fields both occur naturally.

Assessment of Effects

6.10.57 There are no permanent residential receptors within 10m of the DCO Site Boundary. The electricity export cable will be located at least 10m from permanent receptors due to the need for construction vehicles to manoeuvre both sides of the trench within the working width. Therefore, no significant effects to receptors are predicted to occur.

6.10.58 The presence of the public either directly above or adjacent to underground cables associated with the Proposed Development would be transient, with the individuals using PRoW exposed to electro-magnetic fields from the cables for only very short periods of time. It is considered that the level of exposure to users of PRoW would be lower than that associated with general household appliances. No significant effects to users of PRoW are predicted to occur.

6.10.59 Where the cables associated with the Proposed Development are proposed to cross watercourses, the cables will be installed a minimum of 2m below minor/ordinary watercourses (except where minor/ordinary watercourses have minimal or no water flow and water management is easily managed) and 5m beneath Main Rivers, which will provide sufficient distance to attenuate electromagnetic fields and avoid impacts on river species such as fish.

6.10.60 The assets associated with the Proposed Development would be fully compliant with Government policy. Specifically, all the electromagnetic fields produced would be below the relevant exposure limits. Therefore, no significant electromagnetic field effects are anticipated as a result of the Proposed Development.

Cumulative Effects

6.10.61 It is expected that the electromagnetic fields associated with other developments included within the cumulative developments shortlist would also have no significant effect on receptors and would adhere to the same relevant Government policy as set out **Chapter 14: Other Environmental Topics** of this ES **[EN010154/APP/6.1]** to ensure all EMF is below the relevant exposure limits. Therefore, no Cumulative Effects are expected due to electromagnetic fields.

6.11 Cumulative Effects and Interactions

6.11.1 Cumulative Effects have the potential to occur where two (or more) proposed developments are within close enough proximity for them to both give rise to environmental effects on the same receptor.

6.11.2 The assessment of Cumulative Effects arising from the Proposed Development, in combination with other proposed schemes, is based upon a review of current and submitted planning and DCO applications as well as a study of planning policy documents.

6.11.3 To date, a list of proposed schemes that are located close enough to the Proposed Development that they have the potential to generate significant Cumulative Effects has been identified. The list of proposed schemes has been agreed with North Kesteven District Council and Lincolnshire County Council.

6.11.4 An assessment of the Cumulative Effects of the Proposed Development along with these other developments is presented within each technical chapter (**Chapter 6 to 14** of this ES **[EN010154/APP/6.1]**). 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. Nor are any significant effects associated with the Proposed Development made greater (e.g. from Moderate to Major) when considering these other developments alongside the Proposed Development. Therefore, for these chapters, it is considered that there will not be any new likely significant Cumulative Effects that are not already accounted for by the assessment of the Proposed Development.

6.11.5 For the assessment of cumulative Landscape and Visual Amenity effects (**Chapter 10: Landscape and Visual Amenity of this ES [EN010154/APP/6.1],** Section 10.10), there is potential for significant cumulative landscape and visual effects during construction, as is the case for the Proposed Development alone. This is described further in **Chapter 15: Cumulative Effects and Interactions** of this ES **[EN010154/APP/6.1]**.

6.11.6 Effect Interactions occur where a single receptor is affected by more than one impact from different aspects of the Proposed Development. An example of an Effect Interaction could be where a local resident is affected by dust, noise and visual impacts during the construction of the Project, with the overall result being a greater adverse effect on amenity than when each individual effect is considered in isolation.

6.11.7 **Table 15-2** and **Table 15-3** in **Chapter 15: Cumulative Effects and Interactions** of this ES **[EN010154/APP/6.1]** summarises the potential Effect Interactions as a result of the Proposed Development. There is the potential for significant Effect Interactions on residential properties, business premises and community facilities as a result of the combined impact of visual, transport and access, socio-economic and noise and vibration effects. These effects would be temporary, occurring only during the construction and

decommissioning phases. Effect Interactions would be slightly lower during the decommissioning phase than construction phase due to matured vegetation screening the Proposed Development. The potential Effect Interaction is not expected to be greater than the significant visual and noise effects in isolation. Although some receptors with adverse effects from landscape and visual changes may also experience noise and vibration impacts, these impacts are temporary and transient, with the worst-case impacts assessed only experienced at a particular receptor for a few months, after which the construction phasing will move elsewhere in the DCO Site.

6.11.8 During operation, there is the potential for significant Effect Interactions as a result of the combined impact of noise and vibration and landscape and visual amenity on residential properties, business premises and community facilities. The duration of these effects is long-term but reversible following decommissioning of the Proposed Development, and the combined effect is not anticipated to be of a greater magnitude than the significant visual and noise and vibration effects in isolation.

7. Summary and Conclusions

7.1.1 The ES presents the findings of the EIA process that has been undertaken for the Proposed Development. A summary of the residual significant effects of the Proposed Development during construction and operation is provided below in **Table 7-1** and **Table 7-2**. Decommissioning effects would likely, in most cases be no greater than those set out for construction (as reported in **Table 7-1**). This is likely to overestimate the actual effects of decommissioning, which are expected to be shorter in duration and lower in magnitude than construction for the most part.

7.1.2 A number of environmental impact avoidance and mitigation measures have been identified to mitigate and control environmental effects during construction, operation (including maintenance) and decommissioning of the Proposed Development. It is proposed that these will be secured through appropriate requirements and other controls should development consent be granted for the Proposed Development.

7.1.3 Feedback from the statutory consultation process has been taken into account when preparing the DCO application and in undertaking the EIA process. The ES presents the final findings and conclusions associated with the EIA process, based on the proposed layout and design of the Proposed Development.

Table 7-1: Summary of significant effects during the construction phase of the Proposed Development

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (construction)	Residual effect
Chapter 6: Climate Change			
No significant residual effects on climate change are predicted during the construction of the Proposed Development.			
Chapter 7: Cultural Heritage			
No significant residual effects on Cultural Heritage are predicted during the construction of the Proposed Development.			
Chapter 8: Ecology and Nature Conservation			
No significant residual effects on ecology and nature conservation are predicted during the construction of the Proposed Development.			
Chapter 9: Water Environment			
No significant, residual effects on water environment are predicted during the construction of the Proposed Development.			
Chapter 10: Landscape and Visual Amenity			
Landscape Receptors			
Cable Corridor	High	Change to landscape character	**Major adverse (significant)**
LLCA 13: Low Fields South LLCA 14: Low Fields Noth LLCA 15: Lincoln Cliff	High	Change to landscape character	**Moderate adverse (significant)**
LLCA 03: Tunman Hill LLCA 08: Thurlby Fenland	Medium-high	Change to landscape character	**Major adverse (significant)**
Principal Site	Medium	Change to landscape character	**Major adverse (significant)**

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (construction)	Residual effect
Sub-area 5: Witham and Brant Vales	Medium	Change to landscape character	**Moderate adverse (significant)**
Sub-area 2: Terrace Sandlands	Low-medium	Change to landscape character	**Moderate adverse (significant)**
Visual Receptors			
Residents of Coleby Residents of Boothby Graffoe Recreational users of Vikings Way (PRoW Cole/2/1 and BooG/2/2)	High	Change to visual amenity	**Moderate adverse (significant)**
Residents of Church Farm and Low Barn	Medium-high	Change to visual amenity	**Major adverse (significant)**
Residents of Thorpe on the Hill Residents of Scotland Farm Residents of Housham Wood Farm Residents of Eagle Barnsdale Residents of Morton Residents of High Walks Farm Residents of Witham St Hughs (east) Residents of River Farm (north) Residents of Tonge's Farm Residents of Bassingham Residents of Thurlby Residents of Malborough Residents of North Field Farm	Medium-high	Change to visual amenity	**Moderate adverse (significant)**

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (construction)	Residual effect
Residents of Grange Cottage			
Recreational users of PRoW west of Thorpe on the Hill (TOTH/7/2, TOTH/21/1, TOTH/6/2, TOTH/6/3) Recreational users of PRoW Aubo/12/2 Recreational users of PRoW Aubo/8/1 Recreational users of PRoW TOTH/11/1 Recreational users of PRoW TOTH/12/3 Recreational users of PRoW TOTH/15/1 Recreational users of PRoW Aubo/10/1	Medium	Change to visual amenity	**Major adverse (significant)**
Recreational users of PRoW TOTH/6/1 and TOTH/6A/1 Recreational users of PRoW Bass/1/1, NoDi/1/2, NoDi/4/1, ThuN/5/1 Recreational users of PRoW ThuN/2/1 Recreational users of PRoW Bass/22/1, Bass/21/2, Bass/20/1 Users of Clay Lane and Bassingham Road	Medium	Change to visual amenity	**Moderate adverse (significant)**
Recreational users of PRoW TOTH/18/1	Low-medium	Change to visual amenity	**Moderate adverse (significant)**
ES Chapter 11: Noise and Vibration			
R26 (Grange Cottage, Bassingham Road), R35 (Housham Grange, Newark Road), and R50 (19 Park Crescent)	High	Construction Vibration - Noise Generating Activities 1 (NGA1) - Construction of the BESS, Solar Stations, and ground mounted solar PV panel arrays	**Above or equal to the Significant Observed Adverse Effect Level (significant)**

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (construction)	Residual effect
Chapter 12: Socio-Economics and Land Use			
No significant residual effects on socio-economics are predicted during the construction of the Proposed Development.			
Chapter 13: Traffic and Transport			
No significant residual effects on traffic and transport are predicted during the construction of the Proposed Development.			
Chapter 14: Other Environmental Topics			
No significant residual effects on air quality; glint and glare; ground conditions; materials and waste; major accidents and disasters; telecommunications, television reception and utilities; and electromagnetic fields are expected during the construction of the Proposed Development.			
Chapter 15: Cumulative Effects and Interactions (where the magnitude of the Cumulative Effect exceeds that of the Proposed Development in isolation)			
Residential properties, businesses and community facilities	**High**	Effect Interactions as a result of the combined impact of visual, traffic and transport, socio-economic and noise and vibration.	**Significant -** the potential Effect Interaction is not anticipated to be of a greater magnitude than the significance of these effects in isolation.
Landscape Character (local level) North Kesteven District landscape sub-area Witham and Brant Vales	**Low-Medium**	Cumulative Effects are anticipated on the North Kesteven District landscape sub-area Witham and Brant Vales due to the noticeable increase in extent over which changes to the landscape character would be perceived during construction as a result of the Proposed Development together with ID95 Application Reference: PL/0087/23. North Hykeham Relief Road.	**Major adverse (Significant)**

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (construction)	Residual effect
Landscape Character (local level) North Kesteven District landscape sub-area Limestone Heath	**Low-Medium**	Cumulative Effects are anticipated on the North Kesteven District landscape sub-area Limestone Heath due to the noticeable increase in extent over which changes to the landscape character would be perceived during construction as a result of the Proposed Development together with ID63 Application Reference: EN010149. Springwell Energy Farm and ID103 Application Reference: EN0110016. Leoda Solar Farm.	**Moderate adverse (Significant)**
Visual receptors (residents, road users and users of PRoW) experiencing views across the Cable Corridor	**High**	Cumulative Effects are anticipated on the visual amenity of users of the Viking Way (PRoW Cole/2/1 and BooG/2/2) as a result of the Proposed Development together with ID95 Application Reference: PL/0087/23. North Hykeham Relief Road.	**Major adverse (Significant)**

Table 7-2: Summary of significant effects during the operation phase of the Proposed Development

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (operation)	Residual effect
Chapter 6: Climate Change			
Global atmosphere	High	Avoidance of atmospheric greenhouse gas (GHG) emissions from fossil fuel electricity generation due to operation of the Proposed Development.	**Beneficial (significant)**
ES Chapter 7: Cultural Heritage			

No significant residual effects on Cultural Heritage are predicted during the operation of the Proposed Development.

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (operation)	Residual effect
ES Chapter 8: Ecology and Nature Conservation			
Habitat –woodland and individual trees (including veteran trees)	High	Natural re-generation of areas surrounding woodland within the DCO Site, along with enhanced planting, will allow the expansion of existing woodlands, as well as providing further natural buffers to existing mature woodlands. New areas of tree planting will be allowed to grow tall and wide to provide maximum benefits for biodiversity and will be created as screening from Proposed Development infrastructure, to improve habitat connectivity (for species such as bats and birds) and increase the area of hedgerow (and woodland habitat) within the DCO Site.	Moderate beneficial effect **(Significant)**
Habitat - Other standing water (e.g., ponds), including aquatic macroinvertebrates	Low	New habitats created by the Proposed Development will see the removal of agricultural chemicals within the Principal Site reducing the quantity of agricultural run-off and chances of eutrophication in nearby rivers and ditches. Planting of aquatic macrophyte and riparian species to enhance water bodies and riparian/marginal habitats. Removal of selected shrub will also be done to reduce shading in the channel and promote macrophyte growth.	Moderate beneficial effect **(Significant)**
Habitat – Main Rivers (including Ditches), including species using them (Fish and riparian mammals)	Medium	New habitats created by the Proposed Development will see the removal of agricultural chemicals from land parcels within the Principal Site reducing the quantity of agricultural run-off and chances of eutrophication in nearby rivers and ditches. This will further secure the long-term future of these habitats and is in line with the expectations of national and local planning policy and will have benefits for any species within such habitats.	Moderate beneficial effect **(Significant)**

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (operation)	Residual effect
Grassland and arable field margins with scarce arable flora	High	Additional grassland and conservation margins provided adjacent to and beneath the solar PV panels in the Principal Site, and larger permanent grassland fields, including in arable field margin in retained arable fields, which will increase the diversity of flora in comparison to existing intensive agriculture and provide new habitat niches to encourage fauna such as invertebrates and birds.	Moderate beneficial effect **(Significant)**
Hedgerows	Medium	New hedgerow planting and bolstering of existing defunct hedgerows which will increase connectivity across the DCO Site for species such as bats. Gaps in currently defunct hedges will be planted with suitable native species to improve the connectivity of habitats. Hedgerows will be allowed to grow tall and wide to provide maximum benefits for biodiversity and encourage a mosaic of habitats, forming broad habitat corridors throughout the DCO Site.	Moderate beneficial effect **(Significant)**
ES Chapter 9: Water Environment			
No significant residual effects on water environment are predicted during the operation of the Proposed Development.			
ES Chapter 10: Landscape and Visual Amenity			
Landscape receptors			
LLCA 03: Tunman Hill LLCA 08: Thurlby Fenland	Medium-high	Long-term (reversible) change to landscape character	**Major adverse (significant)** at year 1 reducing to **Moderate adverse (significant)** at year 15 (winter and summer)

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (operation)	Residual effect
Principal Site	Medium	Long-term (reversible) change to landscape character	**Major adverse (significant)** at year 1 reducing to **Moderate adverse (significant)** at year 15 (winter and summer)
Sub-area 5: Witham and Brant Vales	Medium	Long-term (reversible) change to landscape character	**Moderate adverse (significant)** at year 1 reducing to not significant at year 15
Sub-area 2: Terrace Sandlands	Low-medium	Long-term (reversible) change to landscape character	**Moderate adverse (significant)** at year 1 reducing to not significant at year 15
Visual receptors			
Residents of Housham Wood Farm Residents of Church Farm and Low Barn	Medium-high	Long term (reversible) change to visual amenity	**Moderate adverse (significant)** in year 1 reducing to not significant in year 15
Residents of Grange Cottage Recreational users of PRoW TOTH/12/3	Medium-high	Long term (reversible) change to visual amenity	**Moderate adverse (significant)** in year 1 and year 15 (winter); not significant in year 15 (summer)
Recreational users of PRoW Aubo/8/1	Medium	Long term (reversible) change to visual amenity	**Major adverse (significant)** in year 1 and year 15 (winter and summer)

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (operation)	Residual effect
Recreational users of PRoW west of Thorpe on the Hill (TOTH/7/2, TOTH/21/1, TOTH/6/2, TOTH/6/3)	Medium	Long term (reversible) change to visual amenity	**Major adverse (significant)** in year 1 and year 15 (winter) **Moderate adverse (significant)** in year 15 (summer)
Recreational users of PRoW Bass/22/1, Bass/21/2, Bass/20/1 Recreational users of PRoW TOTH/11/1 Recreational users of PRoW TOTH/15/1	Medium	Long term (reversible) change to visual amenity	**Moderate adverse (significant)** in year 1 and year 15 (winter); not significant in year 15 (summer)
Recreational users of PRoW Aubo/10/1 Recreational users of PRoW Aubo/12/2 Recreational users of PRoW Bass/1/1, NoDi/1/2, NoDi/4/1, ThuN/5/1 Recreational users of PRoW ThuN/2/1 Recreational users of PRoW TOTH/6/1 and TOTH/6A/1 Users of Clay Lane and Bassingham Road	Medium	Long term (reversible) change to visual amenity	**Moderate adverse (significant)** in year 1 reducing to not significant in year 15
ES Chapter 11: Noise and Vibration			
No significant residual effects on noise and vibration are predicted during the operation of the Proposed Development.			

Description of resource / receptor and effect	Sensitivity (value)	Description of impact (operation)	Residual effect
ES Chapter 12: Socio-Economics and Land Use			
No significant residual effects on socio-economics are predicted during the operation of the Proposed Development.			
ES Chapter 13: Traffic and Transport			
No significant residual effects on traffic and transport are predicted during the operation of the Proposed Development.			
ES Chapter 14: Other Environmental Topics			
No significant residual effects on air quality; glint and glare; ground conditions; materials and waste; major accidents and disasters; telecommunications, television reception and utilities; and electromagnetic fields are expected during the operation of the Proposed Development.			
ES Chapter 15: Cumulative Effects and Interactions			
No significant residual Cumulative Effects and Interactions are predicted where the magnitude of the Cumulative Effect exceeds that of the Proposed Development in isolation.			

8. References

Ref 1 Planning Act 2008. Available at: https://www.legislation.gov.uk/ukpga/2008/29/contents

Ref 2 The Infrastructure Planning (Environmental Impact Assessment) Regulations (2017). Available at: https://www.legislation.gov.uk/uksi/2017/572

Ref 3 Planning Inspectorate (2020). Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements. Version 7. Available at: https://assets.publishing.service.gov.uk/media/6579a3e4095987001295dfcc/Annex1_advice_note_7.pdf

Ref 4 Institute of Air Quality Management (2017) Land-Use Planning & Development Control: Planning for Air Quality

Ref 5 H.M. Government (1990). Environmental Protection Act 1990. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents

Ref 6 Institute of Air Quality Management (2023) Guidance on the assessment of dust from demolition and construction.

9. Abbreviations

AC	Alternating Current
AIL	Abnormal Indivisible Loads
AQMA	Air Quality Management Area
ATCT	Air Traffic Control Tower
BESS	Battery Energy Storage System
BMV	Best and Most Versatile
BNG	Biodiversity Net Gain
CCGT	Combined Cycle Gas Turbine
CCRA	Climate Change Risk Assessment
CCTV	Closed Circuit Television
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CTMP	Construction Traffic Management Plan
DC	Direct Current
DCO	Development Consent Order
DEMP	Decommissioning Environmental Management Plan
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
ES	Environmental Statement
FRA	Flood Risk Assessment
FTE	Full Time Equivalent
GHG	Greenhouse Gas
GVA	Gross Value Added
GW	Gigawatt
GWh	Gigawatt-hour
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
ICCI	In-Combination Climate Change Impact
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEMA	Institute of Environmental Management and Assessment
LCA	Landscape Character Area

LEMP	Landscape and Ecological Management Plan
LGV	Light Goods Vehicle
LHA	Local Highway Authority
LLCA	Local Landscape Character Area
LNR	Local Nature Reserve
LSOA	Layer Super Output Area
LWS	Local Wildlife Site
MW	Megawatt
MWh	Megawatt-hour
NCA	National Character Area
NH	National Highways
NHLE	National Heritage List for England
NO2	Nitrogen Dioxide
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
OEMP	Operational Environmental Management Plan
ONS	Office for National Statistics
PEI	Preliminary Environmental Information
PRoW	Public Right of Way
PV	Photovoltaic
RAF	Royal Air Force
RBMP	River Basin Management Plan
RPA	Root Protection Area
SAC	Special Area of Conservation
SMP	Soil Management Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWMP	Site Waste Management Plan
TTM	Temporary Traffic Management
UK	United Kingdom
UKCP	United Kingdom Climate Projections
UXO	Unexploded Ordinance
WFD	Water Framework Directive

10. Figures

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-27

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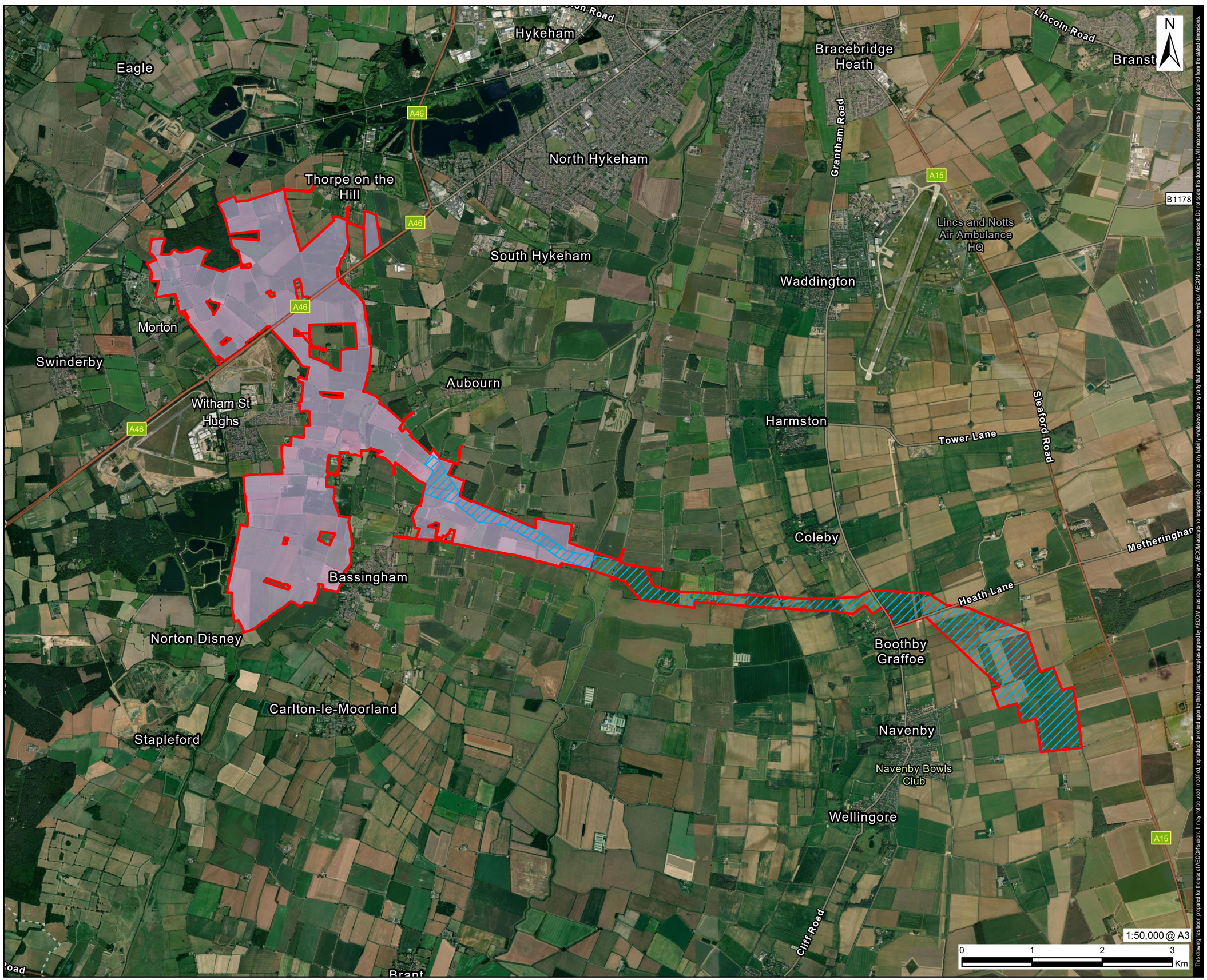

Fosse Green Energy

PROJECT

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LEGEND

- DCO Site Boundary
- Principal Site
- Cable Corridor

NOTES

LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

DCO Site Boundary Plan

FIGURE NUMBER	REV.
Figure 1	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-22

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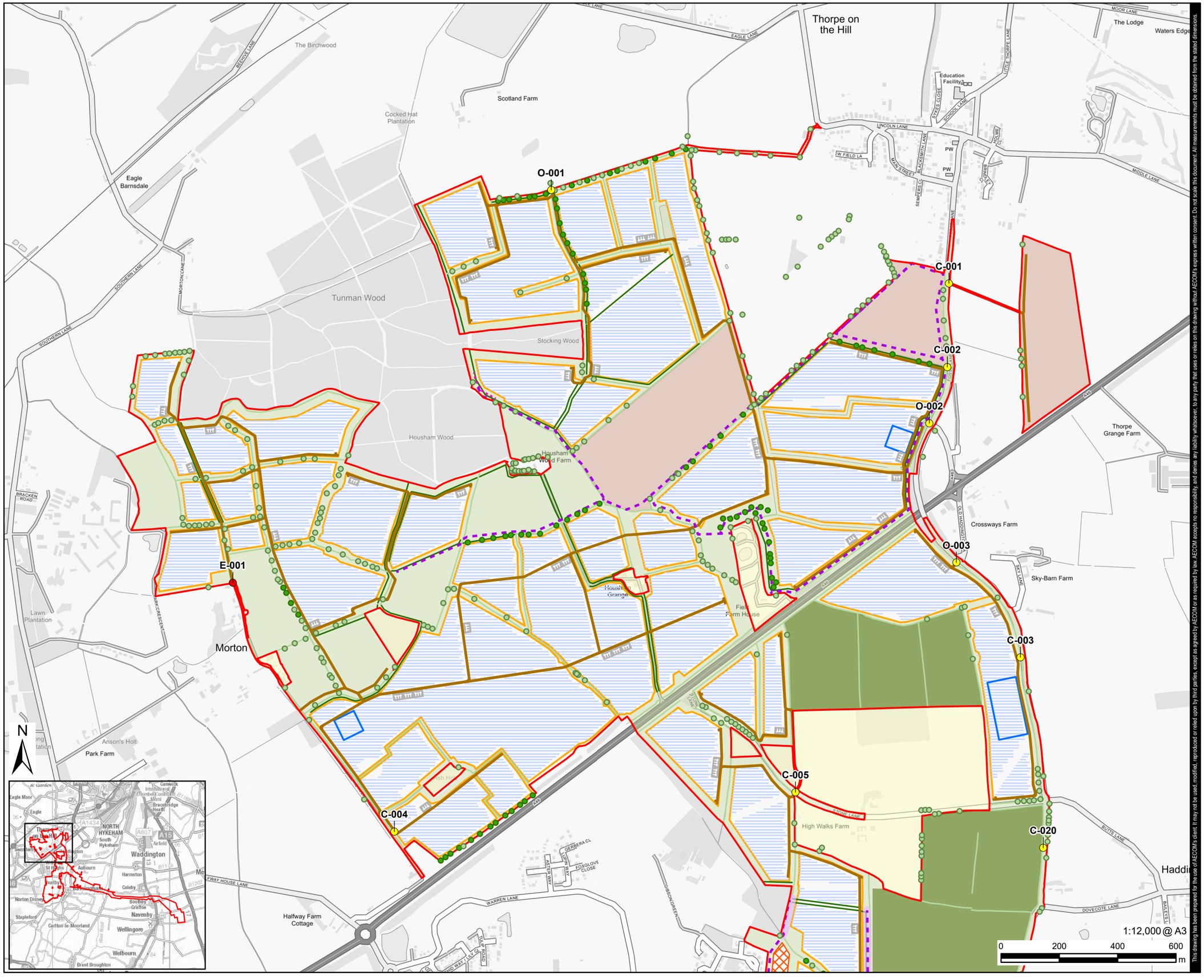

PROJECT

Fosse Green Energy

CLIENT

Fosse Green Energy Ltd

CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land Not Included in Site Boundary

Indicative South Facing Fixed layout

- PV Panels
- Solar PV Array Area
- Solar Station Compound
- Construction Compound
- Retained Arable and Grassland
- Bird Mitigation Area - Permanent Grassland
- Bird Mitigation Area - Managed Arable
- Access Tracks
- Construction and Operation Access Point
- Emergency Access Point
- Retained Permissive Paths
- Proposed Permissive Paths
- Public Right of Way Diversion
- Existing Tree
- Proposed Tree
- Community Orchard - Open Access
- Proposed Hedgerow
- Existing Hedgerows

NOTES

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LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Indicative Fixed South Facing Site Layout Plan

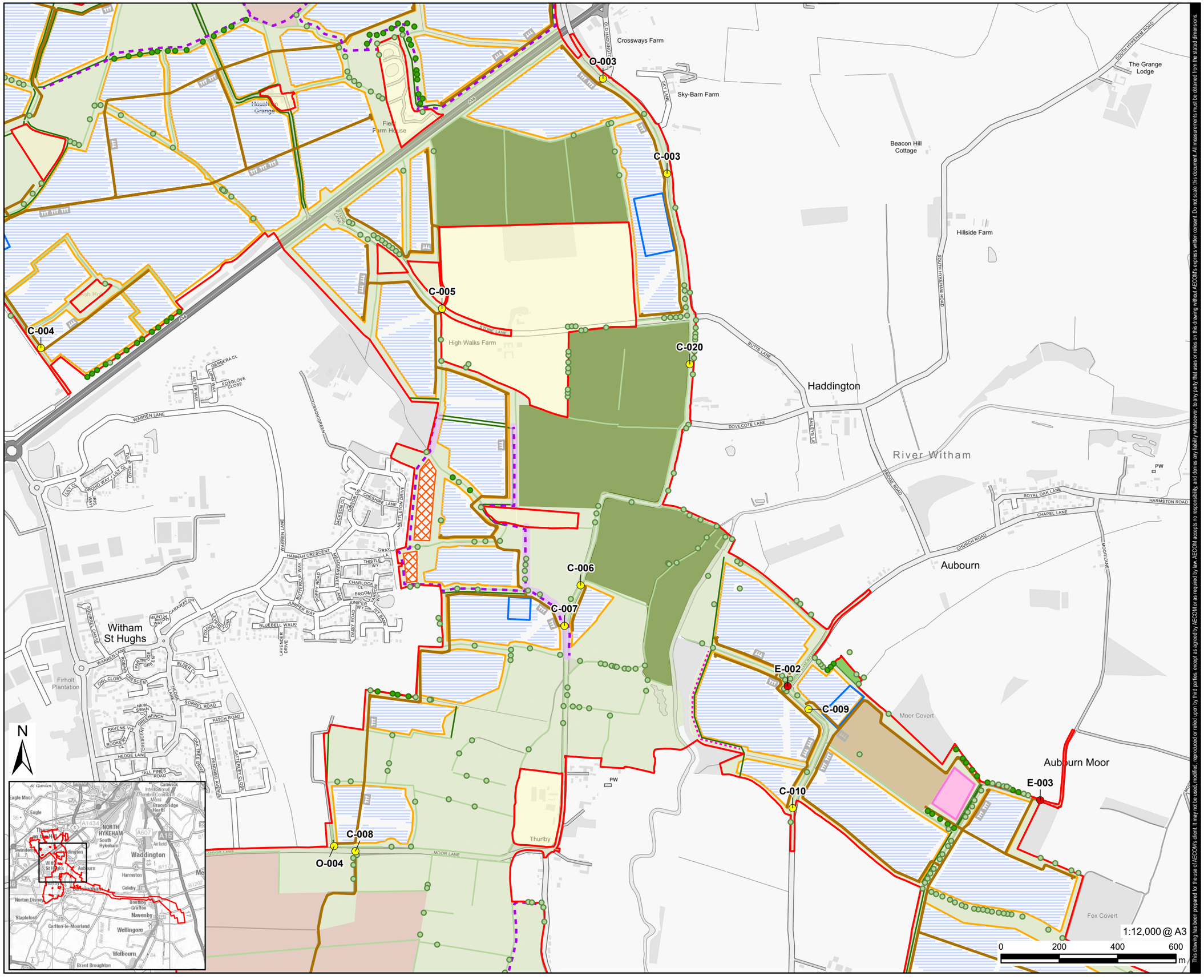
FIGURE NUMBER	REV.
Figure 2A SHEET 1	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-22

Filename: M:\Fosse Green Energy Park\02_Maps\Environmental Statement\Chapter 03 - Alternatives and Design Evolution\ES_Chapter3_Alt_DesignEvolution.aprx



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PROJECT

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CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land Not Included in Site Boundary

Indicative South Facing Fixed layout

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- Solar PV Array Area
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- Proposed Belt Of Trees
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- Proposed Hedgerow
- Existing Hedgerows

NOTES

LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Indicative Fixed South Facing Site Layout Plan

FIGURE NUMBER		REV.
Figure 2A	SHEET 2	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-22

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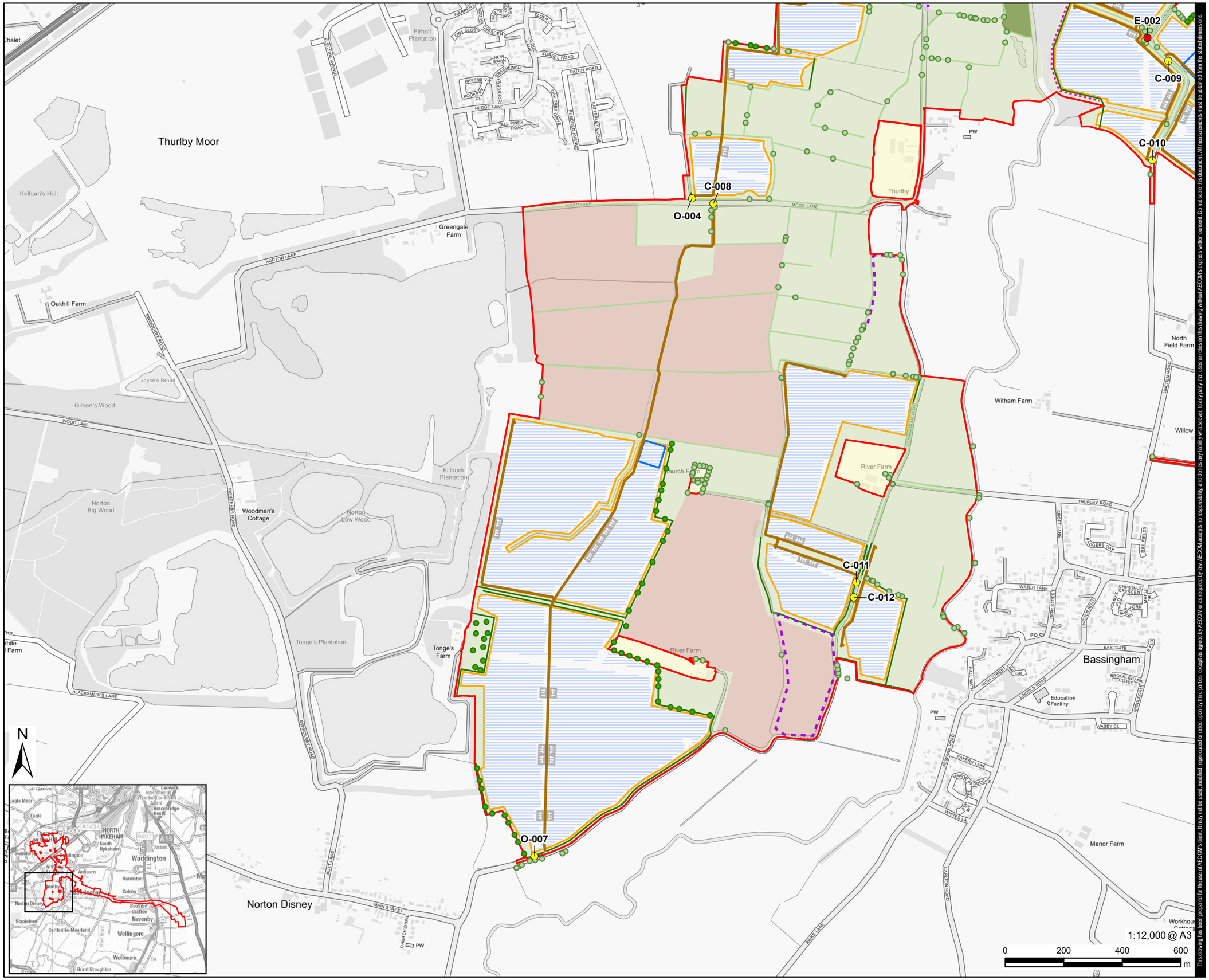

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PROJECT

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CLIENT

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CONSULTANT

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4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land Not Included in Site Boundary

Indicative South Facing Fixed layout

- PV Panels
- Solar PV Array Area
- Solar Station Compound
- Construction Compound
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- Proposed Permissive Paths
- Public Right of Way Diversion
- Existing Tree
- Proposed Tree
- Proposed Belt Of Trees
- Proposed Hedgerow
- Existing Hedgerows

NOTES

LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Indicative Fixed South Facing Site Layout Plan

FIGURE NUMBER	REV.
Figure 2A SHEET 3	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-22

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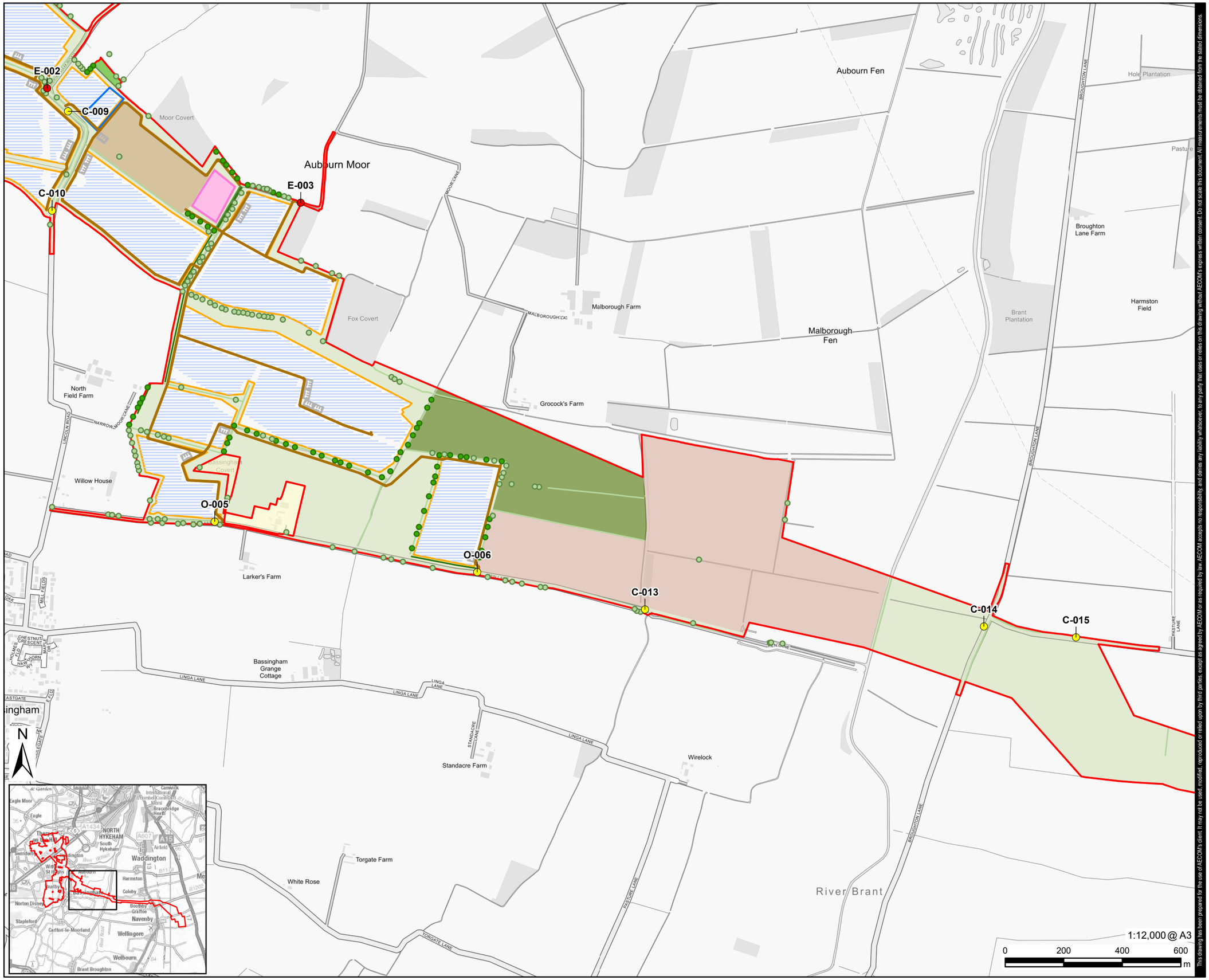

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PROJECT

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CLIENT

Fosse Green Energy Ltd

CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land Not Included in Site Boundary

Indicative South Facing Fixed layout

- PV Panels
- Solar PV Array Area
- Solar Station Compound
- Construction Compound
- Onsite Substation
- BESS Compound
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- Proposed Tree
- Proposed Belt Of Trees
- Proposed Hedgerow
- Existing Hedgerows

NOTES

LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Indicative Fixed South Facing Site Layout Plan

FIGURE NUMBER	REV.
Figure 2A SHEET 4	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-22

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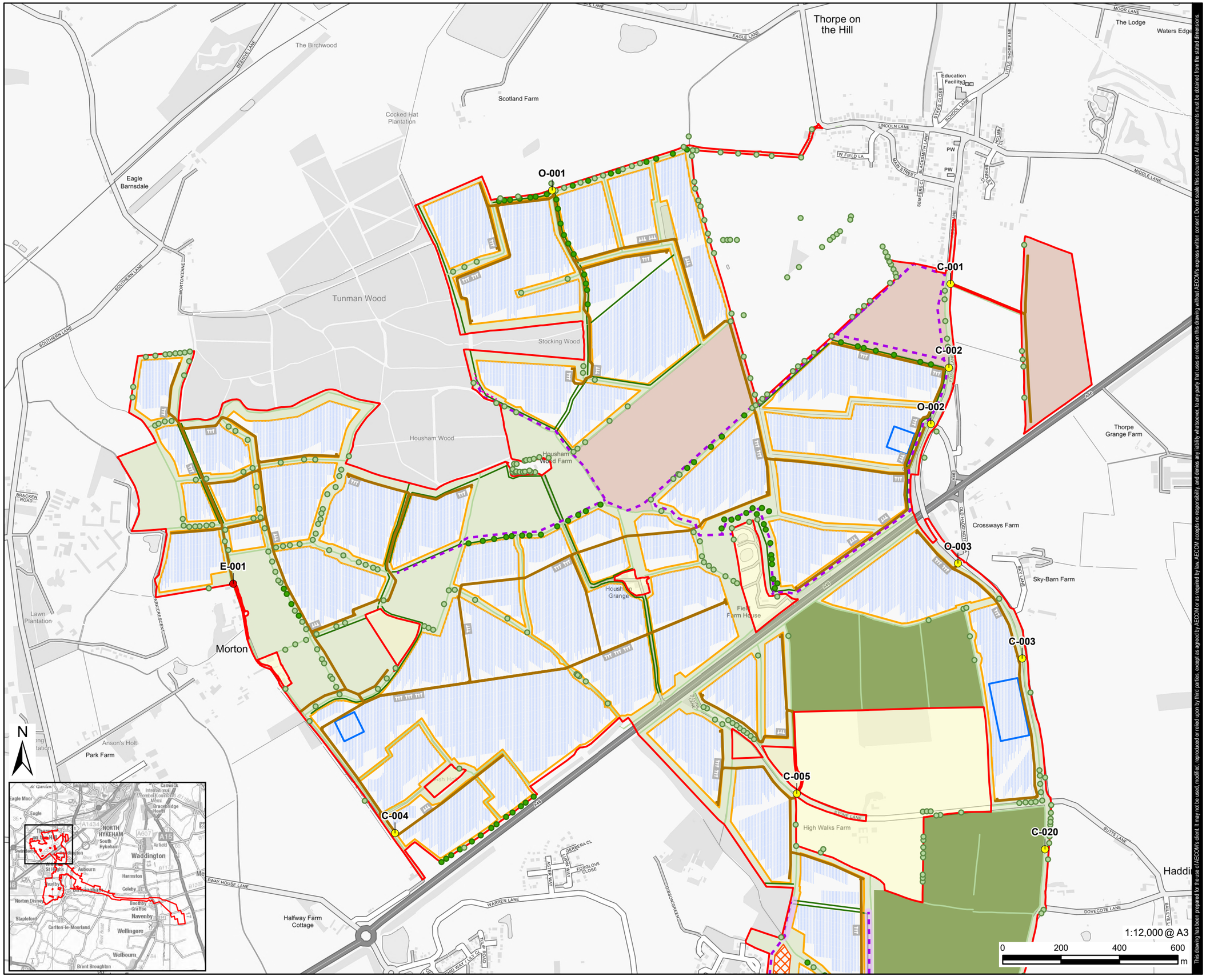

PROJECT

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CONSULTANT

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4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land Not Included in Site Boundary

Indicative Single Axis Tracker Layout

- PV Panels
- Solar PV Array Area
- Solar Station Compound
- Construction Compound
- Retained Arable and Grassland
- Bird Mitigation Area - Permanent Grassland
- Bird Mitigation Area - Managed Arable
- Access Tracks
- Construction and Operation Access Point
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- Proposed Permissive Paths
- Public Right of Way Diversion
- Existing Tree
- Proposed Tree
- Community Orchard - Open Access
- Proposed Hedgerow
- Existing Hedgerows

NOTES

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LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Indicative Single Axis Tracker Site Layout Plan

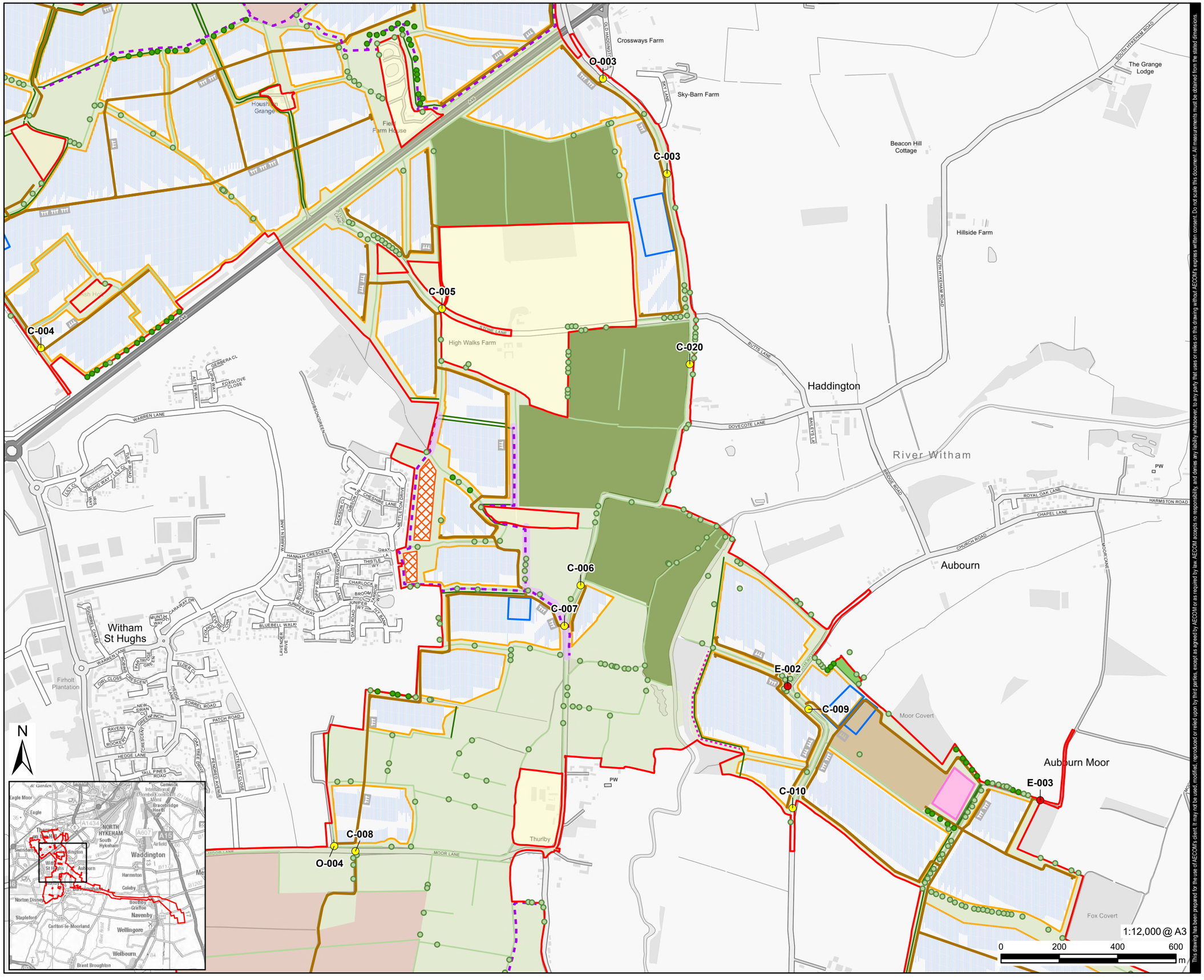
FIGURE NUMBER	REV.
Figure 2B SHEET 1	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-22

Filename: M:\Fosse Green Energy Park\02_Maps\Environmental Statement\Chapter 03 - Alternatives and Design Evolution\ES_Chapter3_Alt_DesignEvolution.aprx



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CONSULTANT

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4 Bedford Park
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[redacted]

LEGEND

- DCO Site Boundary
- Land Not Included in Site Boundary

Indicative Single Axis Tracker Layout

- PV Panels
- Solar PV Array Area
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- Construction Compound
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- Community Orchard - Open Access
- Proposed Hedgerow
- Existing Hedgerows

NOTES

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LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Indicative Single Axis Tracker Site Layout Plan

FIGURE NUMBER	REV.
Figure 2B SHEET 2	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-22

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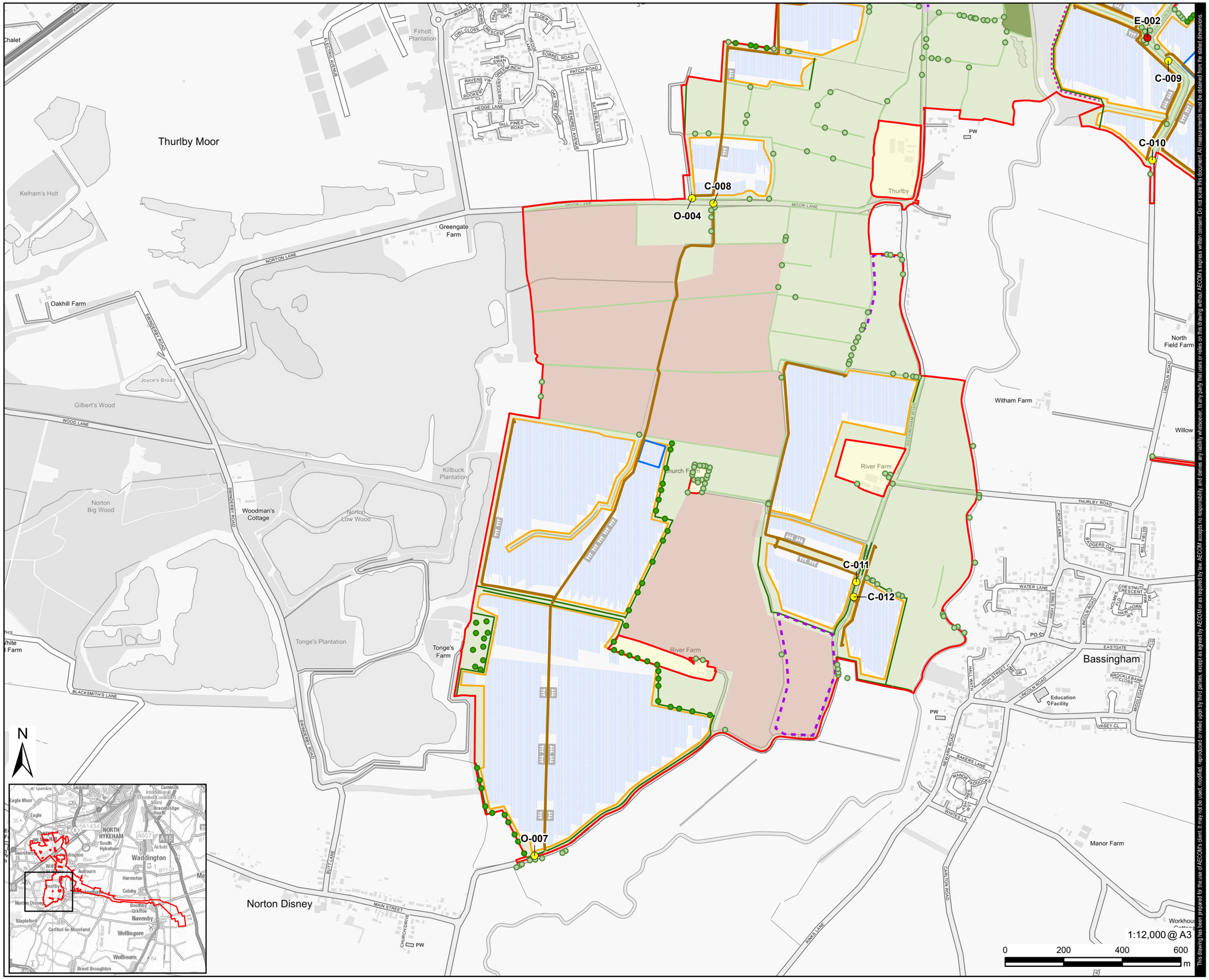

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CONSULTANT

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Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land Not Included in Site Boundary

Indicative Single Axis Tracker Layout

- PV Panels
- Solar PV Array Area
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- Proposed Hedgerow
- Existing Hedgerows

NOTES

LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Indicative Single Axis Tracker Site Layout Plan

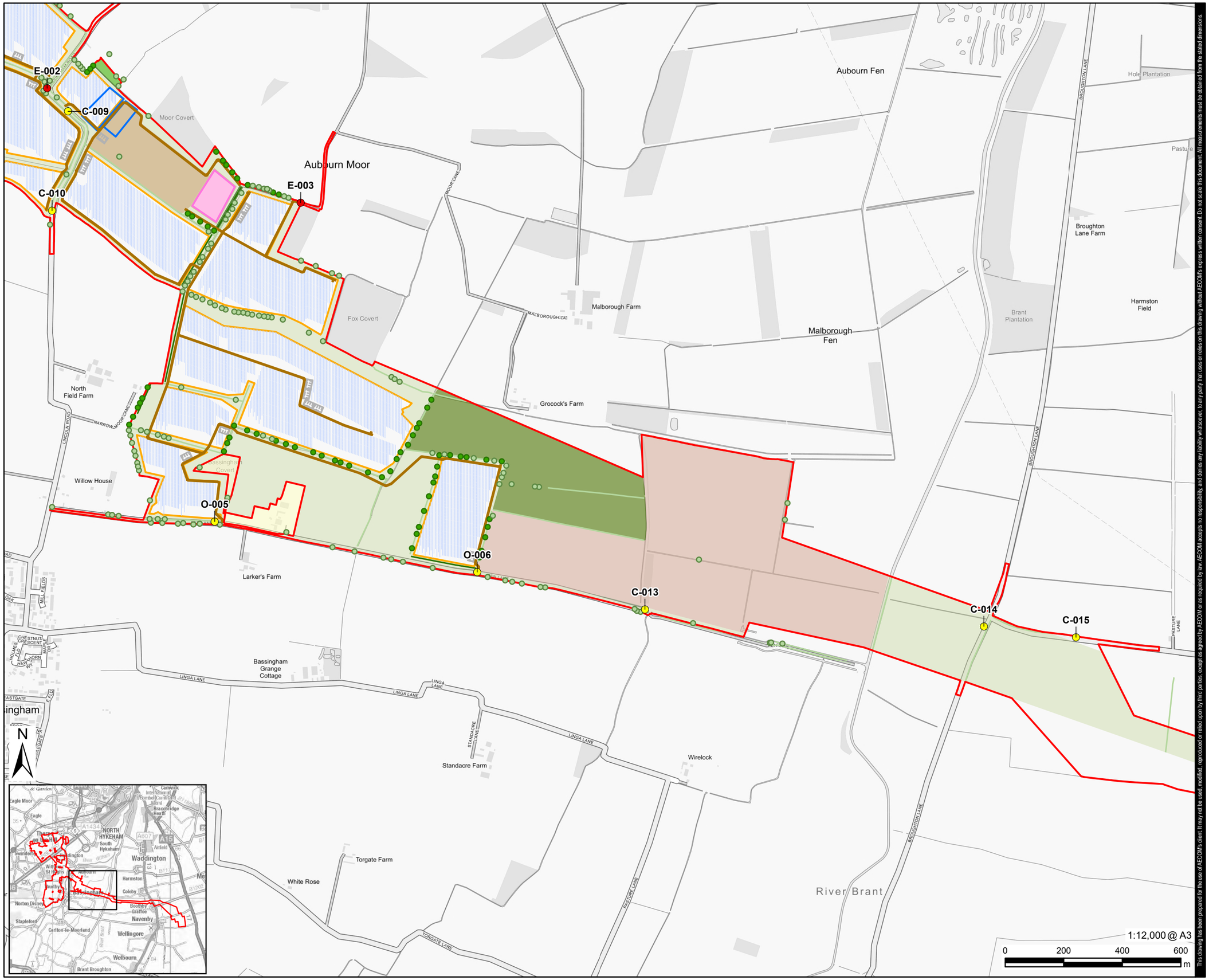
FIGURE NUMBER	REV.
Figure 2B SHEET 3	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-22

Filename: M:\Fosse Green Energy Park\02_Maps\Environmental Statement\Chapter 03 - Alternatives and Design Evolution\ES_Chapter3_Alt_DesignEvolution.aprx



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4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land Not Included in Site Boundary

Indicative Single Axis Tracker Layout

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NOTES

LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Indicative Single Axis Tracker Site Layout Plan

FIGURE NUMBER	REV.
Figure 2B SHEET 4	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-21

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Sheet 1

Sheet 2

Sheet 3

Sheet 4

NORTH HYKEHAM

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0 1 2 3 4 Km

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PROJECT

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CLIENT

Fosse Green Energy Ltd

CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Principal Site
- 1km Study Area Surrounding the Cable Route Corridor
- 3km Study Area Surrounding the PV Areas
- 5km Study Area Surrounding the PV Areas
- Sheet Extent
- Scheduled Monument
- Registered Park and Garden
- Conservation Area

Listed Building

- Grade I Listed Building
- Grade II* Listed Building
- Grade II Listed Building

NOTES

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LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Designated Heritage Assets Overview

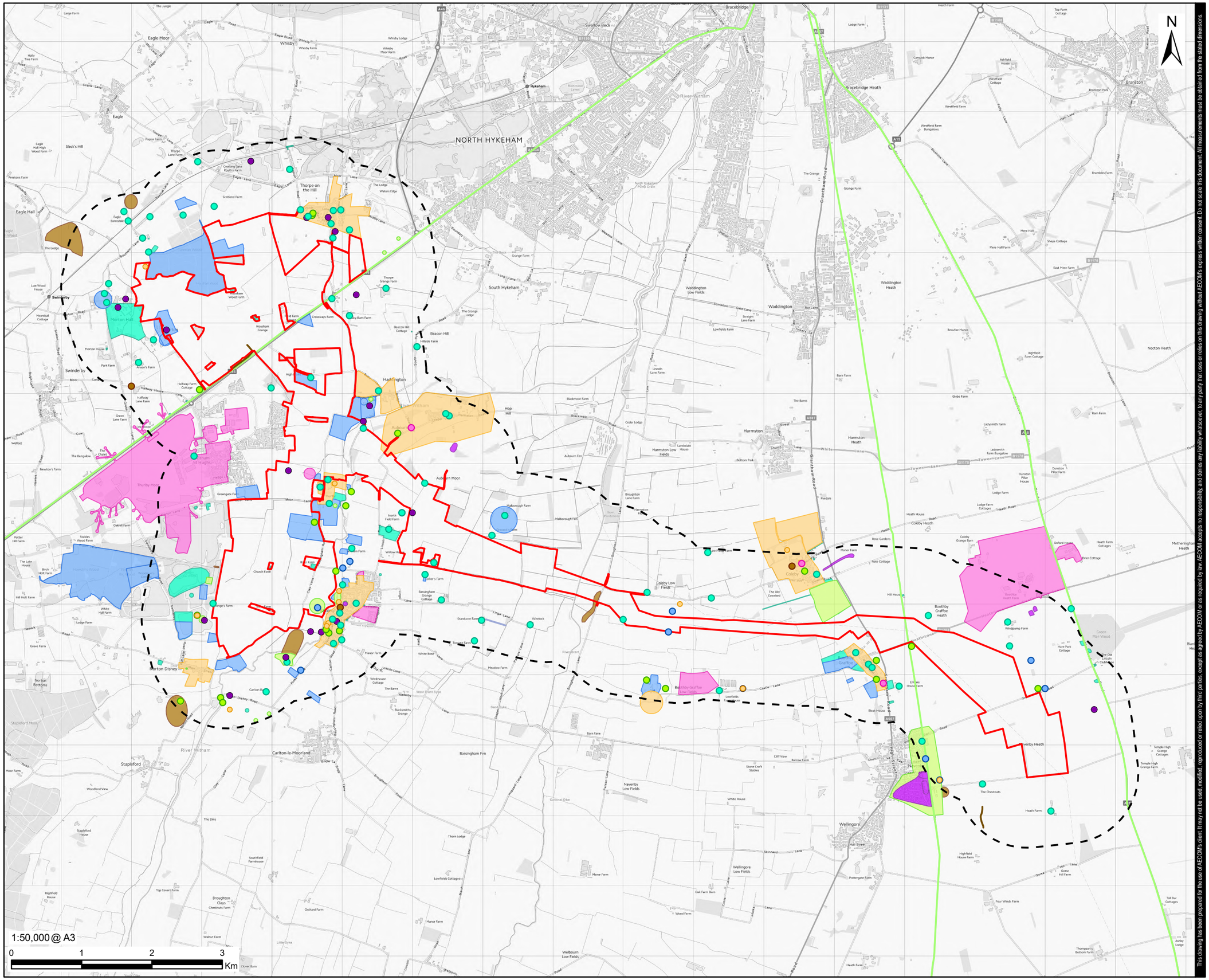
FIGURE NUMBER	REV.
Figure 3	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-21

Filename: \\ra.aecomnet.com\lfs\EMEA\London-UKLON06\Legacy\UKLON06PPSW001\UKLON06PPSW001-V-1\DPE\Library\GIS_DATA\Projects\Fosse Green Energy Park\02_Maps\Environmental Statement\Chapter 07 - Heritage\ES_Chapter07_Heritage_NonDesignatedFigures.aprx



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PROJECT

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CLIENT

Fosse Green Energy Ltd

CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- 1km Study Area
- Prehistoric Heritage Asset
- Roman Heritage Asset
- Early Medieval Heritage Asset
- Medieval Heritage Asset
- Post Medieval Heritage Asset
- Modern Heritage Asset
- Undated Heritage Asset

NOTES

LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

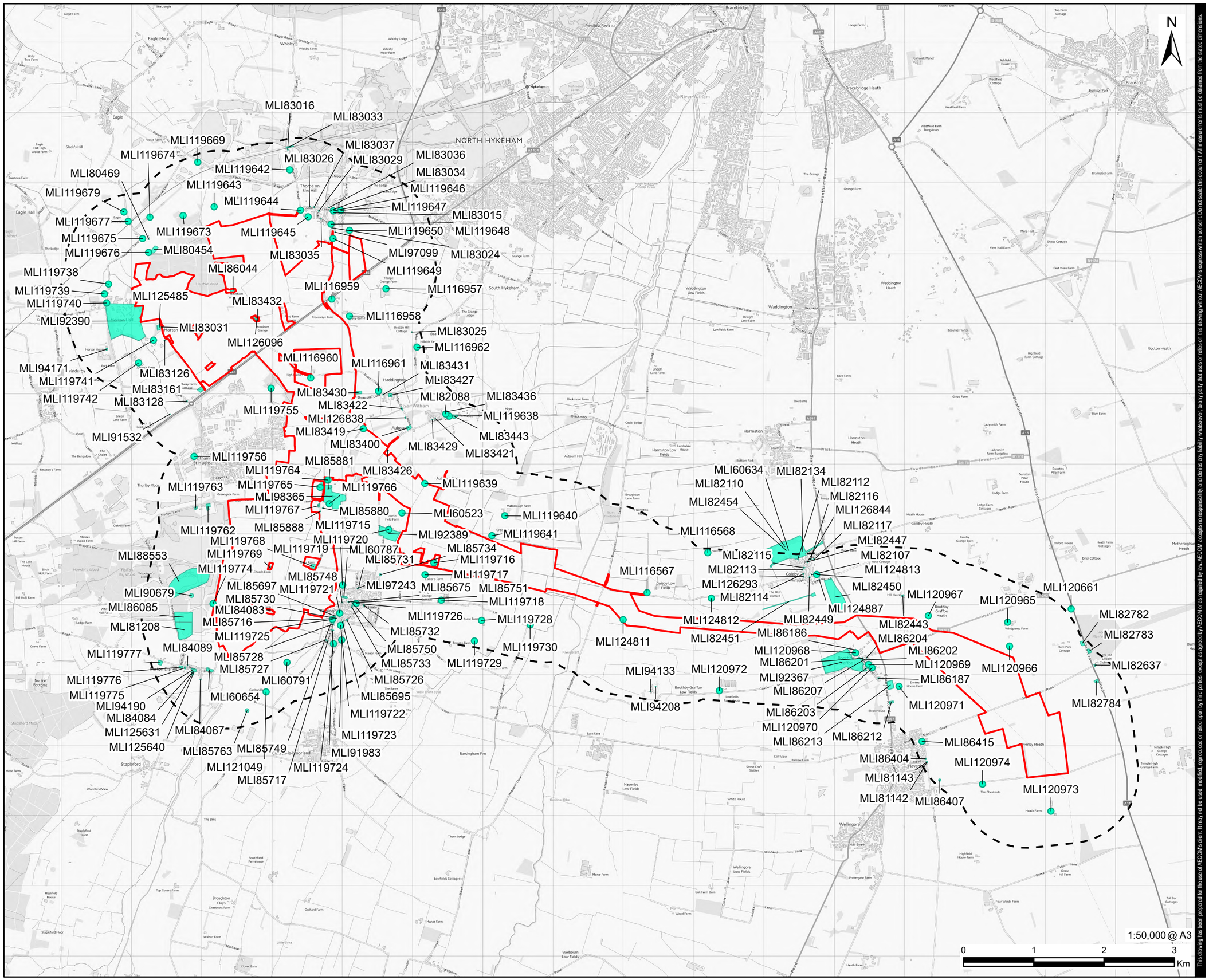
FIGURE TITLE

Non-Designated Assets Overview

FIGURE NUMBER	REV.
Figure 4 SHEET 1	02

DOCUMENT REFERENCE

EN010154/APP/6.4



Project No.: 60700987 Drawn: HW Checked: AM Approved: LB Date: 2025-08-21

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CONSULTANT

AECOM Limited
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LEGEND

- DCO Site Boundary
- 1km Study Area
- Post Medieval Heritage Asset

NOTES

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LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Non-Designated Assets - Post Medieval

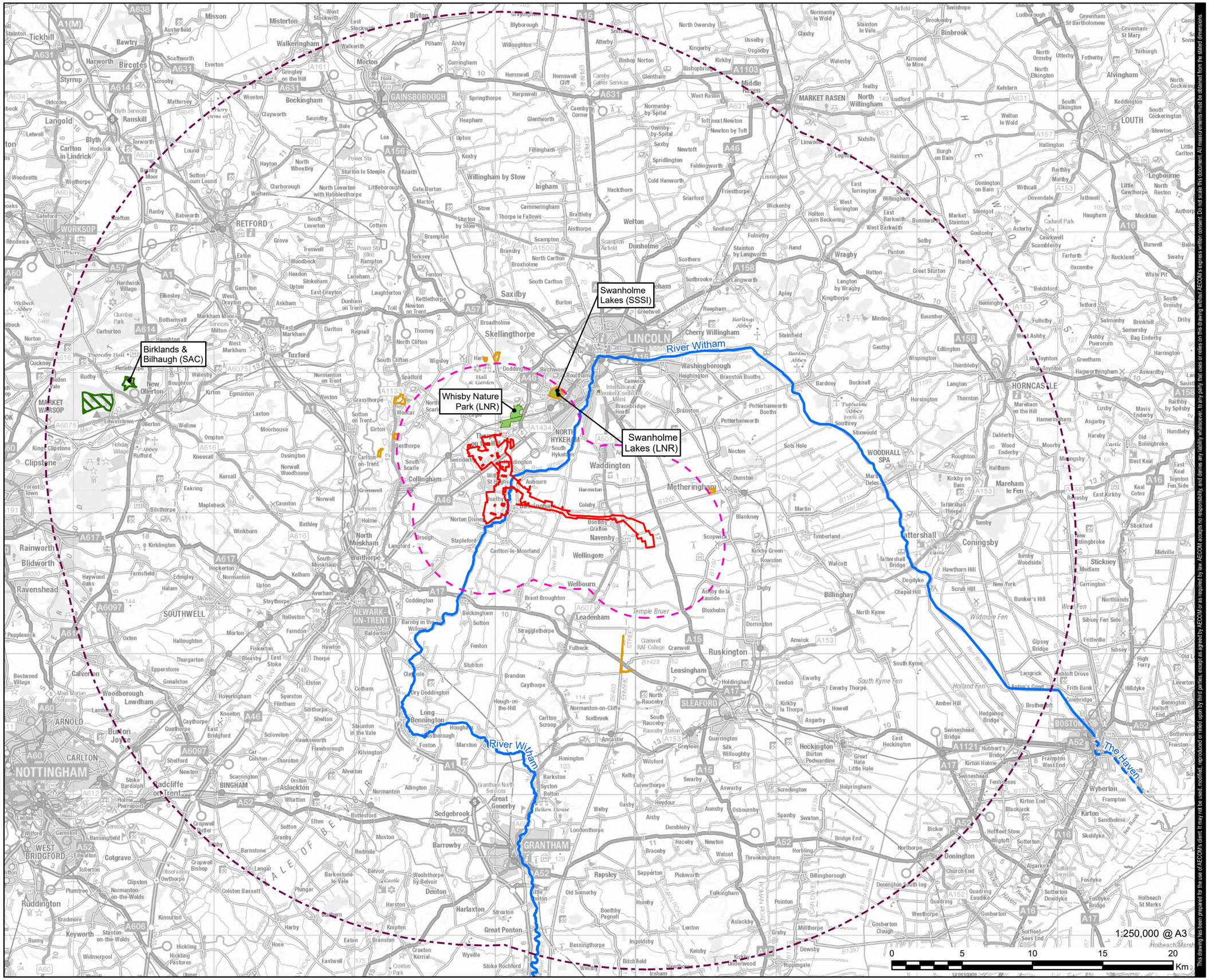
FIGURE NUMBER	REV.
Figure 4 SHEET 2	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Revision: 01 Drawn: BF Checked: LL Approved: MP Date: 2025-08-22

Filename: \\ra.aecomnet.com\ds\EMEA\London\UKLON06\Legacy\UKLON06PPSW001\UKLON06PPSW001-V1\DPEL\Library\GIS_DATA\Projects\Fosse Green Energy Park\02_Maps\Environmental Statement\Chapter 08 - Ecology\FGE_Figure8_DesignatedSites\FGE_Figure8_DesignatedSites.aprx



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PROJECT

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AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land not included in the DCO Site Boundary
- 5km Study Area
- 30km Study Area
- River Witham

International Sites within 30km of Site

- Special Areas of Conservation (SAC)

Statutory Sites within 5km of Site

- Site of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)

NOTES

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LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Sites statutorily designated for their biodiversity value

FIGURE NUMBER	REV.
Figure 5	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Revision: 01 Drawn: BF Checked: LL Approved: MP Date: 2025-08-22

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Mr Nevile's Pits East, Whisby Pits Complex (LWS)
Whisby Nature Park, Whisby Pits Complex (LWS)
Mr Nevile's Pits West, Whisby Pits Complex (LWS)
Teal's Lake, Whisby Pits Complex (LWS)
Hykeham Railway Line, Whisby Nature Park (LWS)
North Hykeham Gravel Pit (LWS)
Tunman Wood North (LWS)
Eagle Hall Wood (LWS)
Ski World, Whisby Pits Complex (LWS)
Tunman Wood (LWS)
Brant Washlands (LWS)
Harmston Quarry (LWS)
Brant Plantation (LWS)
High Dike, Coleby Mill to Harmston Verges (LWS)
Coleby, Heath Road Verges (LWS)
Hawdin's Wood (LWS)
Butt Lane Pit (LWS)
Boothby Graffoe Road Verges (LWS)
Norton Big Wood (LWS)
River Witham, Aubourn to Beckingham (LWS)
Navenby, Green Man Road Verges (LWS)
Green Man Lane (LWS)
Stapleford Moor (LWS)
A15, Green Man Road to Cuckoo Lane (LWS)
Navenby Heath Road Verges (LWS)
Gorse Lane (LWS)
High Dike, Long Lane to Navenby Verges (LWS)
Gorse Hill Lane Verges (LWS)
Wellingore Heath Road Verges (LWS)

1:60,000 @ A3

0 1 2 3 4 Km

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Fosse Green Energy Ltd

CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land not included in the DCO Site Boundary
- 2km Study Area
- Local Wildlife Site (LWS)

NOTES

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LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Sites non-statutorily designated for their biodiversity value

FIGURE NUMBER	REV.
Figure 6	02

DOCUMENT REFERENCE

EN010154/APP/6.4

Revision: 01 Drawn: BF Checked: LL Approved: MP Date: 2024-10-18

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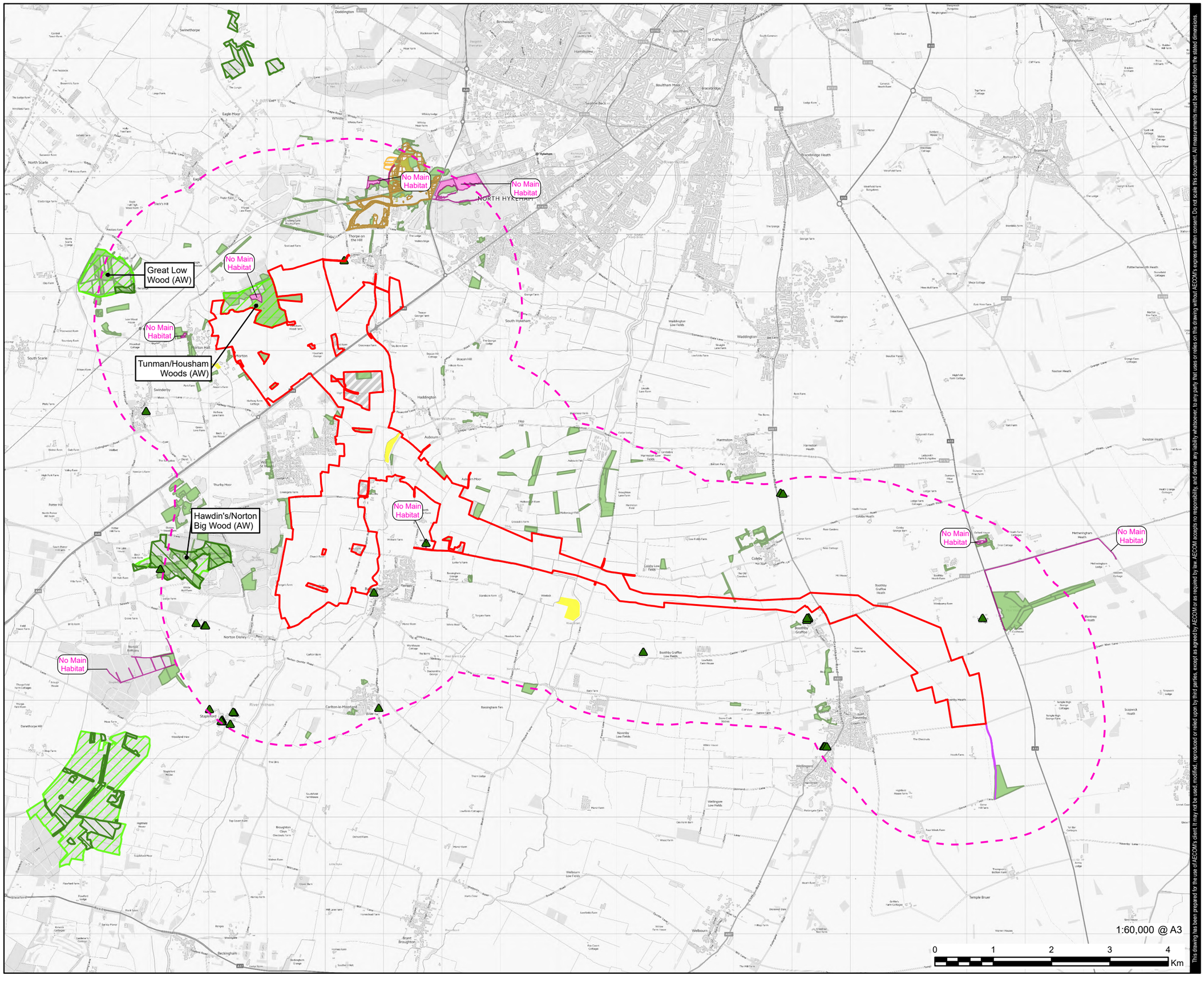

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PROJECT

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CLIENT

Fosse Green Energy Ltd

CONSULTANT

AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP, UK
[redacted]

LEGEND

- DCO Site Boundary
- Land not included in the DCO Site Boundary
- 2km Study Area
- Ancient & Semi-Natural Woodland
- Ancient Replanted Woodland

Priority Habitats Inventory (within study area)

- Coastal and floodplain grazing marsh
- Deciduous woodland
- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland heathland
- Reedbeds
- Traditional orchard
- No main habitat but additional habitats present

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LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

DCO Submission

FIGURE TITLE

Location of Ancient Woodland and Priority Habitats identified during the desk study

FIGURE NUMBER	REV.
Figure 7	02

DOCUMENT REFERENCE

EN010154/APP/6.4