Springwell Solar Farm

Environmental Statement

Non-Technical Summary

EN010149/APP/6.5
November 2024
Springwell Energyfarm Ltd

APFP Regulation 5(2)(a)
Planning Act 2008
Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009

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1. Background and Context

Introducing Springwell Solar Farm

Springwell Solar Farm (referred to in the Environmental Statement as the 'Proposed Development') is a proposed Solar Photovoltaic electricity generating and battery storage facility with associated infrastructure which would allow for the generation and export of electricity exceeding 50 megawatts. Springwell Solar Farm encompasses approximately 1,280 hectares located within the administrative areas of North Kesteven District Council and Lincolnshire County Council (the 'Site').

The Applicant

Springwell Energyfarm Limited is a joint venture between EDF Renewables and Luminous Energy.

Environmental Impact Assessment

Environmental Impact Assessment is the process that identifies the key environmental effects resulting from the construction, operation and, where relevant, decommissioning of a proposed development. It suggests ways that these effects can be avoided, reduced or managed. Environmental Impact Assessment is a requirement of United Kingdom law for certain developments that have the potential to cause significant environmental effects.

An Environmental Impact Assessment has been undertaken for Springwell Solar Farm, the findings of which are presented in the Environmental Statement.

Purpose of this Non-Technical Summary

This document is a Non-Technical Summary of the findings of the Environmental Impact Assessment, which are reported in the Environmental Statement. The Environmental Statement is made up of a number of documents (as set out in **Plate 1)**.

The Environmental Statement has been prepared to accompany the Development Consent Order Application, as required by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, This is to ensure that the Examining Authority (who considers the Development Consent Order Application), and the Secretary of State (who makes the ultimate decision as to whether consent should be granted) are aware of the likely significant effects on the environment as a result of Springwell Solar Farm when taking their decision.

This Non-Technical Summary has been prepared to introduce Springwell Solar Farm, explain the likely significant environmental effects of the construction, operation (including maintenance) and decommissioning of Springwell Solar Farm, and the measures proposed to protect the environment.

Non-Technical Summary	Summarises the Environmental Impact Assessment and the Environmental Statement in non-technical language.
Volume 1: Environmental Statement Main Report	Discusses the findings of the Environmental Impact Assessment
Volume 2: Figures	Presents the figures referenced throughout the Environmental Statement Main Report.
Volume 3: Appendices	Provides the accompanying appendices to the Environmental Statement Main Report.
Volume 4: Visualisations	Illustrations that show how Springwell Solar Farm may appear in the landscape once it has been built.

Plate 1 Content of the Environmental Statement

Need for Springwell Solar Farm

Springwell Solar Farm is essential to the United Kingdom's plan to rapidly decarbonise its electricity sector. Solar generation contributes significantly to energy security and is one of the most affordable renewable energy technologies in the United Kingdom. The need for solar energy is urgent, as the United Kingdom requires significantly more energy capacity from projects than is currently in development to meet its energy goals.

Solar energy supports key government energy policies, promoting decarbonisation, stabilising energy prices, and offering opportunities for biodiversity improvements. Springwell Solar Farm would play a critical role in addressing climate change on both a national and global scale.

2. Location of Springwell Solar Farm

The Site

Springwell Solar Farm is located within the administrative areas of North Kesteven District Council and Lincolnshire County Council, centred approximately at Ordnance Survey National Grid reference TF055566, and comprises approximately 1,280 hectares of land (the 'Site').

The Order Limits is the maximum area of land required for the construction, operation (including maintenance) and decommissioning of Springwell Solar Farm. It includes the infrastructure and any land set aside for landscaping, ecological and biodiversity enhancements, recreational connectivity and access. The Order Limits are presented on **Figure 1: Location Plan** at the end of this Non-Technical Summary. For clarity, for the purpose of this Non-Technical Summary, the term "Site" is used in this context as it represents the area within the "Order Limits." The term "Order Limits" is specifically used in the Development Consent Order and is consistently applied throughout the Environmental Statement.

The Site is divided into three parcels of land (see **Figure 2: The Site** at the end of this Non-Technical Summary):

- **Springwell West**: Characterised by open agricultural landscape and lying adjacent to the Bloxham Wood Nature Reserve in the south-east.
- **Springwell Central**: Located between Springwell West and East, adjacent to Royal Air Force Digby and B1191 to the west, Ashby de la Launde to the south and relatively open agricultural fields to the east.
- **Springwell East**: The northern and easternmost parcel of land, surrounded by the settlements of Scopwick, Kirkby Green, and Blankney, with small woodlands and hedgerows.

Settlements and infrastructure

The Site is located near the settlements of Blankney, Scopwick, Kirkby Green, and Ashby de la Launde, with Metheringham, Ruskington, Navenby, and Digby within 3 kilometres. The Royal Air Force Digby Station, now housing the tri-service Joint Service Signals Organisation, is adjacent to the northern part of Springwell West, though flying operations ceased in 1953.

Current terrain and use of the land

The land within the Site is primarily agricultural fields, interspersed with hedgerows, small woodland blocks and farm access tracks. These fields typically contain dried grass, lucerne, maize, spring barley, sugar beet, winter barley and winter wheat (**Plate 2**).

The geology includes varied superficial deposits and a bedrock of clay, limestone, and mudstone.

Plate 2 Agricultural fields within the Site

Access

The Site is crossed by several major and minor roads, including the A15 Sleaford Road, a key north-south route, and the B1191, which provides access to nearby settlements such as Scopwick. There is also an extensive network of public rights of way connecting the surrounding settlements, including four walking routes in Springwell East: the Spires and Steeples Trail; Scopwick Loop; Kirkby Green Loop; and, Blankney Circuit (See **Figure 3: Existing Public Right of Way across the Order Limits** at the end of this Non-Technical Summary).

Designated, natural and historic assets

The Site is not covered by any statutory ecological designations. The closest European designated ecological site is the Wash and North Norfolk Coast Special Area of Conservation, approximately 35 kilometres to the east. Seven Local Wildlife Sites are located within or adjacent to the Site. There is no ancient woodland within the Site, though several small woodland plantations exist. The nearest Site of Special Scientific Interest is Metheringham Heath Quarry, 2 kilometres to the north.

The Site includes one Grade II listed building (Mile Post, 20 metres south of Ashby Farm Lodge), with many heritage assets within 5 kilometres, including listed buildings and scheduled monuments. Nearby conservation areas include Scopwick and Blankney, and the Site is near two Main Rivers. Most of the Site falls within Flood Zone 1, with some areas in Flood Zones 2 and 3, and a small part to the west of Scopwick falls within a Source Protection Zone.

3. Springwell Solar Farm

The design of Springwell Solar Farm has evolved throughout the Environmental Impact Assessment process to avoid, reduce or manage environmental effects and in response to consultation and engagement feedback, where appropriate.

Springwell Solar Farm includes the key components outlined below in **Plate 3**.

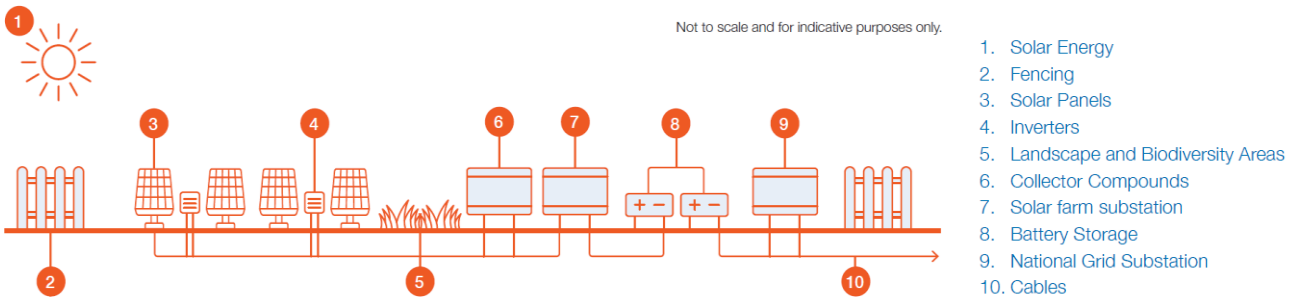


Plate 3 Key components of Springwell Solar Farm

Springwell Solar Farm will use energy from the sun (**Plate 3: Number 1**) to generate electricity, supported by battery storage and a substation to feed the electricity into the national grid. Springwell Solar Farm will be protected by fencing (**Plate 3: Number 2**) to keep the Site secure. The solar panels (**Plate 3: Number 3**) are set up in rows (known as 'strings'), connected to each other by cables to transfer the electricity generated by the solar panels to inverters.

Inverters (**Plate 3: Number 4**) are needed to convert the direct current electricity generated by the solar panels into alternating current electricity, which is suitable for use in homes and businesses.

Inverters will be located underneath the solar panels or in areas sometimes referred to as the 'Balance of Solar System'. The 'Balance of Solar System' also includes switchgears (which control the electrical equipment), and transformers (which 'step up' the voltage to the required level for sending to Springwell Substation).

New landscape and biodiversity areas (**Plate 3: Number 5**) will be created to help screen Springwell Solar Farm and increase biodiversity across the Site.

Collector compounds (**Plate 3: Number 6**) will be used to reduce the amount of underground cabling needed by collecting electricity from a number of inverters.

Springwell Substation (**Plate 3: Number 7**) will receive all of the electricity, step up the voltage and send it to the National Grid Navenby Substation (**Plate 3: Number 9**) to enter the electricity network.

Battery storage (**Plate 3: Number 8**) will store electricity at times when demand is lower and releases it to the national grid when it is most needed.

Cables (**Plate 3: Number 10**) connect all the different parts of Springwell Solar Farm together.

It should be noted that the National Grid Navenby Substation does not form part of this Development Consent Order Application. Instead, a separate planning application will be submitted by National Grid to North Kesteven District Council. It is anticipated that the National Grid Navenby Substation will be located north of Heath Lane, Navenby. A non-statutory consultation for that proposed development has been undertaken by National Grid.

Project Parameters and 'Rochdale Envelope'

The design of Springwell Solar Farm follows an iterative process informed by environmental assessments, consultations, and stakeholder engagement. A framework for good design was developed early in the project, based on local context, affected people and potential benefits. While the final design will be determined after the Development Consent Order is granted to allow for technological advancements, Springwell Solar Farm maintains flexibility using the 'Rochdale Envelope' approach. This method sets maximum parameters (for example, size, height, and location) for assessing environmental impacts. It ensures that a realistic worst-case scenario has been fully considered, meaning the environmental effects will not exceed those assessed in the Environmental Statement. These parameters are secured by the Development Consent Order, ensuring that Springwell Solar Farm cannot be constructed outside the assessed boundaries, helping to avoid or minimise environmental impacts effectively.

Components of Springwell Solar Farm

Springwell Solar Farm, covering approximately 1,280 hectares within the Site, includes several key components, each designated by specific work numbers. These Work Numbers correspond to specific areas shown on the **Works Plans [EN010149/APP/2.3]**. If Springwell Solar Farm receives consent, each work package would be limited to its designated location, ensuring that each component is constructed within its specified area on the **Works Plans [EN010149/APP/2.3]**. The Work Numbers for these packages are:

- Work Number 1: Ground-mounted Solar Photovoltaic Generating Station.
- Work Number 2: Springwell Substation Compound.
- Work Number 3: Satellite Collector Compounds.
- Work Number 4: Battery Energy Storage System Compound.
- Work Number 5: Grid Connection Infrastructure.
- Work Number 6: Cables.
- Work Number 7: Temporary Construction and Decommissioning Compounds.
- Work Number 8: Highways Works (Facilitate access).
- Work Number 9: Green Infrastructure, which includes new public rights of way, permissive paths, a community growing area, and landscaping features.

Additional permitted works include fencing, drainage, security measures, track improvements, access infrastructure, landscaping, biodiversity measures, utility relocations, and earthworks.

The location of each of the key components of Springwell Solar Farm are illustrated in **Figure 4 – Zonal Masterplan**.

Construction of Springwell Solar Farm

Programme

The construction of Springwell Solar Farm is anticipated to take place in two phases over a 48-month construction period, starting in 2027. The final programme will be based on the detailed layout design and potential environmental constraints on the timing of construction activities. Springwell Solar Farm will connect to the national grid electricity network in two stages, first in 2028 and then in 2030. Construction is scheduled to begin in Quarter 1 2027 (January to March) and will continue until Quarter 4 2030 (October to December). This phased connection approach means that part of Springwell Solar Farm will start supplying power to the national grid in 2028, while the remaining parts will become operational by 2030. Overlapping construction activities are likely across different parts of the Site, as indicated in **Table 1**.

Table 1 Indicative construction programme

Site	Year			
	2027	2028	2029	2030
Springwell Substation phase 1				
Springwell Substation phase 2				
Battery Energy Storage System				
Springwell West				
Springwell Central				
Springwell East				

Pre-commencement activities

Initial works likely to take place to prepare the Site for construction would include enabling works, including installation of any internal access tracks, installation of temporary construction compounds and installation of fencing. Further activities would involve (not necessarily in order):

- Environmental, intrusive archaeological and geotechnical surveys for the purpose of assessing ground conditions;
- Removal of plant and machinery;
- Above ground Site preparation for temporary facilities;

- Remedial work in respect of any contamination or other adverse ground conditions;
- Temporary display of site notices or advertisements;
- Diversion of existing services and the laying of temporary services;
- Site clearance (including vegetation removal);
- Installation of the perimeter fencing and security features;
- Demolition of Beckside Barn within Springwell Central; and
- Work No.8 – Highways (works to faciliate access to Work No.1 to 7 and 9).

Construction activities

Key activities that are likely to take place during the construction phase include (but not limited to):

- Site preparation (site levelling, vegetation clearance, and perimeter fencing installation);
- Establishing temporary construction compounds and welfare facilities;
- Upgrading and creation of field accesses, and constructing new access roads;
- Soil storage and management of waste;
- Solar PV development construction including pilling, installing mounting structures, foundation excavation for inverters, transformers and switchgear (where necessary)
- Cable installation and trenching;
- Construction drainage;
- Springwell Substation, Main Collector Compound, Satelliete Collector Compound and BESS construction including pilling, foundation excavation and pouring of concrete foundation bases;
- Installation of control, monitoring and communication systems;
- Testing and commissioning; and
- Site reinstatement (returning any land during construction for temporary purposes to its previous condition).

Potential disruption during construction

During construction, there could be changes to amenity of non-motorised users through the provision of temporary road closures or temporary traffic management; however, any changes would be temporary in nature and mitigated through appropriate signage and alternative provisions for non-motorised users being made to ensure amenity is not adversely impacted.

Junction upgrade works at the A15/Gorse Hill Lane junction will necessitate the closure of the section of Gorse Hill Lane that is being improved. It is likely that this will need to be closed for a month to allow the works to be completed.

There will be no permanent closures of public rights of way during the construction of Springwell Solar Farm. However, it may be necessary to temporarily close or divert public rights of way during construction for up to six months.

Construction access

The primary construction access to the Site will be from the A15 Sleaford Road via Gorse Hill Lane and the B1191. Heavy goods vehicles will primarily use this route, with access to the Springwell Substation via Gorse Hill Lane and the northern fields through the same route, while southern fields will be accessed via Temple Road. A previously considered secondary route using the B1202 was deemed unsuitable based on stakeholder feedback.

Abnormal indivisible loads, meaning extremely large or heavy items that cannot be broken down into smaller parts for transport, will arrive from Immingham port through the A180, M180, and A15, with local road widening planned for Gorse Hill Lane. Various access points for construction have been identified, with around ten staff per compound initially working on site during the initial site set-up, increasing to an average of 400 workers, with a maximum of up to 650 construction workers at the peak construction period across the Site as a whole. The traffic assessment estimates 1.5 workers per vehicle, promoting carpooling and possibly a commuter bus service. Working hours will consist of one 12 hour shift, with travel planned from 7am to 7pm Monday to Friday; and 7am to 12 noon on Saturday.

Access points for construction and operation are shown in **Figure 4: Zonal Masterplan** at the end of this Non-Technical Summary.

Commissioning

Following construction, Springwell Solar Farm will enter a six month commissioning period, during which it will undergo several testing stages before generating electricity for the national grid network. This process has been incorporated in the 48-month construction phase and will involve inspections and testing of electrical systems and equipment to ensure everything is operational.

Operational (including maintenance) phase

Springwell Solar Farm will have an operational life of 40 years per phase. During this phase, routine activities will include servicing, maintenance, replacement of solar and battery energy storage system equipment, cleaning of solar panels, and vegetation management. Any replaced equipment will follow the waste hierarchy, which means that the Applicant will focus firstly on reuse and recycling, and electrical waste will be disposed of in compliance with the relevant regulations to minimise environmental impact. If operational equipment needs replacement, some heavy goods vehicle activity is likely to occur.

It is expected that up to 24 permanent staff will be onsite per day, with additional staff for less frequent maintenance tasks.

The land around the solar panels and associated areas will be managed according to the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**. This Plan will include planting, screening and habitat creation to enhance the ecological

value of the Site and support local wildlife. All operational activities will comply with the **Outline Operational Environmental Management Plan [EN010149/APP/7.10]**, covering working hours, lighting, parking, security, monitoring and waste management. Additionally, an **Outline Battery Safety Management Plan [EN010149/APP/7.14]** will ensure the safety of the battery energy storage system throughout its lifecycle, addressing design, operation, disposal and emergency planning.

Decommissioning phase

Springwell Solar Farm will operate for 40 years per phase, followed by decommissioning, which will involve removing all Solar Photovoltaic infrastructure, including, substations and the battery energy storage system . Temporary compounds will be set up for equipment and staff parking, then removed post-decommissioning (**Plate 3**).

All above-ground infrastructure will be dismantled responsibly, with materials managed for reuse or recycling. Solar panels, which are 99% recyclable, will be assessed for recycling options. Concrete and hardstanding will be removed to a depth of 1 metre, while below-ground cables will remain and would be disabled.

The land will be returned to the landowners, who is expected to restore it for agricultural use. Established habitats would remain when the Site is handed back to landowners, except for the planting within Field Tb2, which will be removed to allow the field to be returned to agricultural use.

The Site will be restored according to the **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**, the details of which will require local planning authority approval at that time.

Decommissioning is expected to take approximately 24 months and may occur in phases.

Environmental Management

The following outline management plans are submitted in support of the Development Consent Order Application:

- **Outline Construction Environmental Management Plan** and **Outline Site Waste Management Plan [EN010149/APP/7.7]**;
- **Outline Operational Environmental Management Plan [EN010149/APP/7.10]**;
- **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**;
- **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**;
- **Outline Construction Traffic Management Plan [EN010149/APP/7.8]**;
- **Outline Public Right of Way and Permissive Path Management Plan [EN010149/APP/7.12]**;
- **Outline Employment, Skills and Supply Chain Plan [EN010149/APP/7.20]**;
- **Outline Written Scheme of Investigation [EN010149/APP/7.15]**;

- **Outline Drainage Strategy [EN010149/APP/7.16]**;
- **Outline Soil Management Plan[EN010149/APP/7.11]**; and
- **Outline Battery Safety Management Plan [EN010149/APP/7.14]**.

If consent is granted for Springwell Solar Farm, the Applicant will be required to comply with requirements that ensure the implementation of the mitigation measures in these plans. These plans set out how different phases and aspects of Springwell Solar Farm will be controlled, managed and/or monitored.

4. Reasonable Alternatives Considered

Alternatives considered

The assessment of alternatives has been framed within the context of the clear and pressing need for Springwell Solar Farm. The consideration of alternatives has followed the guidelines set out in relevant planning policies, including the Overarching National Policy Statement for Energy (EN-1), National Policy Statement for Renewable Energy Infrastructure (EN-3), and National Policy Statement for Electricity Networks Infrastructure (EN-5).

The alternatives studied for Springwell Solar Farm include alternative sites, other renewable technologies, other solar technologies, and other layout options. The 'no development' option was dismissed as it would not support the renewable electricity generation required to meet the United Kingdom's net zero targets.

Approach to Site selection

The Applicant conducted a systematic site selection process, considering technical, environmental, and economic factors to identify a suitable location for a large-scale Solar Photovoltaic development.

The project aimed to establish a Nationally Significant Infrastructure Project scale solar farm, generating a minimum of 250-500 megawatts, on a site comprising a minimum of 1,000 acres. Criteria for site selection included proximity to grid connections, minimal impact on sensitive environments, accessible locations for construction, and land that could be acquired without compulsory measures. The Applicant also considered guidance from national policy, which identifies essential requirements for large-scale solar projects: sufficient land area, a viable grid connection, and adequate sunlight levels to ensure efficient energy generation.

Due to limited locations in the United Kingdom that meet all these criteria, including the necessary land availability, grid access, and sunlight levels, the Applicant identified the East Midlands as a potential location. This region features large areas of flat land suitable for solar, along with adequate sunlight and grid capacity, due to the decommissioning of coal plants in the area. After consulting with the National Grid in late 2020, the Applicant focused on two major overhead transmission lines with capacity due to recent fossil fuel plant closures. Although these lines had available capacity, they required new connection points for a solar project. As a result, the Applicant worked with the National Grid, which planned to develop a new substation to enable connections in the region.

During the search, the Applicant aimed to identify areas close to the transmission lines with specific features that could support an National Significant Infrastructure Projects scale project. Ideal sites would have at least 1,000 acres, involve a minimal number of landowners (preferably just one), and be available for voluntary acquisition, simplifying site assembly and allowing more flexibility in the project’s layout. These sites were evaluated based on grid security, proximity to infrastructure, accessibility, and landscape compatibility, with a preference for non-prime agricultural land, lower flood risk areas, and limited visual impact.

The chosen site met the main selection criteria, providing the necessary conditions for the construction and operation of a large-scale solar project while minimising potential environmental impacts and maximizing efficiency.

Alternative sites

The Applicant initially identified five potential landholdings across Lincolnshire, Rutland, and Cambridgeshire for the solar farm, including the current site at Blankney Estate. Each site met key selection criteria, such as large land area, proximity to grid infrastructure, and limited landowners, with locations near the necessary transmission lines. Sites considered included land near Sleaford, Grantham, Rutland Water, and Peterborough, ranging from around 1,000 to 3,500 acres.

Early assessments showed that the Blankney Estate had the most appropriate characteristics, including a large and regular field layout, suitable topography, accessible location, and minimal environmental constraints. Additionally, negotiations with the landowner at Blankney Estate progressed well, giving the Applicant confidence in this location as the best option. Consequently, the other sites were set aside, and the Blankney Estate was selected as the preferred site for the Proposed Development.

Alternative renewable technologies

The Applicant did not consider alternative types of renewable energy generation technologies such as wind or hydrogen for the Site. Onshore wind energy was deemed unsuitable for the local area due to the flat terrain, which would cause significant visual and landscape effects, particularly given the height of wind turbines. Additionally, nearby residential areas may result in issues associated with shadow flicker and noise from wind turbines. Hydrogen technology was not considered suitable due to its construction challenges and lack of commercial viability compared to solar energy. In addition, offshore/marine technologies such as offshore wind and tidal power have not been considered because of the proximity to where capacity in the transmission networks exists. Therefore, solar technology was identified as the most suitable renewable energy generating solution for the Site.

Alternative solar technologies

The Development Consent Order Application will maintain flexibility under the ‘Rochdale Envelope’ to incorporate the latest solar technology at the time of construction. However, alternative solar technologies and design options have been considered and several have been discounted:

- **Tracker panels**, which adjust their position to follow the sun, were discounted due to their increased height, which would lead to greater landscape and visual impacts. Small areas within the Site were considered suitable, but overall, the installation would not be commercially viable or environmentally favourable.
- **East-west fixed panels** were discounted despite offering higher energy production in the evening and the morning. The inclusion of a Battery Energy Storage System negates this benefit, as they can store energy generated during peak times for use at other times. Additionally, east-west fixed panels would

reduce the potential for biodiversity net gain and enhancements by limiting light exposure to the ground, decrease space for biodiversity planting beneath the panels, and increase water runoff due to their denser layout compared to south-facing panels.

Alternative site layouts

The design and layout of Springwell Solar Farm have been part of an iterative process informed by environmental assessments, a site selection assessment, design principles and controls, and engagement with stakeholders and consultees.

This evolution includes three distinct design stages:

- **Design Stage 1** - Following the identification of the Site, initial plans were published between January and March 2023 during a non-statutory consultation phase and in the Environmental Impact Assessment Scoping Report in March 2023.
- **Design Stage 2** – Undertaken after the initial consultation. Feedback and environmental survey results were incorporated into updated plans published from January to February 2024 as part of the statutory consultation, which informed assessment within the Preliminary Environmental Information Report.
- **Design Stage 3** - Undertaken following the statutory and targeted consultation from July to August 2024, where feedback and further environmental assessments shaped the design plans that form the basis of the Environmental Statement and Development Consent Order Application.

Engagement throughout this process involved consultations with various stakeholders, including local councils, environmental agencies, and community organisations, with feedback informing the ongoing design development. Further details on the consultation process are available in the **Consultation Report [EN010149/APP/5.1]**.

Design Stage 1

Solar Photovoltaic development

After identifying the Site boundary, an initial assessment was conducted to determine the suitability of land for Solar Photovoltaic development based on environmental, social, and economic factors. Following desktop assessments and site visits, some fields within the Site were considered unsuitable for Solar Photovoltaic development and were discounted. Key reasons for discounting these fields included impacts on landscape character, visual settings, presence of high quality grassland suitable for reptiles, nearby residential areas, conservation areas, and heritage assets. For example, fields near Scopwick and Blankney were excluded due to visibility concerns, proximity to settlements, and impacts on cultural heritage assets.

Battery Energy Storage System

The Battery Energy Storage System design process considered two options at Design Stage 1:

- **Distributed Battery Energy Storage System**: This option involved locating several Battery Energy Storage System compounds across the Site, adjacent to the Collector Compounds.
- **Consolidated Battery Energy Storage System**: This option involved locating all Battery Energy Storage System infrastructure in one compound adjacent to Springwell Substation.

A constraints mapping exercise was conducted to identify which fields within the Site would be suitable for Battery Energy Storage System based on factors such as proximity to residential settlements, visual impacts, conservation areas, landscape visibility, views from public trails, listed heritage sites, flood zones, and the location of public rights of way.

Following this assessment, several fields were concluded to be not suitable for both the consolidated and distributed Battery Energy Storage System options. Only certain fields were considered viable for the consolidated Battery Energy Storage System option, while a larger number of fields were discounted for the distributed Battery Energy Storage System option across the Springwell East, Central, and West areas.

Springwell Substation

During Design Stage 1, a constraints mapping exercise and assessment was conducted to identify suitable locations for the Springwell Substation. This assessment, based on site visits, surveys, and desk-based studies, identified specific fields (Tb1, Tb2, Bcd082, Bcd106, Bcd114, Bcd128, Bcd138, Bcd139, Bcd140, Bcd141, and E1) as good options for development. These areas were chosen because of their favourable field shape and natural cover provided by nearby woodlands or tree belts, which could help reduce the impact on the landscape and visual amenity.

Figure 5: Field Numbering System at the end of this Non-Technical Summary shows the location of the fields mentioned above.

Design Stage 2

During Design Stage 2, the initial design was reviewed based on feedback from non-statutory consultations (January-March 2023) and emerging environmental survey results. The process involved a detailed environmental review and targeted engagement as well as technical design workshops. Key outcomes included:

- Borrow pits (a pit from which construction material, such as sand or gravel is excavated) were initially considered for construction; however, these were discounted during Design Stage 2 due to potential biodiversity, landscape, visual, soil and groundwater impacts.

- A minor change to the Site boundary was made to add a new permissive path to connect Scopwick and Royal Air Force Digby to provide environmental enhancement and/or community benefits.
- A revised layout was produced.

Several fields were discounted for Solar Photovoltaic development due to factors such as high-quality agricultural land, archaeological potential, visual impacts on the landscape and nearby properties, and flood risk. Fields that were removed from Solar Photovoltaic development were retained for mitigation, ecological enhancements and infrastructure. The Applicant also worked with landowners to understand how productive the land is and how easy it is to access. This helped identify areas that yield less produce. The Applicant also assessed whether fields that were ruled out for building could still be used for farming.

Battery Energy Storage System siting

During Design Stage 2, the distributed Battery Energy Storage System option was discounted due to limited suitable locations in Springwell East and Springwell Central, particularly due to landscape and visual impacts and the proximity to the residential settlements of Blankney and Scopwick. Following further assessment work, two potential locations within the north and south of Springwell West were considered suitable for the Battery Energy Storage System due to the close proximity to the A15 and the presence of existing screening.

Springwell Substation

The option of locating the Springwell Substation in the south of Springwell West was discounted due to the proximity to Bloxham Woods Nature Reserve and effects on the public rights of way, and greater biodiversity impacts. The central location within Springwell West was also rejected due to its exposed position within the landscape and increased landscape and visual effects. The proposed location in the north of Springwell West was the preferred option because it was close to the proposed National Grid Navenby Substation, reducing the required 400 kilovolt Grid Connection cable route.

Grid Connection Corridor siting

Given the short connection length, this corridor was chosen as it is the most direct route to minimise impact on the land, whilst avoiding key environmental constraints, including Gorse Hill Covert. Any alternative route would unnecessarily increase the length of the Grid Connection cable route, involve further road crossings and associated environmental impacts, including increased hedgerow and tree removal.

Design Stage 3

During Design Stage 3, the design of Springwell Solar Farm was reviewed and revised based on feedback from the statutory consultation (January to February 2024) and further environmental assessments. Several fields and elements were discounted for various reasons, including minimising visual, landscape and biodiversity impacts, addressing concerns raised by stakeholders, and reducing effects on residential areas and public rights of way. Key changes included lowering the height of Solar Photovoltaic modules in flood zones to minimise potential flooding

issues. Additionally, some fields were removed from the Site because they were no longer needed for mitigation. These include measures taken to protect the environment and reduce any adverse impacts of Springwell Solar Farm, such as preserving habitats or managing water runoff. Fields were also removed if they were no longer needed for cable routes, helping to further lessen environmental impacts..

Significant alterations involved adjusting Solar Photovoltaic development boundaries to reduce visual impacts, retaining some fields for mitigation or green infrastructure, and discounting areas deemed unsuitable for the Springwell Substation, Battery Energy Storage System, or Main Collector Compound due to visual, noise, and proximity concerns. Despite no longer being proposed for above ground infrastructure, some fields were retained within the Site for underground cabling or ecological enhancement purposes.

Battery Energy Storage System siting

The proposed location for the Battery Energy Storage System in the south of Springwell West was discounted due to likely noise effects on nearby residential areas and following feedback from statutory consultees. The location of the Battery Energy Storage System was refined to the north of Springwell West, excluding Fields Tb1 and Bcd082, as well as parts of Field Tb2, based on further landscape and noise surveys aimed at minimising effects on nearby properties like Toll Bar Cottage, Gorsehill Farm, and Thompson's Bottom Cottages.

The north western corner of Field Tb2 was selected for the Battery Energy Storage System because of its lower elevation, which helps reduce visual impact. This location also benefits from existing screening provided by Gorse Hill Covert, which provides screening from the north and offers a backdrop from the south and east. Additionally, this positioning allows for taller elements of the development in Springwell West as far away from the A15 as possible, leaving room for the creation of an earth bund along the road to further mitigate landscape and visual impacts for users of the A15.

Springwell Substation

The location of the Springwell Substation in the north of Springwell West was refined based on landscape and noise surveys and modelling to increase the distance to the surrounding residential properties to the north-west and south-east.

Grid Connection Corridor siting

The western section of the Grid Connection Corridor was discounted from the Site to increase the distance from Gorse Hill Covert and reduce the impact to high priority hedgerows and trees. Fields N1, N2, N4, and N4 were also excluded as they were no longer needed for cabling.

Satellite Collector Compound

The location of the Satellite Collector Compound in Field By22 was refined to reduce impacts on the public rights of way and archaeological findings. Similarly, the location in Springwell Central was refined to reduce noise levels and landscape and visual impacts near residential dwellings.

Access

A proposed secondary heavy goods vehicle construction route via B1202 was discounted due to safety concerns at the A15 junction. Minor highway improvements will be made to ensure safe passage for two heavy goods vehicles at specific locations, which are included within the Site.

The main construction compound was relocated northward to mitigate visual and noise impacts on nearby properties. Other access routes were adjusted based on reduced Solar Photovoltaic development and proximity to listed buildings.

Construction Compounds

Temporary Construction Compounds were downsized and relocated to areas within or close to Solar Photovoltaic development sites to minimise ground disturbance.

Green Infrastructure

Several additional public rights of way routes were included as part of Springwell Solar Farm based on feedback from statutory consultees. A community growing area was proposed in Field Md06, near Scopwick village.

The design has incorporated further landscape and ecological enhancements based on stakeholder engagement. This aims to achieve biodiversity net gain and community benefits.

Green infrastructure, including hedgerows and tree planting, is key to Springwell Solar Farm, serving as mitigation integrated within the design against environmental impacts.

5. Approach to the Environmental Impact Assessment

Environmental Impact Assessment process

Environmental Impact Assessment is a systematic process that examines the likely significant effects (beneficial or adverse) on the environment resulting from the construction, operation (including maintenance) and decommissioning of a proposed development. The process is shown on **Plate 4**, where the Environmental Statement is the last stage in this process.

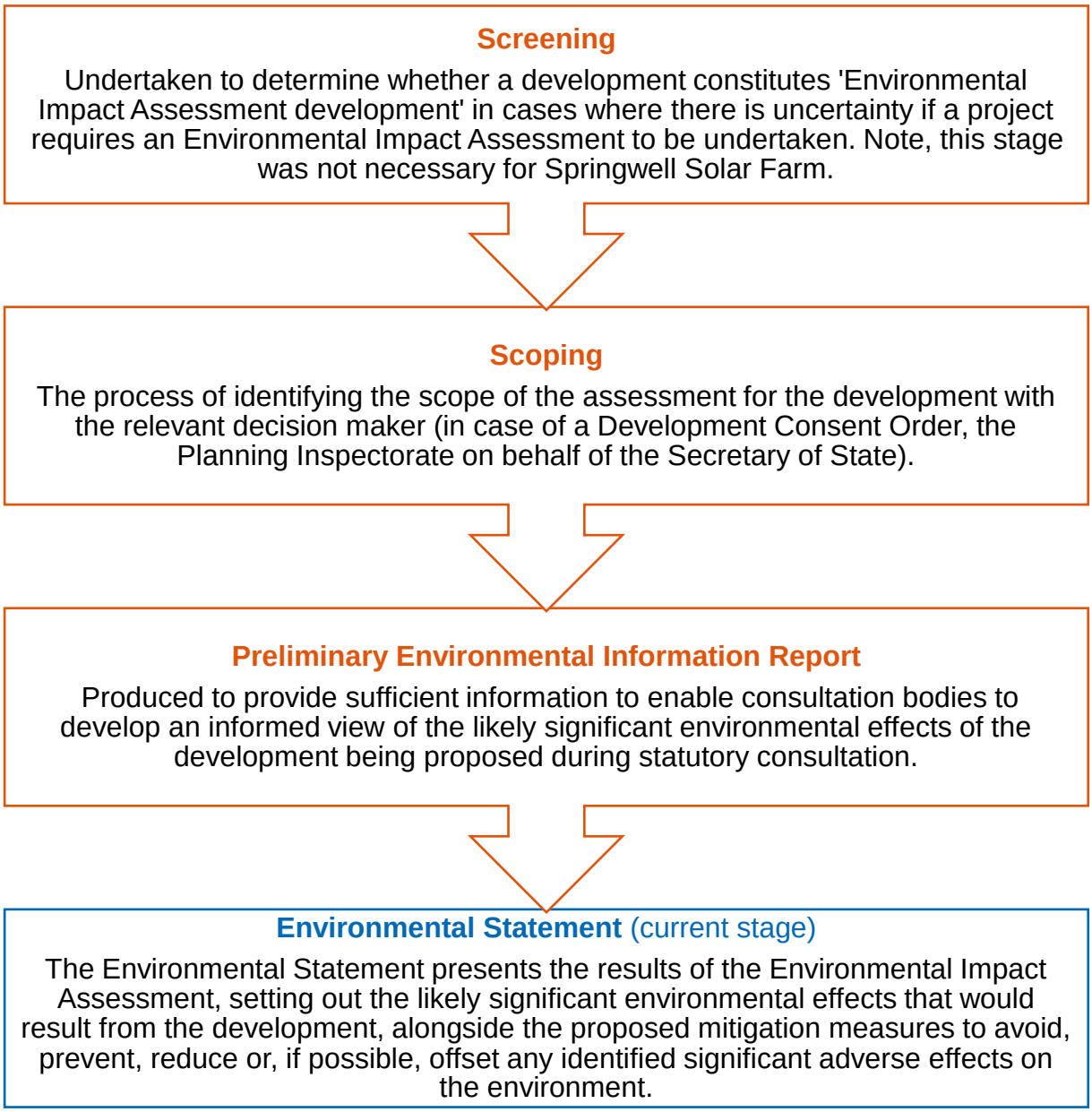


Plate 4 Main stages of the Environmental Impact Assessment process

An Environmental Statement has been submitted in support of the Development Consent Order Application. The Environmental Statement presents the results of the Environmental Impact Assessment undertaken for Springwell Solar Farm and sets out the likely significant environmental effects that would result from construction, operation (including maintenance) and/or the decommissioning, alongside the proposed mitigation measures to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects.

Objectives of the Environmental Impact Assessment

The Environmental Impact Assessment process aims to identify, assess, and mitigate the potential environmental effects of a proposed project before its approval and implementation. Its primary goals include:

- Set the relevant legal and planning policy framework;
- Document the consultation and engagement process that has informed the Environmental Impact Assessment;
- Outline any reasonable alternatives considered;
- Establish baseline environmental conditions at the Site and within the surrounding area;
- Identify, predict and assess the environmental effects associated with the proposed project;
- Identify, predict and qualitatively assess the cumulative effects of the proposed project, including those associated with other existing development and/or approved development(s);
- Identify suitable mitigation measures to avoid, prevent, reduce or, if possible, offset likely significant adverse effects on the environment and identify the likely significant residual effects following the implementation of these measures; and
- Identify monitoring measures where likely significant residual adverse effects are identified.

Scoping

An Environmental Impact Assessment Scoping Report was prepared by the Applicant in respect of Springwell Solar Farm and submitted to the Planning Inspectorate on 22 March 2023 and a Scoping Opinion was adopted by the Secretary of State on 2 May 2023.

The aim of the scoping process is to agree on the approach, methodology and how to carry out the Environmental Impact Assessment while identifying the environmental factors to be considered within the Environmental Statement. It establishes the receptors/matters that will comprise the scope of the assessment. Furthermore, the scoping process helps to identify the main effects that a development is likely to have on the environment, taking into account responses from prescribed consultees.

The following list presents the environmental factors that have been assessed in the Environmental Statement, having full regard to and reflecting the Scoping Opinion:

- Air quality;
- Biodiversity;
- Climate;
- Cultural heritage;
- Landscape and visual;
- Land, soil and groundwater;
- Noise and vibration;
- Population;
- Traffic and transport;
- Water; and
- Cumulative effects.

The Planning Inspectorate has agreed to scope out the following environmental factors from the Environmental Impact Assessment:

- **Glint and Glare** - Solar Photovoltaic modules are designed to absorb light, minimising reflection due to their dark colour and anti-reflective coatings. Although scoped out of the main assessment, a glint and glare study has been conducted and submitted as part of the Environmental Statement. This study identified a need for mitigation along a 700-meter section of the A15, where hedgerows will be infilled and maintained at a height of at least 3 meters. Until these hedges grow to full height, temporary screening will be used. The study assessed both ground-based receptors, including nearby roads, dwellings and railway receptors and airborne receptors, such as airfields, and embedded relevant mitigation into the design to address any potential effects.
- **Heat and Radiation** Significant sources of heat or radiation during construction, operation (including maintenance), or decommissioning are not anticipated. Heat and radiation sources have been identified and this has influenced the design, for example, by including spacing of battery containers and locating high voltage cables underground and spacing them a distances of 0.5 metres to 1 metre apart in the trench to avoid overheating.
- **Major Accidents and Disasters** - Safety regulations have been considered to prevent significant effects during all project phases. The potential impacts are still considered in the **Battery Energy Storage System (BESS) Plume Assessment [EN010149/APP/7.19]** submitted in support of the Development Consent Order and the water assessment (**Environmental Statement Volume 1, Chapter 15: Water [EN010149/APP/6.1]**, with any relevant mitigation measures detailed in and secured by the **Outline Construction Environment Management Plan [EN010149/APP/7.7]**, **Outline Operational Environment Management Plan**

[EN010149/APP/7.10] and **Outline Battery Safety Management Plan [EN010149/APP/7.14]**.

- **Utilities** - Further consultation with utility companies will be carried out and mitigate potential impacts during construction. A desk-based study of existing utilities has been conducted to inform the design of Springwell Solar Farm. Measures to protect against interference with below ground utilities during construction have been detailed in and secured by the **Outline Construction Environment Management Plan [EN010149/APP/7.7]**, as well as provisions included in the **Draft Development Consent Order (DCO) [EN010149/APP/3.1]** aimed at providing protection for utilities (called “protective provisions”).
- **Human Health –** Potential impacts related to human health (physical health, mental health and well-being) from Springwell Solar Farm during construction, operation (including maintenance) and decommissioning have been considered in the following assessments:
    - Air quality: Temporary effects on residents’ respiratory health during construction and decommissioning are assessed in **ES Volume 1, Chapter 6: Air Quality [EN010149/APP/6.1]**.
    - Landscape and visual: Potential impacts on health and well-being of residents and public right of way users, as well as on residential amenity, during construction and decommissioning, are covered in **ES Volume 1, Chapter 10: Landscape and Visual [EN010149/APP/6.1]**.
    - Noise and vibration: Effects on residents’ well-being during construction and decommissioning are covered in **ES Volume 1, Chapter 12: Noise and Vibration [EN010149/APP/6.1]**.
    - Population: Positive mental and physical health effects for users of new paths and community areas during operation are discussed in **ES Volume 1, Chapter 13: Population [EN010149/APP/6.1]**.
    - Traffic and transport: Health impacts from disruption, safety concerns, and changes in community access during construction and decommissioning are reviewed in **ES Volume 1, Chapter 14: Traffic and Transport [EN010149/APP/6.1]**.
    - Glint and glare: Potential nuisance to nearby residents during operation is assessed in **ES Volume 3, Appendix 5.4: Glint and Glare Study [EN010149/APP/6.3]**.

  Relevant mitigation measures are detailed in and secured by the **Outline Construction Environment Management Plan [EN010149/APP/7.7]**.
- **Material Assets and Waste** - Springwell Solar Farm does not intend to remove substantial excavated materials, although some may be removed if contaminated. Relevant mitigation measures are detailed in and secured by the **Outline Construction Environment Management Plan [EN010149/APP/7.7]**, **Outline Operational Environment Management Plan [EN010149/APP/7.10]**, **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]** and **Outline Site Waste Management Plan [EN010149/APP/7.7]**.

- **Electric, Magnetic, and Electromagnetic Fields** - Underground cabling for Springwell Solar Farm is designed to minimise exposure to electric, magnetic and electromagnetic fields, as the cables will be buried and distanced from sensitive receptors.

Preliminary Environmental Information Report

A Preliminary Environmental Information Report was prepared by the Applicant and published as part of the Statutory Consultation which took place from January to February 2024.

The Preliminary Environmental Information Report provided the preliminary findings of the environmental assessment undertaken during the design development of Springwell Solar Farm. The Preliminary Environmental Information Report has been further developed following completion of the design work and environmental assessment and now constitutes the Environmental Statement, which this Non-Technical Summary summarises.

Environmental Statement

The Environmental Statement presents the results of the Environmental Impact Assessment undertaken for Springwell Solar Farm and sets out the likely significant environmental effects that would result from construction, operation (including maintenance) and/or the decommissioning, alongside the proposed mitigation measures to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects.

Consultation and engagement

The consultation and engagement process during the Environmental Impact Assessment is essential for developing a comprehensive and proportionate Environmental Statement. It ensures that views from statutory and non-statutory consultees are considered, helping to prioritise issues with potential significant environmental effects and identify areas requiring further investigation. Continuous engagement allows the evolution of the project design, integrating mitigation measures to minimise adverse environmental effects and maximise environmental benefits.

The main stages of consultation were:

- **Phase one**: Early plans and proposals (14 January 2024 and 07 March 2023) – a non-statutory consultation on early plans and proposals for Springwell Solar Farm;
- **Phase two**: Updated plans and proposals (11 January 2024 to 22 February 2024) – a statutory consultation on updated proposals for Springwell Solar Farm, carried out in accordance with a Statement of Community Consultation and relevant legislative requirements; and
- **Targeted consultation**: a targeted consultation during summer 2024 on proposed changes to the Site to accommodate highway and footpath improvements identified following phase two consultation.

Early and targeted engagement with stakeholders such as local councils, government agencies, and environmental organisations has influenced the design of Springwell Solar Farm and the Environmental Impact Assessment. The consultation process has included entities such as Lincolnshire County Council, North Kesteven District Council, Historic England, Natural England, and the Ministry of Defence, among others. A **Consultation Report [EN010149/APP/5.1]** with details of consultation is submitted in support of the Development Consent Order Application.

Environmental Impact Assessment Methodology

The Environmental Impact Assessment process begins by assessing the existing conditions (“baseline”) of an area affected by a proposed development and predicts the potential changes (“impacts”) during construction, operation (including maintenance) and decommissioning. In assessing these impacts, the Environmental Impact Assessment considers both the scale of each impact and who or what might experience the impact ("receptor"), such as people, animals, landscapes, heritage sites, groundwater, or soil. The value/importance/sensitivity of each receptor is combined with the scale of the impact (“magnitude”) to reach a conclusion about the overall environmental "effect" (the result of a change or impact caused by the proposed development on a particular feature or receptor) and its "significance" (the importance or scale of the effect on the receptor), focusing on identifying significant beneficial or adverse effects.

Mitigation measures are considered following a mitigation hierarchy aiming first to avoid, then to reduce, and/or lastly to offset adverse effects. Embedded mitigation refers to mitigation that is integral to the design of Springwell Solar Farm, and has been built in from an early stage with a view to avoid or minimise environmental effects. Additional mitigation measures are measures that are required to further reduce environmental effects, such as measures set out in environmental management plans. The remaining effects (“residual effects”) after the implementation of mitigation measures, are then assessed for significance.

The Environmental Impact Assessment also evaluates intra-project cumulative effects (multiple effects from Springwell Solar Farm on the same receptor) and inter-project cumulative effects (effects from Springwell Solar Farm in combination with other existing development and/or approved development).

The Environmental Impact Assessment uses a ‘Rochdale Envelope’ approach, establishing maximum parameters for Springwell Solar Farm to allow flexibility for technological advancements at the time of construction. By defining these maximum parameters (for example heights, massing, or noise levels), the assessment evaluates the worst-case scenario to ensure a robust analysis of likely significant effects.

6. Findings of the Environmental Statement

An assessment of the environmental effects of the Proposed Development during its construction, operation (including maintenance), and decommissioning has been completed for each of the topics identified in **Section 5** above.

The conclusions on the likely significant environmental effects of the Proposed Development are described within the Environmental Statement. This section provides a brief summary of the overall findings of the report.

Air Quality

This section considers the likely effects of the Proposed Development on air quality across its construction, operational (including maintenance), and decommissioning phases.

Springwell Solar Farm has incorporated a range of mitigation measures based on industry recognised guidance for dust and particulate matter control in demolition and construction and incorporated into the design of Springwell Solar Farm to minimise these impacts. The mitigation measures relevant to air quality that are embedded in the design of Springwell Solar Farm are:

- A minimum 20 metres offset from Solar Photovoltaic development to locally designated wildlife sites;
- A minimum 15 metres offset from Solar Photovoltaic development to existing woodlands; and
- A minimum 250 metres offset from the inverter and transformer stations, Battery Energy Storage System, Springwell Substation and Collector Compounds to residential properties.

During construction, there is potential for dust and emissions to affect local settlements including, Blankney, Scopwick, Kirkby Green and Ashby de la Launde, as well as ecological receptors (the Local Wildlife Sites) during the 48 months of construction. Therefore, site-specific mitigation measures have been proposed. The adequate implementation of dust control measures and construction equipment emission controls can greatly reduce any adverse effects during the construction phase. Mitigation measures are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]**. Dust effects during the construction phase are therefore expected to be **not significant**.

The impacts of road traffic emissions associated with the construction of Springwell Solar Farm have the potential to affect existing human and ecological receptors. Impacts on local air quality as a result of road traffic emissions are expected to be confined to this timeframe and therefore be temporary. The quality of the air at the Site is generally good, based on the review of North Kesteven District Council air quality monitoring data, and there is not a designated Air Quality Management Area declared within the district. Any effects will be controlled through the implementation of mitigation measures, which are detailed in and secured by the **Outline Construction Traffic Management Plan [EN010149/APP/7.8]**. Therefore, impacts

of road traffic emissions associated with the construction phase following the implementation of mitigation measures are expected to be **not significant**.

Decommissioning is expected to generate lower effects to those anticipated during construction and therefore the mitigation measures proposed for implementation during the construction phase will be appropriate for application to decommissioning. Mitigation measures are detailed in and secured by the **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**. The effect on existing human and ecological receptors during decommissioning phase following the implementation of mitigation measures is considered to be **not significant**.

During operation (including maintenance) road traffic emissions resulting from Springwell Solar Farm are anticipated to increase slightly, but these will be mitigated and secured by measures included within the **Outline Operational Environmental Management Plan [EN010149/APP/7.10]**. Effects on existing human and ecological receptors during operation (including maintenance) following the implementation of mitigation measures is considered to be **not significant**.

Biodiversity

This section considers the likely effects of Springwell Solar Farm on designated sites, habitats, and protected or notable species — those that are ecologically important due to their rarity, declining populations, or significant role in local biodiversity— during its construction, operation (including maintenance), and decommissioning phases. The design includes embedded measures to protect these environmental features, including the use of buffer zones and targeted habitat enhancement.

Designated sites

During all phases, no statutory designated sites for nature conservation are anticipated to be affected.

Non-statutory designated Local Wildlife Sites within or adjacent to the Site would be protected by a 20 metres buffer from Springwell Solar Farm, as detailed in and secured by the **Design Commitments [EN010149/APP/7.4]**, except for four Local Wildlife Sites which would require sections to be removed to enable highways access into the Site. These are: A15, Green Man Road to Cuckoo Lane Local Wildlife Site; A15, Slate House Farm to Dunsby Pit Plantation Local Wildlife Site; Temple Road Verges, Welbourn to Brauncewell Local Wildlife Site; and Navenby Heath Road Verges Local Wildlife Site. They are all roadside grassland verges designated for calcareous grassland.

The sections to be removed from each Local Wildlife Site are relatively small and total less than 5% of the total length of the Local Wildlife Sites. The adverse effect on these four Local Wildlife Sites is therefore considered to be **not significant**. New calcareous grassland would be created to compensate for the sections of Local Wildlife Sites lost and to enhance the overall amount of calcareous grassland within the Site once established during the operational (including maintenance) phase. New calcareous grassland has been proposed and secured by the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**.

Habitats

The Solar Photovoltaic development area is mostly arable land. Important habitats, such as ponds, species-rich grassland and woodlands, have either been excluded from the Site or would be retained and protected by offset buffers, including a minimum 15 metres buffer from woodlands, 10 metres buffer from field margins and 6 metres buffer from watercourses. The implementation of buffer zones is secured by the **Design Commitments [EN010149/APP/7.4]**. Mitigation to protect habitats from pollution are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]** and **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**. Habitat creation and enhancement proposals are detailed in and secured by the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**.

Habitat creation and enhancement proposals include:

- Creation of approximately 100 hectares of grassland consisting of calcareous and neutral grassland - managed as hay meadow to enhance biodiversity;
- Creation of new calcareous grassland adjacent to existing Local Wildlife Site verges;
- Enhancement of field margins and management for wildlife, including treatments for wild bird seed and for arable wildflowers, creation of tussocky grassland and species-rich grassland;
- Creation of legume-rich herbal leys under and between Solar Photovoltaic modules;
- Strategic hedgerow and tree planting (15,563 metres of new hedgerow and 16 new tree belts) to enhance wildlife connectivity and bolstering of existing hedgerows.

Habitat creation and enhancement proposals have been calculated to provide a minimum of 10% biodiversity net gain, with an anticipated provision in excess of this**.** Habitats would be managed and maintained as appropriate throughout the operational (including maintenance) phase, as detailed in and secured by the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**.

Hedgerows and hedgerow trees

Hedgerows and hedgerow trees would be protected by a minimum 10 metres offset from Springwell Solar Farm, except for sections which would need to be removed for installation of underground cable and access. After construction, these hedgerows would be re-instated or planted elsewhere within the Site. New hedgerow and tree planting proposed would provide a **significant beneficial** effect once established during the operational (including maintenance) phase. New tree and hedgerow planting proposals are detailed in and secured by the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**.

Habitat for notable arable flora

Notable arable wildflowers were found in Springwell West and Springwell Central areas where the soil was more calcareous. Habitat for arable flora could be lost by soil removal or ground disturbance during the construction and decommissioning phases. However most notable flora was found in field margins, which would be protected from works by a minimum 10 metres buffer and effects from soil removal would be temporary as the soil would be re-instated after works. Adverse effects during construction and decommissioning are therefore considered **not significant**. Targeted areas are proposed to be managed for notable arable flora, which is anticipated to have a **significant beneficial** effect once established during the operational (including maintenance) phase.

Protected and/or notable species

Adverse effects on species are considered potentially **significant** during construction and decommissioning, rather than during the operational (including maintenance) phase. The adverse effects are discussed below mainly in relation to construction; however, the effects from decommissioning are also considered likely to be similar to construction, although for a shorter duration. Mitigation to protect species and their habitats is detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]** and **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**. Habitat creation and enhancement proposals are detailed in and secured by the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**.

Ground nesting and wintering birds

The Site is important for ground nesting birds and wintering birds, including skylark, grey partridge and corn bunting. Both ground nesting and wintering birds could be adversely affected by habitat loss and disturbance during construction. However, large open areas are to be retained and enhanced for ground nesting and wintering birds. The habitat creation and enhancement proposals are anticipated to improve ground nesting bird habitat (based on the number of skylark territories found on Site) and increase the amount of foraging habitat. It is anticipated that birds would rapidly be able to use the newly created and enhanced habitat and therefore adverse effects during construction would be temporary and are considered **not significant**. Once habitats are fully established during the operational (including maintenance) phase, there is anticipated to be a **significant beneficial** effect for ground nesting and wintering birds.

Non-ground nesting birds

Non-ground nesting birds are not anticipated to be adversely affected as field margins, hedgerows and hedgerow trees would be protected by minimum 10 metres buffers. Habitat creation and improvement measures would enhance foraging and nesting habitat once established during the operational (including maintenance) phase. The provision of nest boxes for a range of farmland bird species would also enhance nesting opportunities.

Barn owl

Barn owls use the Site for foraging and a pair of barn owls were found to be nesting just outside of the Site. Barn owls are not anticipated to be adversely affected as they mostly hunt along field margins which would be protected by a minimum 10 metres buffer. Nesting barn owls could be disturbed by construction works; however, surveys would be carried out of potential nest sites prior to works and mitigation would be undertaken as appropriate to avoid disturbance. Habitat creation and improvement of field margins would enhance foraging habitat and the provision of barn owl nest boxes would also enhance nesting opportunities. These proposals are anticipated to have a **beneficial** effect on barn owls, although **not significant**.

Bats

The Site is considered to be of up to National importance for bats due to the diversity of bat species found to be using the Site.

Lighting would conform to best practice guidelines with respect to minimising light spill into adjacent habitats to prevent disturbance to bats and other nocturnal animals. Throughout construction and operation (including maintenance), the use of motion detection or manually operated lighting would be used to avoid constant lighting.

Noise and vibration from construction activity and noise from the Battery Energy Storage System and inverters during operation is not considered likely to disturb bats due to a minimum of 10 metres buffer zones from any woodlands, hedgerows or trees; and because higher frequency noise quickly decreases over distance.

Trees with potential bat roost features have been avoided. The buffer zones from hedgerows, field margins, watercourses and woodland edges to any built development would protect bat foraging and commuting corridors.

Several sections of hedgerow would need to be removed for cables or accesses. Creating gaps of 10 metres or more would cause fragmentation of habitat which could disrupt the flight paths of some bat species. However, mitigation proposals to temporarily ‘in-fill’ gaps in key hedgerows (for example, with brash or shrubs in planters) is anticipated to enable bats to continue to use the key hedgerows for commuting and foraging during construction. After construction, hedgerows would be re-instated and any remaining gaps (for internal access roads) would be less than 10 metres wide. Therefore, the adverse effect of hedgerow fragmentation would be temporary and is considered to be **not significant**. New hedgerow planting, grassland creation and enhancement of field margins would improve foraging and commuting habitat, which is anticipated to have a **beneficial** effect on bats once habitats are established during the operational (including maintenance) phase. The provision of bat boxes would also provide roosting opportunities.

There is limited research and no common consensus on the long-term impacts of solar farms on bats. However, some studies suggests that there are potential impacts following the installation of the Solar Photovoltaic modules that had an adverse effect on the abundance of some bat species. This potential adverse effect is considered **not significant** as the habitat creation and enhancement proposals for Springwell Solar Farm are anticipated to provide an overall enhancement of bat foraging and commuting habitat in the long-term once established. Monitoring of bat activity is

proposed to inform mitigation and habitat management throughout the operational (including maintenance) phase. Monitoring is detailed in and secured by the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**.

Reptiles and amphibians

Great crested newts are considered likely absent from the Site. All nearby ponds that are within 500 metres were surveyed, and no evidence of great crested newt was found. Two ponds had unclear results, however they are close to other ponds that tested negative. Grassland which is considered suitable for reptiles and other amphibians has been excluded from Springwell Solar Farm and field margins would be protected by 10 metres buffers. Any field margin improvement works, where reptiles or other amphibians may be present, would be subject to precautionary method of works to avoid harm.

Water voles, otter and aquatic species

There are a few watercourses within the Site; however, they are not anticipated to be affected by works. A minimum 6 metres buffer and standard pollution control measures are anticipated to protect watercourses and their associated species. Six ditches would potentially be affected by Springwell Solar Farm; however, these ditches were all dry and deemed unsuitable for water vole, otter and aquatic species.

Badgers and notable mammals

There were a few badger setts found within the Site; however, these would be avoided by works, with a 30 metres minimum buffer imposed from any main badger setts. Measures to avoid harm to badgers and their setts are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]** and **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**.

Fencing around the fields of the Solar Photovoltaic development would have ‘two-way mammal gates’ installed to allow badgers to forage and disperse into fields with Solar Photovoltaic modules throughout the Site. Gaps underneath the fencing where there are low lying undulations in ground level would also allow other mammals, such as brown hare and hedgehogs, access to forage and disperse. This is detailed in and secured by the **Design Commitments [EN010149/APP/7.4]**.

Deer

The 10 metres wide buffers from field margins would allow deer to disperse across the Site via the field margins.

Climate

This section considers the likely effects of Springwell Solar Farm on greenhouse gas emissions and its contribution to climate change mitigation. The global climate is highly sensitive to greenhouse gas emissions, and Springwell Solar Farm is expected to provide greenhouse gas savings through the generation and provision of low carbon electricity to the national grid, which may otherwise have been generated by processes with higher carbon intensities, such as generation from fossil fuels.

While Springwell Solar Farm will produce some greenhouse gas emissions throughout its lifecycle (from construction, operational maintenance and repair, and decommissioning), a whole lifecycle greenhouse gas assessment has been carried out in order to assess the net greenhouse gas impact. This assessment considers the potential emissions caused by the development against the potential emissions savings by the renewable energy generated.

The design of Springwell Solar Farm includes embedded mitigation measures to minimise the use of concrete, steel, aggregates, and other construction materials, secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]**. Furthermore, any and all vegetation cleared for Springwell Solar Farm will be compensated by a planting scheme that equals or exceeds the current levels of vegetation, as secured by the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**.

Additional mitigation measures include the responsible sourcing of materials, segregating waste to be re-used and recycled where possible, and measures to decrease fuel use by maximising efficiency.

Additional mitigation measures are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]**, **Outline Environmental Management Plan [EN010149/APP/7.10]**, **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**, **Outline Construction Traffic Management Plan [EN010149/APP/7.8]**, and **Outline Employment, Skills and Supply Chain Plan [EN010149/APP/7.20]**.

Since the nature of Springwell Solar Farm is to have a beneficial positive impact in terms of greenhouse gas emissions, the mitigation measures implemented are intended to maximise this beneficial impact.

Over its lifetime, Springwell Solar Farm is expected to save over 9.6 million tonnes of carbon dioxide equivalent. It is expected that it will take 10 years to offset the greenhouse gases produced during construction, operation (including maintenance) and decommissioning, with all greenhouse gas savings beyond that point providing a net benefit. Springwell Solar Farm is therefore considered to have a **significant beneficial** effect with regards to greenhouse gas emissions.

In addition, the potential effect of climate change on environmental receptors potentially affected by Springwell Solar Farm has also been assessed. This specifically includes rainfall runoff rates. No significant risk of adverse effects from altered rainfall runoff rates and patterns was identified to have detrimental effects on the environment. Consequently, Springwell Solar Farm is anticipated to have a beneficial impact on climate, both through emissions savings and in its resilience to climate change effects.

Cultural Heritage

This section explores the likely effects of Springwell Solar Farm on buried archaeological sites and cultural heritage within the Site during construction, operation (including maintenance), and decommissioning.

A total of 13 buried archaeological sites have been identified within the Site and would be affected by Springwell Solar Farm. These include one scheduled monument (the remains of Brauncewell village) in the south of Springwell West and the sites of two World War II aircraft crashes in Springwell East. The other 10 archaeological sites comprise six possible settlements of prehistoric to Roman date (two of which include evidence of possible Bronze Age barrows), the routes of two Roman roads, a pit alignment, and a ditched enclosure.

There will be no direct impacts on the scheduled monument and measures to offset potential effects are set out below.

The aircraft crash site may be affected by excavation of the foundations for the Inverter Transformer Station in this field. In addition, there is one archaeological site within the Site which will be preserved by Springwell Solar Farm; this is an area of prehistoric cropmarks in the south of Springwell West. This area will be used for ecological enhancements (grass land habitat creation) which will preserve these archaeological remains with no disturbance.

The design of Springwell Solar Farm has been developed to minimise visibility of Springwell Solar Farm from designated heritage assets. As a result, effects resulting from changes within the setting of heritage assets would be **not significant**.

Embedded mitigation measures within Springwell Solar Farm are also included in the design of the project. In areas of high-density or sensitive archaeological remains, non-intrusive foundations (for example, concrete feet) will be used and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]**.

A permissive footpath across the Brauncewell village scheduled monument and installation of interpretation panels close to but outside the scheduled area will enhance public understanding of these archaeological remains.

Where archaeological remains are located within areas where Springwell Solar Farm will result in excavation below 0.3 metres deep (for example, within the cable corridors and where Inverter Transformer Station or satellite collector compounds are proposed), there will be areas of archaeological excavation in advance of construction. This will off-set likely adverse effects on these remains.

Overall, Springwell Solar Farm will result in a **significant beneficial** effect to the scheduled remains of the former village of Brauncewell. Any adverse effects of Springwell Solar Farm on cultural heritage assets will be **not significant**.

Landscape and Visual

This section assesses the likely changes to landscape character and visual impacts as a result of the Springwell Solar Farm during construction, operation (including maintenance), and decommissioning.

Landscape Character

No part of Springwell Solar Farm or the land surrounding it falls within a designated landscape. There are also no registered parks and gardens close to Springwell Solar Farm.

Springwell Solar Farm would be located across arable farmland on a gentle dip slope between the limestone cliff known as the Lincoln Cliff to the west and the Lincolnshire Fens to the east. At a national level, Natural England identifies this broad area of landscape as National Character Area 47: Lincolnshire Edge.

There are, however, notable variations in the character of the landscape from west to east across this broad area. The existing landscape character of North Kesteven District has been described in a document called the North Kesteven Landscape Character Assessment. This identifies a series of local Landscape Character Areas. Springwell West and Springwell Central lie within Landscape Character Areas 7: Limestone Heath whilst Springwell East lies within Landscape Character Areas 11: Central Clays and Gravels.

The landscape within Springwell West and Springwell Central is flat or gently undulating and mostly open with relatively few mature trees or hedgerows. There are a number of small copses and woodlands, mostly broad-leaved, throughout the landscape, which because of the general openness of the landscape are prominent and make important features. Linear infrastructure such as the A15 and high voltage overhead electricity lines are a feature of Springwell West. Royal Air Force Digby is locally prominent between Springwell West and Springwell East.

The landscape within Springwell East is more enclosed with more dense and established vegetation.

Settlement is concentrated in the main villages of Scopwick, Kirkby Green, Blankney, Ashby de la Launde and at Royal Air Force Digby. Elsewhere throughout the landscape there are scattered farmsteads and a few isolated properties.

Effects during operation (including maintenance) on landscape character would typically arise from:

- The introduction of new energy infrastructure into existing agricultural fields;
- Earth bunds (up to 5 metres in height) in the vicinity of Springwell Substation;
- Incremental growth of newly established mitigation planting (hedgerows and woodland);
- Establishment of new wildflower rich grassland in open fields and field margins; and
- regular maintenance visits and operations including habitat management.

Additional effects during the construction phase on landscape character would arise from:

- Short-term change of farmland to a construction site including the formation of temporary construction compounds (with associated temporary night time lighting) and access tracks;
- Increased vehicular movement and personnel in the landscape delivering and erecting the component parts of Springwell Solar Farm;
- Highways works and management;
- Underground cable installation; and
- Changes to landscape from vegetation removal.

Effects during decommissioning would be similar to those during construction.

Visual

People in the landscape surrounding Springwell Solar Farm who are likely to experience views of Springwell Solar Farm are:

- Residents (at isolated farmsteads and dwellings);
- Users of public rights of way (footpaths and bridleways); and
- Users of main roads and minor country lanes.

The villages of Scopwick, Kirkby Green and Blankney lie just beyond the Site near Springwell East. Vegetation which surrounds these settlements would screen any view of Springwell Solar Farm from within them. It has been assessed that there would be no view of any element of Springwell Solar Farm during construction, operation (including maintenance) or decommissioning from any location within these villages.

The village of Ashby de la Launde lies approximately 1 kilometre from Springwell Solar Farm in Springwell West but there would be no view of Springwell Solar Farm from within the residential and communal parts of the village.

The residential barracks of Royal Air Force Digby lie immediately adjacent to the Site between Springwell Central and Springwell West. However, no above ground structures are proposed in immediately adjoining fields or within approximately 1 kilometre of the main residential barracks in Springwell West. A gentle ridge to the east of the B1181 (Heath Road), together with established woodland, separates the residential barracks from Springwell Central. Any glimpses of Springwell Solar Farm from the barracks would be negligible and distant and viewed through the security fencing which surrounds Royal Air Force Digby.

Effects during operation (including maintenance) on visual amenity would typically arise from views of:

- New energy infrastructure including ancillary structures;
- Earth bunds (up to 5 metres in height) in the vicinity of Springwell Substation;
- Newly established mitigation planting (hedgerows and woodland);

- New wildflower rich grassland in open fields and field margins; and
- Regular maintenance operations including habitat management.

Additional effects during construction on visual amenity would typically arise from views of:

- Temporary construction compounds;
- Highways work and management;
- The movement of vehicles and delivery of components to Site; and
- The movement of plant and personnel within the site installing Springwell Solar Farm.

Effects during decommissioning would be similar to those during construction.

Measures to avoid, prevent or reduce, and if possible offset significant adverse effects

The potential landscape and visual effects of Springwell Solar Farm have been considered from the outset of the design process. Early landscape and visual feasibility appraisal fed into the site selection, and options appraisals helped to avoid adverse landscape and visual effects where possible and appropriate.

Landscape and visual considerations have been one of the critical drivers for design decisions at all stages. The placement and height of infrastructure within Springwell Solar Farm has been considered carefully to mitigate potential significant effects as far as practicable.

New structure planting has been proposed to mitigate landscape and visual effects. This includes extensive new hedgerow and native woodland planting. Specific attention has been focussed on mitigating views from individual residential properties, the A15, the B1191 (Heath Road) and public rights of way where they pass close to Springwell Solar Farm.

In total, it is proposed to plant over 15 kilometres of new hedgerow and over 16 hectares of new structural woodland planting within the Site. The new planting proposals respond directly to specific guidelines in the North Kesteven Landscape Character Assessment.

During construction, an approved management plan would ensure that all existing hedgerows, trees and woodland would be retained and protected (except where removal of vegetation has been approved under the Development Consent Order).

During the operational (including maintenance) phase, existing and newly established habitats and planting would be maintained in accordance with an approved management plan. This would ensure, amongst other things, that any defective planting is replaced and that all new planting establishes successfully by year 10. It would ensure that existing and new hedgerows (once established) would be maintained at a minimum height of 3.5 metres for the duration of the operational (including maintenance) phase of Springwell Solar Farm.

Likely significant effects

In conclusion, during construction and the early years of operation, there would be a **significant adverse** effect on the existing vegetation structure of the landscape (trees and hedgerows) within the Site. This would be due to the necessary removal of short sections of existing hedgerow during construction. However, once new hedgerow and woodland planting has established by year 10 of operation, this would more than offset the loss and there would be a **significant beneficial** effect on existing vegetation structure. This effect would also extend throughout the decommissioning phase.

There would be a **significant adverse** effect on landscape character across part of Landscape Character Areas 7: Limestone Heath during construction, operation (including maintenance) and decommissioning. This would be limited to a defined tract of the landscape as follows:

- From Heath Lane in the north to just south of Dunston Pit Plantation and extending west of the A15 as far as Wellingore Heath, Temple Bruer and Brauncewell;
- To the east of the A15, potentially extending up to Heath Road as far as Royal Air Force Digby;
- On the eastern side of Heath Road extending up to a series of plantations to the east (Bloxham Woods, Ashby Thorns, Rowston Covert); and
- Across the tract of land between Royal Air Force Digby, Scopwick, the B1188 and Rowston Covert.

There would also be a **significant adverse** effect on landscape character across part of Landscape Character Areas 11: Central Clays and Gravels during construction, in the early years of operation and during decommissioning. This would be limited to a tightly defined tract of the landscape as follows:

- Between the railway line which defines the eastern boundary of Springwell East;
- The B1188 to the west;
- Blankney Walks Lane to the north; and
- Trundle Lane and public rights of way Scop/739/1 to the south.

However, by year 10 of operation and for the remainder of the operational (including maintenance) phase, once new mitigation planting has established, there would be a **not significant** effect on landscape character across this part of Landscape Character Areas 11: Central Clays and Gravels.

No significant visual effects would occur within the villages of Scopwick, Kirkby Green, Blankney, Ashby de la Launde, Royal Air Force Digby or any other more distant settlements.

In total, it is assessed that the residents of 25 dwellings would experience **significant adverse** visual effects during year 1 of operation, but in most cases by year 10, these effects would reduce in magnitude due to the establishment of mitigation planting and by year 10 would be **not significant**. It is considered likely that **significant adverse** visual effects would only remain at the Windmill on Heath Road,

reflecting the fact that views are available from elevated rooms within the converted mill.

During construction, the residents of 31 dwellings would experience **significant adverse** visual effects but during decommissioning, only four of these would experience **significant adverse** visual effects.

Aside from residents, users of the following roads and public rights of way would experience **significant adverse** visual effects during construction and in the early years of operation and maintenance:

- Public rights of way between Blankney, Scopwick and Kirkby Green extending up to Blankney Walks Lane and the railway on the eastern area of the Site (including several local promoted 'Stepping Out' walks and a section of the Spires and Steeples Trail);
- Public rights of way between Royal Air Force Digby and B1188 (Footpath R5/1);
- Bloxholm Woods Local Nature Reserve Footpath;
- Minor Roads to Temple Bruer and Thompsons Bottom Farm;
- Public rights of way and lanes north-west between A15 and Wellingore Heath including New England Lane and Gorse Hill Lane;
- A15; and
- B1191 (Heath Road).

Over a number of years, proposed mitigation planting would soften or screen many of these views and by year 10 of operation, it has been assessed that **significant adverse** visual effects would only remain in the following locations:

- Some sections of the public rights of way between Blankney, Scopwick and Kirkby Green extending up to Blankney Walks Lane and the railway on the eastern area of the Site; and
- A15.

Land, Soil and Groundwater

This section considers the likely effects of the Springwell Solar Farm on land, soil, and groundwater throughout construction, operation (including maintenance), and decommissioning phases.

Land, soil quality and groundwater

Most of the land in the Site has been used for agriculture since around 1900. Additionally, there are some areas where contamination may be present, for example where the Site is close to an airfield and a sewage works. There are also likely to be some areas where 'made ground' may be present (this is the term used for material placed by humans, for example to make a hard surface on farm tracks, and it may be mainly natural soil, but could also include bricks, concrete, or waste materials). There are known to be locations where sand or gravel were taken out of the ground, and it is possible that there is made ground that was used to backfill these pits.

There are two historical landfill sites located outside the Site, at Brauncewell and Longwood Quarries. The landfill at Longwood Quarry has been closed in accordance with Environment Agency guidelines, and is not considered to pose a risk to the surrounding environment (including Springwell Solar Farm). The landfill at Brauncewell is still operational and has the potential to form a source of pollution close to the Site.

The soil across the Site is currently mainly used for agricultural purposes. The soils are categorised in 'associations', with a number of named units present across the Site. The soil types are varied across the Site, from clay-rich soils to chalk-rich or limestone-rich soils, with drainage varying from good to poor.

Water is present within the ground in most soil and rock units. Under the Site, there are some areas of more sensitive groundwater, as defined by the Environment Agency. Where water is removed from the ground for human use (including as drinking water, or for use in agriculture) from a well or a borehole, there is a protection zone around the location to prevent contamination of the water. These zones are known as groundwater Source Protection Zones, and are categorised as Zone 1 (the inner, most sensitive, zone closest to the well or borehole), Zone 2 (the outer protection zone), and Zone 3 (the total zone, which is the largest area).

Within the Site, there is one Zone 1 area, to the west of Scopwick. The water abstraction well itself is outside the Site, even though the Zone 1 area is inside the Site. There is no Zone 2 land within the Site. There is Zone 3 land in the Springwell West area, close to the south-western corner (south of Bloxham and west of Blankney).

The impact on the surface water and groundwater regime has been minimised through the design of Springwell Solar Farm, by using existing tracks where possible. Additional mitigation that would ensure effects on land, soil and groundwater are controlled is detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]**, **Outline Soil Management Plan [EN010149/APP/7.11]**, **Outline Battery Safety Management Plan [EN010149/APP/7.14]** and **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**.

Taking account of the mitigation measures proposed in the above documents, effects on land due to existing contamination or contamination during construction, operation (including maintenance) and decommissioning are considered to be **not significant**. Effects on groundwater quality due to leaks or spillages of fuel or chemicals during construction, operation (including maintenance) and decommissioning are considered to be **not significant**. Effects on groundwater quality due to potential contamination during piling or earthworks during construction are considered to be **not significant**. Effects on land or groundwater due to release of water used to fight fires related to the Battery Energy Storage System (potentially containing fire-fighting chemicals) during operation (including maintenance) and decommissioning (depending on when the equipment is decommissioned) are considered to be **not significant**.

Agricultural land

The agricultural land has been categorised according to a system for soils in agricultural use known as the agricultural land classification system. Soils are separated into the following groups depending on their quality in terms of use for agriculture:

- Agricultural land classification grade 1 (excellent quality);
- Agricultural land classification grade 2 (very good quality);
- Agricultural land classification grade 3a (good quality);
- Agricultural land classification grade 3b (moderate quality);
- Agricultural land classification grade 4 (poor quality);
- Agricultural land classification grade 5 (very poor quality); and
- Non-agricultural land.

Soils of grade 1, grade 2 or grade 3a are classified as being 'Best and Most Versatile' agricultural land. Soils of grade 3b, grade 4 or grade 5 are considered to be 'non-Best and Most Versatile' agricultural land.

A survey of land within the Site has been completed to determine the grades of agricultural land that are present, the results of which are presented in **Table 2**, with the area given for each classification in hectares, and as a percentage of the total surveyed area. The areas of 'Best and Most Versatile' and 'non-Best and Most Versatile' agricultural land within the Site are also indicated in **Table 2**.

Table 2 Agricultural land classification results of the area surveyed within the Site

Agricultural land classification grade	Area (hectares)	Percentage
Grade 1	6.0	0.5
Grade 2	80.1	6.3
Grade 3a	455.1	35.6
Grade 3b	582.6	45.5
Grade 4	4.2	0.3
Unsurveyed land (field verges, internal tracks etc.)	152.0	11.8
Total Best and Most Versatile	541.2	42.3
Total non-Best and Most Versatile	586.8	45.9
Total	**1280.0**	**100.00**
There is no Grade 5 agricultural land within the Site		

The impact on grade 1, grade 2, grade 3a and grade 3b land has been minimised through the design of Springwell Solar Farm, as discussed in **Section 4** of this Non-Technical Summary.

An **Outline Soil Management Plan [EN010149/APP/7.11]** is submitted in support of the Development Consent Order Application. This Plan outlines strategies to protect soil and farmland during construction, operation (including maintenance) and decommissioning. It aims to maintain soil quality and restore the land to its original condition after construction. The Plan includes rules for vehicle movements to prevent soil damage and carefully planned access routes to minimise impacts.

During operation (including maintenance), there will be less ground disturbance compared to the construction phase, as maintenance will primarily involve periodic visits to repair equipment and clean solar panels while using existing paths to minimise impact. There is potential for sheep grazing between the solar panels, allowing some agricultural use of the land during operation. Additionally, soil will continue to be stored and managed properly to maintain its quality throughout this phase.

During decommissioning, vehicle movements will primarily occur on established paths to limit soil disturbance. Concrete and infrastructure foundations will be removed to a depth of up to 1 metre, while underground cables will remain in place to minimise impact on soil quality. Areas around the Battery Energy Storage System and Springwell Substation will be restored using retained or new topsoil, ensuring that all land is returned to its original agricultural quality.

Activities will be regularly audited by the principal contractor to ensure compliance with the **Outline Soil Management Plan [EN010149/APP/7.11]**.

During construction, some Best and Most Versatile agricultural land (grade 1, grade 2 and grade 3a) will be temporarily affected. Existing farming practices will not be able to continue during this period, which is considered to be a **significant adverse** effect. In contrast, effects to Non-Best and Most Versatile agricultural land (grade 3b and grade 4) during construction are considered to be **not significant**.

During the operational (including maintenance) phase, there will be some Best and Most Versatile agricultural land (grade 1, grade 2 and grade 3a) that will not be usable for agriculture over the 40 year lifetime per phase of Springwell Solar Farm. Although this period is long-term, Springwell Solar Farm is considered temporary and reversible, meaning most of the land will eventually return to agricultural use. However, for the purposes of the assessment it has been assumed that there would be a lasting impact on some of this land due to new woodlands, habitats, and other permanent plantings that will remain in place when the land is returned to the landowner. Therefore, effects to Best and Most Versatile agricultural land that are considered to be permenant during the operation (including maintenance) and decommissioning phase are considered **significant adverse** in terms of the availability of agricultural land.

In terms of the availability of Non-Best and Most Versatile agricultural land, effects are considered to be **not significant**. There would be a **significant beneficial** effect on soil quality during the operational (including maintenance) phase, as the land will not experience the usual effects from intensive farming practices during this time.

During decommissioning, effects on the use of Best and Most Versatile and Non-Best and Most Versatile agricultural land (grade 1, grade 2, grade 3a, grade 3b and grade 4) are expected to be minimal and therefore considered to be **not significant**, as much of the land will be returned to the landowner for agricultural use.

Noise and Vibration

This section considers the likely effects of noise and vibration generated by the construction, operation (including maintenance), and decommissioning of Springwell Solar Farm, particularly concerning nearby residential properties.

The main factors which determine noise at residential properties are:

- The level of noise emitted by the source, and
- The distance to residential properties from the source.

Construction noise is temporary and variable, and due to the nature of the construction works, highest levels of noise may only exist for a matter of hours or days as the works move across the Site.

The majority of heavy machinery works would be within Field Tb2 to the north of Springwell West along the A15.

Operational (including maintenance) noise is generated by the Battery Energy Storage System, Springwell Substation transformers, satellite collector compound transformers, and solar field inverters and transformers. Iterative design of the layout and capacity of Springwell Solar Farm has been modelled to achieve suitable noise levels at surrounding residential properties.

Baseline noise surveys have been completed to establish the existing noise climate at surrounding residential properties to help assess the impact of Springwell Solar Farm during operation (including maintenance).

Mitigation measures, including temporary barriers to screen the works, the use of screw piling when installing solar panels near residential properties, and equipment being switched off when not in use will help minimise construction noise. These measures along with controlled working hours between 8am and 6pm on weekdays, and 8am and 12 noon on Saturdays near residential properties are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]** and **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**.

Further assessment of the horizontal directional drilling works around the B1188, which is part of the electrical cabling works, is expected to be agreed with North Kesteven District Council, as this would likely require 24 hour works over a period of days depending on the ground conditions. Noise levels from these works would be assessed and controlled using similar mitigation proposed within the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]**, such as installing hoarding around noisy works.

Noise levels at residential properties have been agreed with North Kesteven District Council, with the most onerous for the Applicant considered to be night-time (11pm to 7am) from the solar, battery and substation equipment. As a conservative

assumption, all equipment has been assessed operating at 100% capacity for the operational (including maintenance) phase, although it is considered that the likelihood of this situation occurring is small.

Operational impacts have been reduced by locating the equipment away from residential properties, specifying equipment noise levels, the use of noise barriers around the Battery Energy Storage System compound, and the use of noise barriers around the seven main transformers in Springwell Substation. **Figures 6** and **7** at the end of this Non-Technical Summary present the operational specific noise levels from Springwell Solar Farm.

Given the distances between residential properties and construction works, such as in Field Tb2, as well as the duration of works and the use of construction mitigation methods like Best Practical Means, construction noise levels are predicted to be **not significant**. Noise generated by construction traffic on the local road network is also predicted to be **not significant**.

Operational impacts are considered to be at or lower than “noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.”

Possible noise from the maintenance of Springwell Solar Farm during operation, including traffic, is expected to be minimal, as these aspects are considered to occur in isolated instances.

Noise impacts during decommissioning are anticipated to be the same or less than during construction.

Vibration impacts are not predicted to result in any notable impacts during either construction, operation (including maintenance) or decommissioning.

Population

This chapter considers the likely effects generated by Springwell Solar Farm during construction, operation (including maintenance), and decommissioning in relation to population and the local economy.

Employment

The four year construction phase of Springwell Solar Farm is expected to create an average of approximately 400 jobs, and up to 650 staff at peak periods. It is anticipated that construction labour would be employed from within a 50 mile radius of Springwell Solar Farm. However, workers that experience benefits as a result of Springwell Solar Farm may not be evenly spread across this 50 mile radius and the Applicant aims to create employment and economic opportunities for the population closest to Springwell Solar Farm. Therefore, a focus area within approximately 10 miles of Springwell Solar Farm has been identified, within which potential impacts to employment and the labour market have been assessed.

The Office for National Statistics 2011 Census data shows that the unemployment rate within approximately 10 miles of Springwell Solar Farm is 5.4%, which is slightly greater than across Lincolnshire as a whole (4.9%), but lower than the rate at the

national level (5.7%). Residents of working age within approximately 10 miles of Springwell Solar Farm have an economic activity rate of 59%, which is slightly lower than the economic activity rate of England at 61%.

The net number of additional construction jobs associated with Springwell Solar Farm is estimated to be around 300 to 360 full time equivalent jobs per year within a 50 mile radius of Springwell Solar Farm and 140 full time equivalent jobs within approximately 10 miles of Springwell Solar Farm.

During construction, the direct effects to employment, skills and the labour market within approximately 10 miles of Springwell Solar Farm and within a 50 mile radius are considered to be **beneficial** but **not significant**.

The operation (including maintenance) of Springwell Solar Farm is estimated to create 20 full time equivalent jobs in Lincolnshire. The direct effects of this to employment, skills and labour market within Lincolnshire is considered to be **beneficial** but **not significant**.

The effects during decommissioning are expected to be equal to or less than those experienced in during construction; therefore; effects are deemed to be **beneficial** but **not significant**.

Local economy

Within approximately 10 miles of Springwell Solar Farm, the construction sector makes up 8.5% of the workforce, which is lower than the proportion across England as a whole (8.7%). There are around 8,839 people employed in the construction sector within approximately 10 miles of Springwell Solar Farm and the construction sector contributes an estimated Gross Value Added of £411 million to the area within approximately 10 miles of Springwell Solar Farm and £16.6 billion within a 50 mile radius. Gross Value Added is an economic measurement that measures the contribution of something to the economy by assessing the value of the contribution minus the cost of the inputs. The impact of Gross Value Added generation from the construction phase within approximately 10 miles of Springwell Solar Farm and within a 50 mile radius is considered to be **beneficial** but **not significant**.

The energy sector currently produces £111 million of Gross Value Added in Lincolnshire. The additional Gross Value Added resulting from the operation (including maintenance) of Springwell Solar Farm is estimated at £3.7 million in Lincolnshire each year. The Gross Value Added of Springwell Solar Farm to the wider energy sector during operation (including maintenance) is considered to be **beneficial** but **not significant**.

The effects during decommissioning are expected to be equal to or less than those experienced in during construction; therefore, effects are deemed to be **beneficial** but **not significant**.

To help maximise the positive gain for the local economy from the beneficial effect arising from employment generation during the construction, operational (including maintenance) and decommissioning phase, an **Outline Employment, Skills and Supply Chain Plan [EN010149/APP/7.20]** is submitted in support of the Development Consent Order Application.

Agricultural economy

There are a large number of people employed in the agricultural sector in Lincolnshire. The number of potential jobs lost in the sector as a result of Springwell Solar Farm is anticipated to be low when compared to the levels of employment in the sector generally. The change in employment in the agricultural sector during the construction and operation (including maintenance) of Springwell Solar Farm is considered to be **not significant**.

The effects during decommissioning are expected to be equal to or less than those experienced in during construction.

Agricultural land holdings

During construction, it is expected that a portion of the land used for agriculture will be lost and therefore crop production and the amount of land available for the grazing of animals will reduce year on year during the construction period. This effect is considered to be **not significant**.

Springwell Solar Farm will result in 0.3% of agricultural land in Lincolnshire being temporarily taken out of use for agricultural purposes. Engagement with the agricultural operators has confirmed that during the operational period the employment supported by the agricultural activities within the Site would continue and be redistributed on the operator's other sites nearby. The temporary reduction of agricultural land would not result in the net loss of employment. This effect is considered to be **not significant**.

The effects during decommissioning are expected to be equal to or less than those experienced in during construction.

Tourism

Receptors located within 3 kilometres of the Site include visitors to the Stepping Out Network, other public rights of way and Royal Air Force Digby.

Significant landscape and visual effects have been identified at five public rights of way/Stepping Out Network Trails (during construction) and four public rights of way/ Stepping Out Network Trails (during operation (including maintenance)). Public rights of way and the Stepping Out Network Trails are heavily used by tourists and therefore significant visual effects may deter tourists from visiting the area. However, the network has been designed to link routes together and although the routes next to Springwell Solar Farm may be used less, the wider network is not likely to be impacted. As the public rights of way and Stepping Out Network can continue to be used, services linked to the tourist industry, such as local hospitality and businesses, are not likely to be impacted. Therefore, effects on tourism during the construction and operation (including maintenance) of Springwell Solar Farm are considered to be **not significant**.

The effects during decommissioning are expected to be equal to or less than those experienced in during construction; therefore, effects are deemed to be **not significant**.

Occupancy rates

During the construction phase, some construction staff may commute to Springwell Solar Farm and therefore may stay in temporary accommodation such as hotels, bed and breakfasts and self-serviced accommodation. The increase in construction workers requiring temporary accommodation may reduce the provision of accommodation for tourists. According to research, an estimated 6% of construction workers typically stay in temporary accommodation whilst working on site.

Occupancy rates will not reach maximum capacity during any months of the year and therefore are able to cater for the tourist population as well as temporary construction staff, whilst leaving spare capacity for additional people should it be needed. Effects on occupancy rates during construction are considered to be **not significant**.

During operation (including maintenance), some staff may be required to stay in temporary accommodation whilst working on site. As discussed above, there are a potential 20 full time equivalent jobs for staff living within Lincolnshire during operation (including maintenance). Using research statistics, it can be estimated that approximately 2 workers would require temporary accommodation when Springwell Solar Farm is operational. The number of staff requiring temporary accommodation during operation is considered negligible when compared to occupancy rates in the region. Effects on occupancy rates during operation (including maintenance) are considered to be **not significant**.

The effects during decommissioning are expected to be equal to or less than those experienced in during construction.

Walkers, cyclists and horse riders

There will be no permanent closures of public rights of way during the construction of Springwell Solar Farm. However, it may be necessary to temporarily close or divert public rights of way during construction. These diversions will be agreed with the relevant public rights of way officers. The Applicant has also proposed measures to manage any impacts to public rights of way, including several new public rights of way and permissive paths that will be available for use during the operational (including maintenance) phase. Furthermore, the new public rights of way and permissive paths will remain beyond decommissioning.

These paths will enhance recreational connectivity across and around the Site and local residents and tourists may use the links as they have been designed to increase accessibility. Therefore, the effects to walkers, cyclists and horse riders using Public Rights of Way during construction and operation (including maintenance) is considered to be **beneficial** but **not significant**.

Traffic and Transport

This chapter considers the likely effects generated by the Proposed Development during construction, operation (including maintenance), and decommissioning in relation to traffic and transport.

The Strategic Road Network relevant to Springwell Solar Farm comprises the A1 and M180. However, construction traffic will dissipate to an unnoticeable level by the time it reaches strategic routes. A review of the National Highways 'Heavy and High Routes' for abnormal indivisible loads (extremely large or heavy items that cannot be broken down into smaller parts for transport) has also been undertaken where deliveries across the construction phase are anticipated to comprise transformer components, cranes and cable drums.

Local highway network assessments comprise the most detailed analyses where the A15, B roads and minor roads are located within a rural setting, connecting small settlements to the wider network. The settlements local to Springwell Solar Farm have sensitive receptors along them, such as residential areas, schools and community facilities. The road links correspond with a rural character, with often limited and/or narrow footway provision, limited street lighting and speed limits of 60 miles per hour outside of built-up areas.

For Springwell Solar Farm, construction vehicles will access the Site via the B1191, B1188, Gorse Hill Lane and Temple Road, with the A15 also an important link for construction traffic.

To mitigate the effects of construction and decommissioning traffic, specific measures and infrastructure have been embedded into the design of Springwell Solar Farm. Such embedded mitigation includes:

- Upgrade of A15/B1191/Temple Road junction to improve existing conditions for all users, including a non-motorised user crossing point;
- Improved junction and surfacing for all users of the A15/Gorse Hill Lane.
- B1191 Royal Air Force Digby and Ashby-de-la-Launde widening. Improved passing opportunities for all heavy goods vehicles.

Springwell Solar Farm also seeks to protect and enhance the existing public right of way network and ensure the provision of new and improved multi-user routes across the Site, aligning with the Central Lincolnshire Local Plan (2018-2040).

Additional mitigation measures are detailed in and secured by the **Outline Construction Traffic Management Plan [EN010149/APP/7.8]** and **Outline Public Rights of Way and Permissive Path Management Plan [EN010149/APP/7.12]**. These measures include:

- Maintaining access to public rights of way during the construction phase, including the provision of crossing points, a banksperson and temporary diversion routes where necessary (for example to allow cable crossing or photovoltaic installations to avoid the requirement for any public right of way closures with a default priority that construction traffic will give-way to other users);
- Providing sufficient protection/separation between existing public rights of way and the construction route where necessary (for example, Heras fencing);
- Restricting heavy goods vehicle movements to specific routes, using only the A15, B1191, a short section of the B1188 and the easternmost sections of Temple Road and Gorse Hill Lane;
- Avoiding typical network peak periods and reducing heavy goods vehicle movements during certain times of the day where possible (for example between 7am and 9am and 5pm and 7pm);
- Outlining the requirement to develop within the full Construction Traffic Management Plan, a communications strategy including regular meetings with contractors to review and address any issues associated with travel to/from the Site, as well as to relay information including any restrictions and requirements which should be followed;
- Implementation of temporary traffic management;
- Encouraging all construction staff to car share to reduce single occupancy car trips, by promoting the benefits of car sharing;
- Providing limited but sufficient on-site car parking to accommodate the expected parking demand of construction staff;
- Potentially implementing a shuttlebus/minibus service to transfer non-local staff to/from local areas to reduce vehicle trips on the surrounding highway network. Whilst these locations are currently unknown, these are likely to be locally based in Lincoln; and
- As necessary, access for emergency vehicles will also be achievable via several alternative existing access points (for example, should the proposed access points become blocked or unavailable).

During construction, the ‘all vehicle’ daily two-way trips are not predicted to increase by more than 30% across any link. However, heavy goods vehicle two-way trips are predicted to increase by more than 30% on a number of roads, although any potential effect would be temporary.

The construction traffic associated with each Primary Construction Compound has been assessed as a worst case, acknowledging that construction of Springwell Solar Farm is anticipated to be phased and therefore not all effects will occur simultaneously. Furthermore, the relatively high percentage increase in heavy goods vehicle traffic on some roads reflects the low number of existing heavy goods vehicle movements, particularly along the B1191 and minor roads. In reality, the increase of 40 heavy goods vehicle movements in both directions (80 two-way) along the B1191 is equivalent to an additional heavy goods vehicle every 15 minutes in each direction.

During construction, the effect of daily total traffic on the B1191, B1188, Temple Road is **not significant**. On the B1191, the proposed addition of a new public rights of way between Royal Air Force Digby and Scopwick results in a **significant beneficial** effect. The effect across all junctions during the morning and afternoon construction peak is considered to be **not significant**.

The effect of the full road closure of Gorse Hill Lane during construction to allow for the upgrade of a short section of this road is considered to be **not significant**. Effects on temporary off-peak single lane closures for the A15, B1191 and B1188 (to facilitate works/cable route crossings) during construction are also considered to be **not significant**.

Limited traffic is anticipated to be generated during the operational (including maintenance) phase. Therefore, effects are considered to be **not significant**. Furthermore, it is considered reasonable to assume that the impacts during the decommissioning phase, while adopting similar mitigation measures, will be the same as, or not greater than, the construction phase and therefore **not significant**.

Water

This chapter considers the likely effects generated by the Proposed Development during construction, operation (including maintenance), and decommissioning in relation to water quality and resources.

If not mitigated, construction and decommissioning activities can result in an increased risk of silt-laden runoff which in turn has the potential to degrade water quality within the receiving watercourses. During construction, there would be temporary increased demand on water resources for the supply of potable and non-potable water for construction activities.

Consultation has been undertaken between Anglian Water and the Applicant to determine potential impacts on water supply. Potable water for construction and operation will have a preference to use mains supply for permanent welfare facilities within Springwell Solar Farm, whilst a bowser supply will be supplied to temporary facilities. The effect of the usage of potable water supplies during operation (including maintenance) will be **not significant**, given the relatively small number of staff based on site. There is a preference for using rainwater harvesting for non-potable water use during construction and operation (including maintenance). There will be no impact on the existing sewer assets, as it is assumed that in-situ sewage treatment will be used.

Metheringham Beck is the closest Water Framework Directive waterbody and the only one within the Site. **ES Volume 3, Appendix 15.1: Water Framework Directive**

(WFD) Waterbodies Stage 1 Screening Technical Note [EN010149/APP/6.3] has been produced and concluded that with appropriate mitigation measures in place, the solar development's impact on watercourses classified under the Water Framework Directive is considered negligible and not significant. Based on this assessment, no further Water Framework Directive screening or detailed assessment stages are required for the Development Consent Order Application for Springwell Solar Farm. The Environment Agency agreed that no further assessment related to the Water Framework Directive would be required (refer to **ES Volume 3, Appendix 15.2: Water Framework Directive (WFD) Engagement [EN010149/APP/6.3]**).

A **Flood Risk Assessment [EN010149/APP/7.16]** has evaluated multiple sources of flooding and has determined an overall low flood risk to Springwell Solar Farm, given the limited extents of Flood Zone 3 and surface water flooding identified within the Site.

To avoid, prevent, or reduce significant adverse effects on water quality during the construction and decommissioning phases, several mitigation measures will be implemented. These measures are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]** and **Outline Decommissioning Environmental Management Plan [EN010149/APP/7.13]**. The protection of water quality will be focused on reducing the mobilisation of silt and pollutant chemicals from entering watercourses, usually via rainfall runoff. Such mitigation measures will also ensure that there are no effects of water degradation within the Metheringham Beck catchment, therefore having no impact on the Water Framework Directive waterbody. Mitigation measures specific to the reduction of mobilisation of silt and pollutant chemicals from entering watercourses include the following:

- No vehicle, equipment or material storage is permitted within the Flood Zone 2 or Flood Zone 3 or within 20 metres of watercourses where practicable.
- The placement of stockpiled materials as far away as practically possible from sensitive receptors (including watercourses).
- Vegetation removal is undertaken on a phase-by-phase basis to avoid excessive exposure of bare soil.
- Silt fencing or straw bales to be placed downslope of construction works to prevent silt entering watercourses.
- Additional silt fencing kept on site for deployment at short notice.
- A wheel wash at the site access to reduce silt migration across the Site.
- Vehicles to be inspected at the start of each day, and vehicles showing signs of fuel/oil drips, missing fuel caps, or damaged hydraulics will be rejected and not used on Site before repair.
- Fuels will be stored in a double skinned locked and bunded fuel bowser as far away from watercourses as reasonably practicable. Refuelling will be carried out over a drip tray. These will be regularly maintained and inspected for rainwater. Rainwater will be removed by specialist removal. A spill kit will be located next to any bowser.

- Spill kits will contain as a minimum: spill booms, granules, mats and gully covers.
- If groundwater pumping is necessary for excavations, the wastewater must be disposed of in accordance with Environment Agency guidance.
- All surface waters and drains must be protected from silt runoff using gully guards, straw bales, gravel traps or silt fencing. These measures must be inspected daily.

Cumulative Effects

Intra-project combined effects

Intra-project cumulative effects consider the combined effects of Springwell Solar Farm on a common sensitive receptor. For example, how residents may be impacted by both noise and landscape effects, or how dust emissions and noise during construction may together impact on ecological receptors.

The only receptors that has been identified as having more than one effect upon them are users of the B1191 during the construction phase, as they may experience temporary changes in traffic volume and temporary visual amenity changes. Mitigation measures to manage the individual impacts are detailed in and secured by the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]**.

Inter-project cumulative effects

Inter-project cumulative effects are the combined effects of Springwell Solar Farm and other existing development and/or approved developments on a single receptor/resource. For example, how residents may be impacted by noise during the construction of Springwell Solar Farm and other existing development and/or approved developments with overlapping construction programmes. Inter-project cumulative effects also relate to the operational (including maintenance) phase; for example, where the visual amenity of a receptor is impacted by both Springwell Solar Farm and the final structure of other existing development and/or approved developments, and the cumulative effect becomes significant.

The short-list of other existing development and/or approved developments within 10 kilometres of Springwell Solar Farm was consulted upon with North Kesteven District Council and Lincolnshire County Council between July and August 2024, with 31 August 2024 being the assessment cut-off date.

When considering the inter-project cumulative effects with other existing developments and/or approved developments, it has been assumed that standard and good practice mitigation measures will be applied to the developments (for example, use of Construction Environmental Management Plans) and that such mitigation would be secured as part of any planning permission granted.

The inter-project cumulative effects of Springwell Solar Farm and National Grid Navenby Substation

Springwell Solar Farm will connect into and export the energy generated from it to the proposed National Grid Navenby Substation that is anticipated to be located north of Heath Lane, Navenby. A non-statutory consultation for the development has

been undertaken by National Grid, who is the applicant for that project. Given the inter-relationship between Springwell Solar Farm and the proposed National Grid Navenby Substation, the assessment has considered the cumulative effects of the two developments together.

During construction of both developments, traffic generation may exceed the air quality screening criteria. However, for Springwell Solar Farm, this will be managed through the **Outline Construction Traffic Management Plan [EN010149/APP/7.8]**, with dust soiling effects bring managed through the **Outline Construction Environmental Management Plan [EN010149/APP/7.7]**.

Both developments may require the removal of sections of the Navenby Heath Road Verges Local Wildlife Site which is anticipated to be mitigated by both developments through appropriate habitat creation. Similarly, construction and operation related impacts to ground nesting birds and bats will be mitigated through appropriate mitigation measures secured through management plans.

Unknown below ground archaeology would need to be explored through a programme of archaeological investigation ahead of construction, and therefore mitigated for both developments separately. No designated heritage assets would be affected by either development.

The vehicle routing to the National Grid Navenby Substation is uncertain, because National Grid has not yet published this information. The A15/B1202 junction has been identified as operating close to its maximum theoretical capacity. Lincolnshire County Council is currently exploring potential upgrades and improvements to the junction. Springwell Solar Farm includes traffic management measures within the **Outline Travel Plan** which forms part of the **Outline Construction Traffic Management Plan [EN010149/APP/7.8]**. Should this improvement not arise, it is anticipated that National Grid Navenby Substation will also be required to implement similar alternative measures.

If construction phases overlap, there is the potential for **significant adverse** inter-project cumulative effects on Landscape Character Area 7: Limestone Heath. Similarly, if construction of the two developments overlaps, there would be a **significant adverse** inter-project cumulative effect on views from the A15. During operation, no significant simultaneous visual effects (from a static location in the landscape) would occur between the two developments. There would be a visual effect (when moving through the landscape) when travelling along the A15, with effects on views extending approximately up to the B1202 (further north than effects to views from Springwell Solar Farm alone).

The increase in construction jobs with both Springwell Solar Farm and National Grid Navenby Substation is considered to be of likely **significant** benefit.

The inter-project cumulative effects of Springwell Solar Farm and other existing development and/or approved developments

Seventeen other existing development and/or approved developments within 10 kilometres of Springwell Solar Farm have been identified for inclusion on the short-list. These include residential developments, solar parks, quarry extensions, industrial and employment parks and infrastructure (e.g. road links).

When reflecting on the implementation of standard and good practice mitigation measures, the following inter-project cumulative effects have been identified:

- **Air quality** - Springwell Solar Farm and all of the short-listed other existing development and/or approved developments are predicted to slightly exceed the air quality screening criteria for Light Duty Vehicles and Heavy Duty Vehicles on a number of road sections. However, there are a minimal number of high sensitive receptors located close to the affected roads, and Air Quality Standards are not expected to be exceeded.
- **Biodiversity** – There is the potential for a cumulative change in farmland habitat across North Kesteven district, affecting ground nesting birds and bats. As with Springwell Solar Farm, it is assumed that each other existing development and/or approved development would be retaining and improving sufficient habitat to support the identified populations of ground nesting birds and bats at the respective sites.
- **Cultural heritage** - Springwell Solar Farm, in combination with the proposed anaerobic digester plant (planning application reference: EIA/37/22)[1] and Navenby Heath battery storage (planning application reference: 23/0390/EIA SCO), could result in minor changes to designated heritage asset settings. However, considering the existing vegetation screening and intervening buildings, setting are considered to be **not significant**.
- **Cultural heritage** - The unknown archaeological remains with the cable route for Springwell Solar Farm and the boundary for the proposed Royal Air Force Digby office and training building (planning application reference: 24/0959/FUL) could overlap. A programme of archaeological investigations before construction would mitigate these cumulative effects.
- **Traffic** - Construction vehicles for Springwell Solar Farm, Heckington Fen Solar Park (planning application reference: EN010123) and Sleaford West (planning application reference: 16/0498/ OUT) would all use the A15, which could cumulatively impact other road users and sensitive locations.
- **Landscape** – There is the potential for minor landscape and visual cumulative effects from Springwell Solar Farm, the Navenby Heath battery storage (planning application reference: 23/0390/EIA SCO) and the proposed Royal Air Force Digby office and training building (planning application reference: 24/0959/FUL). Both developments would give rise to effects on the character of Landscape Character Area 7: Limestone Heath. Considering Springwell Solar Farm and the proposed Royal Air Force Digby office and training building in combination, a **not significant** visual effect would be experience by users of Navenby Lane, B1191 (Heath Road)

[1] The planning application references can be used to find the environmental documents submitted as part of the respective planning applications; North Kesteven District Council's planning portal (https://planningonline.n-kesteven.gov.uk/online-applications/), Lincolnshire County Council's planning portal (https://lincolnshire.planning-register.co.uk/Disclaimer?returnUrl=%2F) or the Nationally Significant Infrastructure Project website (https://www.gov.uk/government/organisations/planning-inspectorate).

and public rights of way and lanes between the B1191 (Heath Road), Bloxholm Lane and Green Man Lane extending up to the A15.

Cumulative effects of Solar Photovoltaic developments within the county of Lincolnshire on Best and Most Versatile agricultural land

Other Solar Photovoltaic developments within Lincolnshire, and within 1 kilometre of the western boundary with Nottinghamshire, have been considered to assess the cumulative effects on Best and Most Versatile agricultural land.

An estimate of the total area of Best and Most Versatile agricultural land being temporarily lost by each Solar Photovoltaic development has been obtained using agricultural land classification information contained with the respective Environmental Statements, or earlier stages (for example, Scoping Reports or Preliminary Environmental Information Reports). Where such information was not available, the provisional agricultural land classification maps have been used to make an informed estimate. These do not provide a breakdown of grade 3a and 3b, and therefore a precautionary 50:50 split has been assumed.

Eighteen Solar Photovoltaic developments are proposed within the county of Lincolnshire and the Nottinghamshire border. The total Best and Most Versatile agricultural land within the respective development boundaries is estimated at 8,447.25 hectares, with Springwell Solar Farm occupying 525.4 hectares. Within Lincolnshire, the estimated Best and Most Versatile agricultural land is approximately 410,000 hectares using the provisional agricultural land classification maps. Alone, Springwell Solar Farm would affect 0.13% of the Best and Most Versatile agricultural land in Lincolnshire. If all eighteen Solar Photovoltaic developments were granted permission, 2.06% of Best and Most Versatile agricultural land in Lincolnshire would be temporarily lost.

Land within cable and grid connection corridors would be reinstated to agricultural land after construction, to the existing land use. The majority of land within the Solar Photovoltaic areas would also be reinstated after the operational lifespan of the respective developments (between 40 and 60 years), to the existing land use. A small proportion may be permanently lost as a result of habitat mitigation and enhancements, where these are to be retained after operation ceases.

It should be noted that the estimates for Great North Road Solar Park (EN010162), Tween Bridge Solar Farm (EN010148) and Meridian Solar Farm (EN010169) are particularly high (over 1,000 hectares of Best and Most Versatile agricultural land individually) due to the lack of agricultural land classification survey information, as they are at earlier stages of development and planning than Springwell Solar Farm. If these developments are removed, the cumulative effect is 1.10% of Best and Most Versatile agricultural land.

Springwell Solar Farm will manage soil quality in accordance with the **Outline Soil Management Plan [EN010149/APP/7.11]** to prevent damage to soil structure. It is anticipated that the other Solar Photovoltaic developments will implement similar measures such that Best and Most Versatile agricultural land does not deteriorate during the lifespan of the individual developments.

Cumulative effects of Solar Photovoltaic developments within the county of Lincolnshire on population

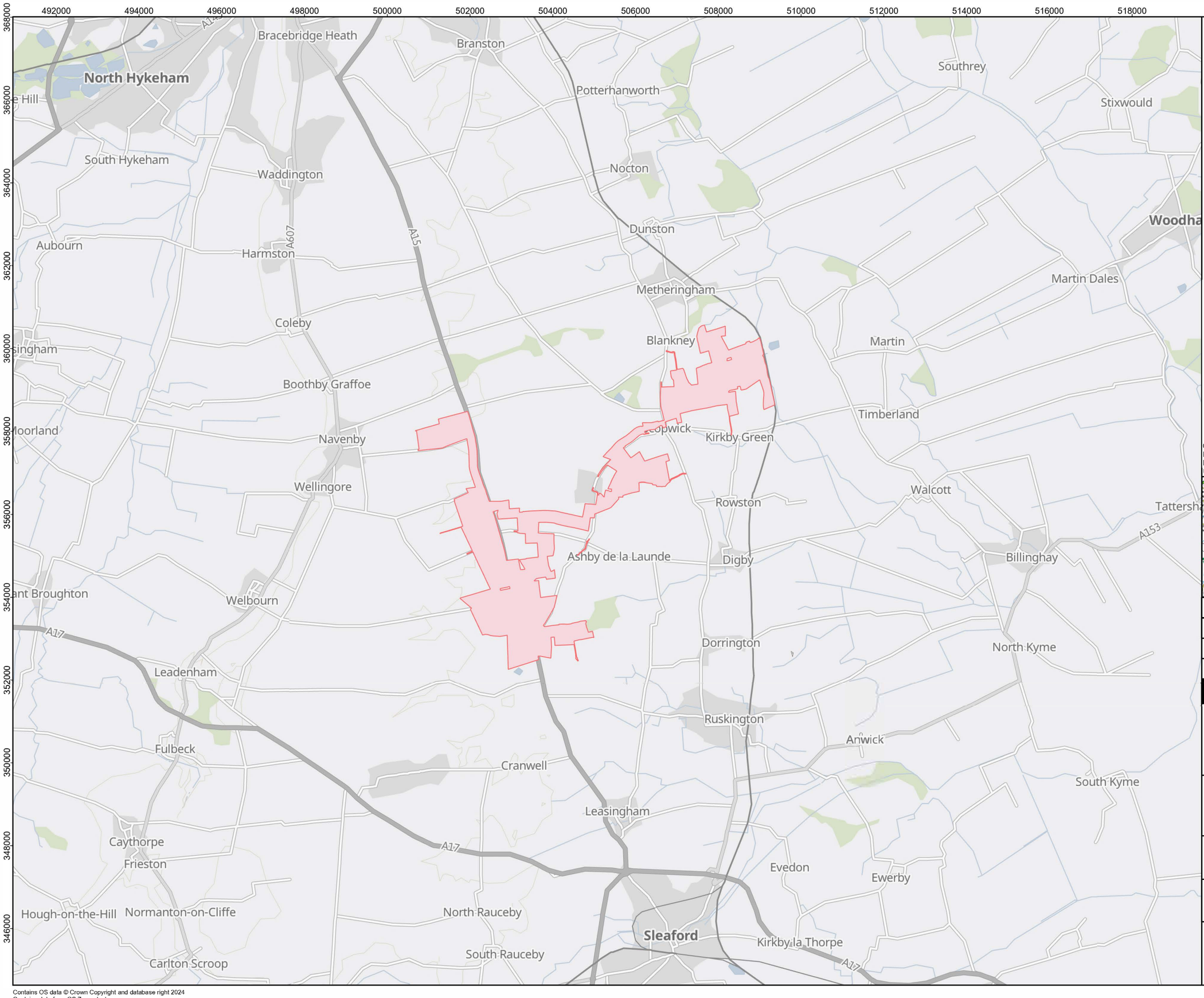
Assuming all eighteen of the Solar Photovoltaic developments were delivered over a 10 year period, this would temporarily create demand equivalent to 0.4% of existing resident construction workers within a 50 miles radius of Springwell Solar Farm today, and the operational projects would support the equivalent of 27% of full time equivalent employment in Lincolnshire's energy sector.

Given the scale of the developments, they are anticipated to contribute around 0.6% of the current construction Gross Value Added within a 50 miles radius of Springwell Solar Farm during construction, and 33% of the current energy sector Gross Value Added in Lincolnshire during operation.

A reduction in the indicative employment capacity of agricultural land is likely to be experienced if all eighteen Solar Photovoltaic developments are delivered. Lincolnshire currently has approximately 8,653 full time equivalent jobs in agriculture. The cumulative Solar Photovoltaic developments therefore account for 3.1% of the indicative agricultural employment capacity in agriculture in Lincolnshire.

However, some developments, as is the case of Springwell Solar Farm, could safeguard the employment supported by landholdings by moving the employment and or productivity to a nearby site.

Figure 1 - Location Plan



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Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:

ENVIRONMENTAL STATEMENT
NON-TECHNICAL SUMMARY
REGULATION 5(2)(a

TITLE:

FIGURE 1 LOCATION PLAN

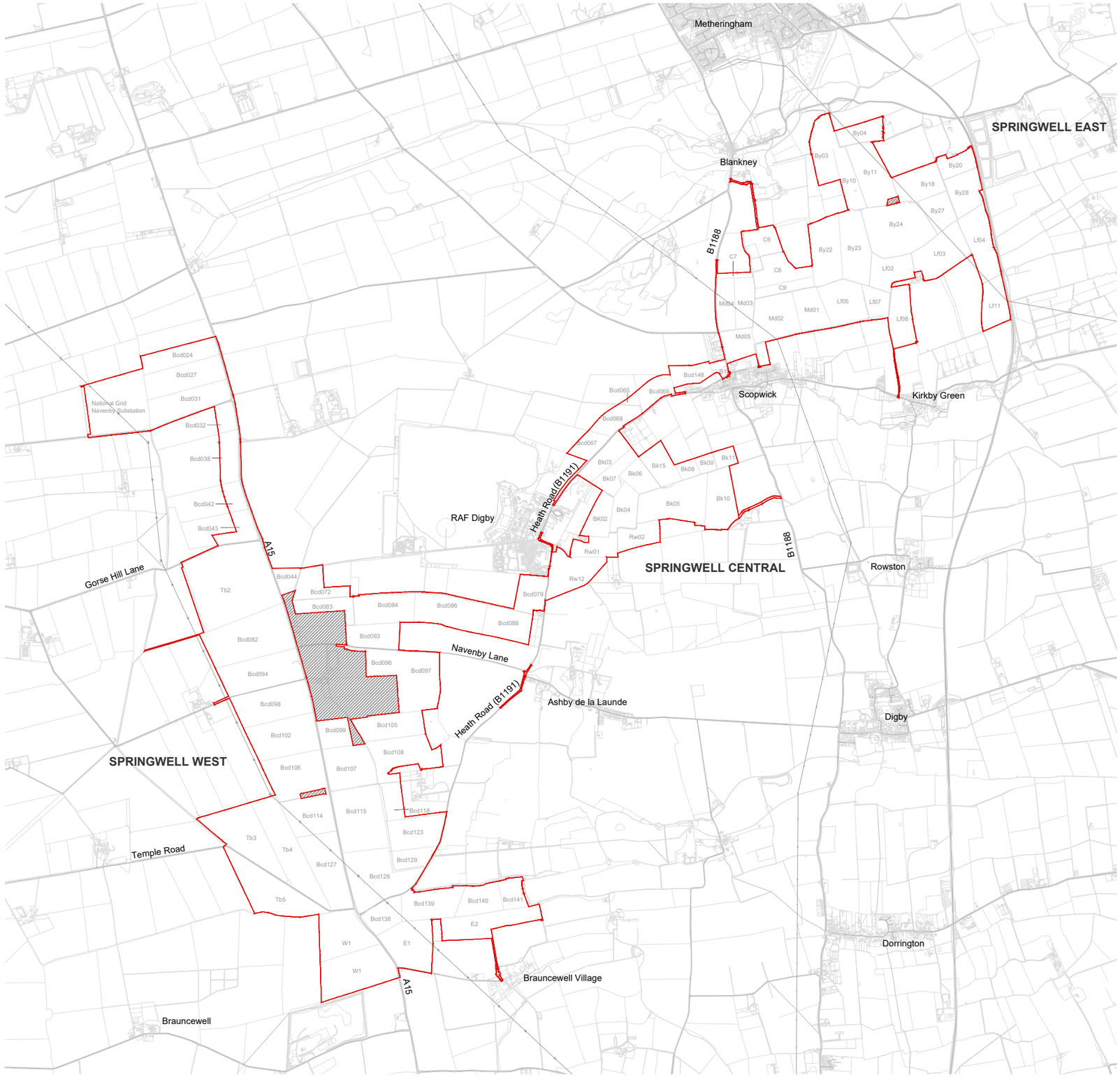
PINS REFERENCE NUMBER:
EN010149/APP/6.5

0 0.5 1 1.5 2 2.5
Kilometers
Scale: 1:85,000 @ A3

REV 01

Path: Z:\8622_EDF_Renewables_Acre_Lane\8gis\Projects\DCO\8622_Figure_1_1_Location_Plan.aprx\Map

Figure 2 – The Site



KEY:

Order Limits

Areas outside the Order Limits

NOTES:

1. Ordnance Survey (OS) MasterMap data adopted as the drawing base map.
2. The location of features shown are indicative only. Exact locations to be confirmed on site.
3. Additional features may be present on site that have not been identified on the OS data.
4. The Order Limits are drawn to Land Registry boundaries. In some locations the Land Registry boundaries differ from the OS MasterMap data which results in the Order limits not aligning with the line work shown on the base map.

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DOCUMENT:
ENVIRONMENTAL STATEMENT
NON-TECHNICAL SUMMARY
FIGURES REGULATION 5(2)(a)

TITLE:
FIGURE 2
THE SITE

PINS REFERENCE NUMBER:
EN010149/APP/6.5

SCALE : 1:40,000 @ A3

0 2.5km

REV: 01

Figure 3 – Existing Public Rights of Way across the Order Limits

LEGEND:

- Order Limits
- Public Right of Way

Promoted Routes

- Blankney Circuit
- Bloxholm Circular
- Kirkby Green Loop
- Navenby & the Viking Way
- Scopwick Loop
- Spires & Steeples Trail
- Temple Bruer & the Knights Templar

DOCUMENT: ENV/RONMENTAL STATEMENT
NON-TECHN/CAL SUMMARY
REGULATION 5(2)(a

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

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Springwell Solar Farm

DOCUMENT: ENV/RONMENTAL STATEMENT
NON-TECHN/CAL SUMMARY
REGULATION 5(2)(a

TITLE:
FIGURE 3: EXISTING PUBLIC RIGHTS OF WAY

PINS REFERENCE NUMBER:
EN010149/APP/6.5

0 0.5 1
Kilometers
Scale: 1:35,000 @ A3

REV 01

Figure 4 – Zonal Masterplan

SPRINGWELL EAST

SPRINGWELL CENTRAL

SPRINGWELL WEST

METHERINGHAM CP

BLANKNEY CP

SCOPWICK CP

SOUTH KESTEVEN DISTRICT

WELLINGORE CP

LE LAUNDE CUM BLANKNEY CP

TEMPLE BRUER WITH TEMPLE HIGH GRANGE CP

CRANWELL, BRAUNCEWELL AND BYARD'S LEAP CP

ROWSTON CP

DIGBY CP

DORRINGTON CP

RUSKINGTON CP

KEY:

- Order Limits
- Areas outside the Order Limits
- Proposed area for Solar PV development
- Proposed siting zone for Satellite Collector Compounds
- Proposed siting zone for BESS
- Proposed siting zone for Grid Connection Corridor
- Proposed siting zone for Springwell Substation and Main Collector Compound
- Proposed siting zone for Springwell Substation transformers
- Proposed siting zone for Earth Bund
- Indicative site access location
- Indicative secondary access location (emergency)
- Proposed area for green infrastructure
- Proposed area for community growing

NOTES:

1. Ordnance Survey (OS) 1:25,000 scale data adopted as the drawing base map.
2. The location of features shown are indicative only. Exact locations to be confirmed on site.
3. Additional features may be present on site that have not been identified on the OS data.
4. The parameter plans are drawn to OS MasterMap data. In some locations OS MasterMap data differs from the OS 1:25,000 data which results in parameters not aligning with the line work shown on the base map.
5. The following components are not shown on the parameter plans: cable route corridors, utility connections, boundary fencing and CCTV, inverter and transformers and switchgear compounds, internal access tracks, drainage, construction access and compounds, and offsets to underground utilities.

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DOCUMENT:
ENVIRONMENTAL STATEMENT
VOLUME 5: NON TECHNICAL SUMMARY
REGULATION 5(2)(a)

TITLE:
FIGURE 4
ZONAL MASTERPLAN

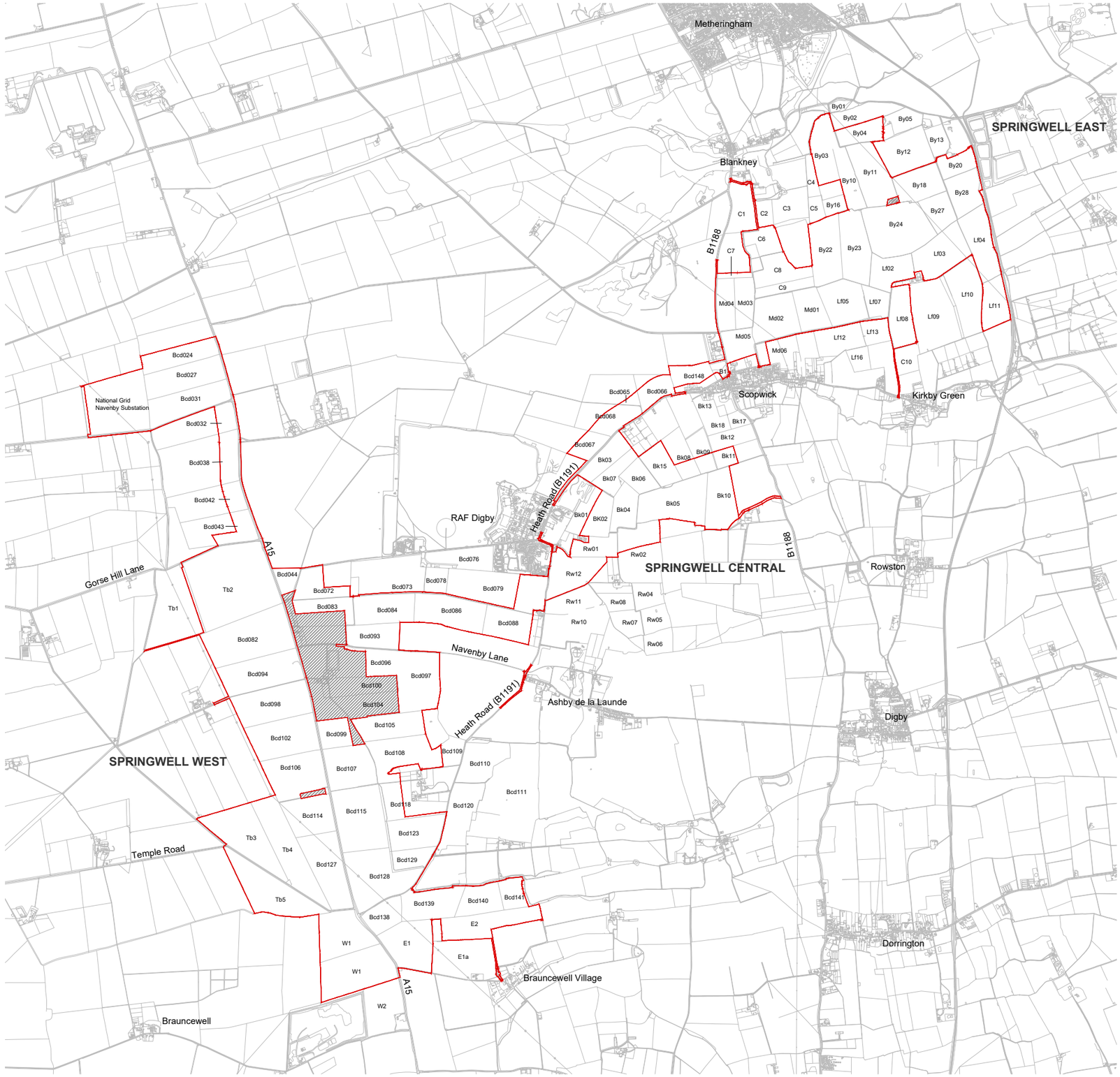
PIN REFERENCE NUMBER:
EN010149/APP/6.5

SCALE : 1:40,000 @ A3

0 2.5km

REV: 01

Figure 5 – Field Numbering System



KEY:

Order Limits

Areas outside the Order Limits

NOTES:

1. Ordnance Survey (OS) MasterMap data adopted as the drawing base map.
2. The location of features shown are indicative only. Exact locations to be confirmed on site.
3. Additional features may be present on site that have not been identified on the OS data.
4. The Order Limits are drawn to Land Registry boundaries. In some locations the Land Registry boundaries differ from the OS MasterMap data which results in the line work shown on the plan.

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DOCUMENT:
ENVIRONMENTAL STATEMENT
NON-TECHNICAL SUMMARY
REGULATION 5(2)(a)

TITLE:
FIGURE 5
FIELD NUMBERING SYSTEM

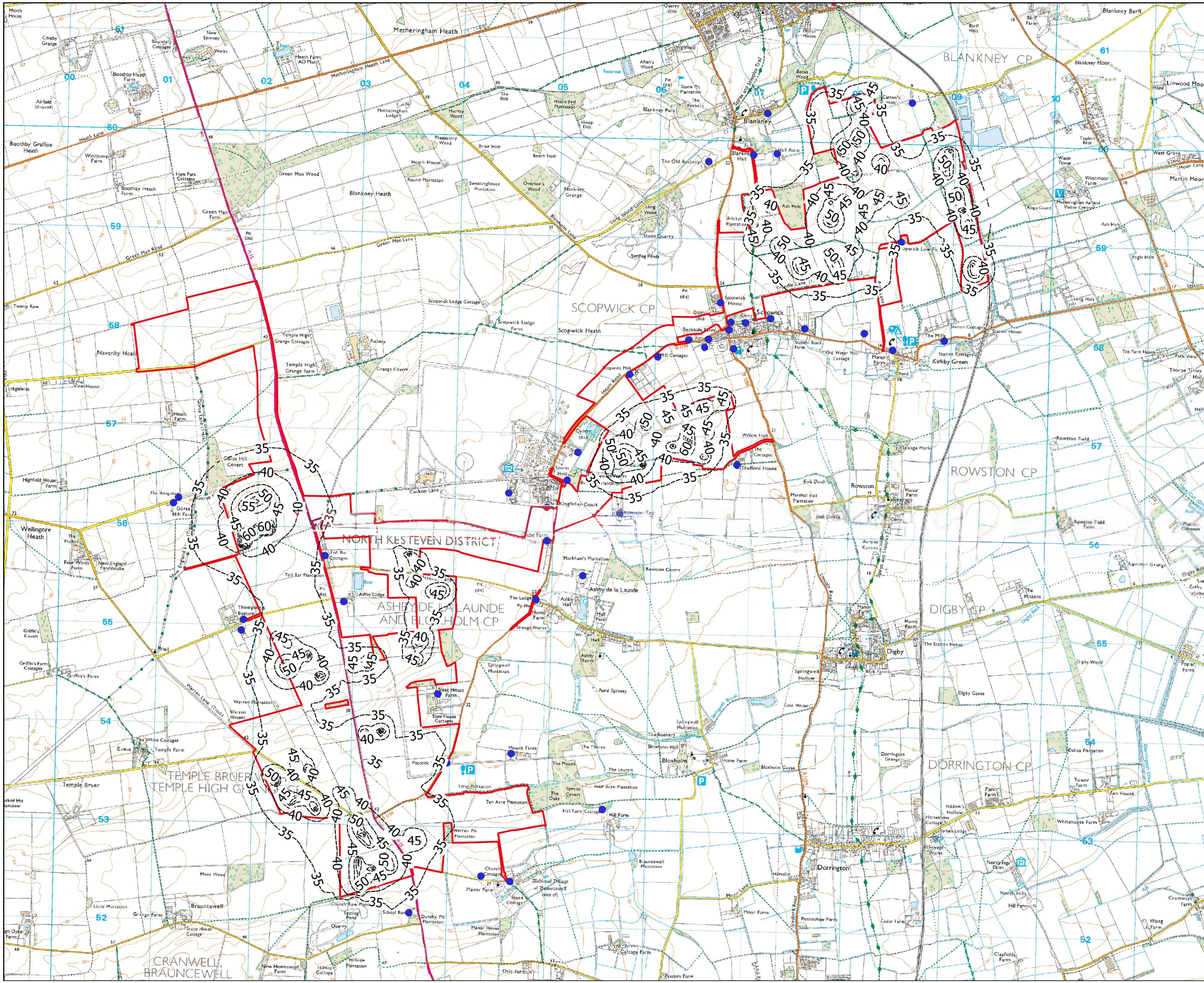
PIN REFERENCE NUMBER:
EN010149/APP/6.5

SCALE : 1:40,000 @ A3

0 2.5km

REV: 01

Figure 6 – Day-time Specific Noise Contours



Legend

Daytime Specific Noise Contours (dBA), 1.5m above ground

Order Limits

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01	Nov 2024	DCO Submission	RSK	RSK	EDF

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DOCUMENT: ENVIRONMENTAL STATEMENT NON-TECHNICAL SUMMARY REGULATION 5(2)(a)

TITLE: FIGURE 6 DAYTIME OPERATIONAL NOISE CONTOURS

PINS REF: EN010149/APP/6.5

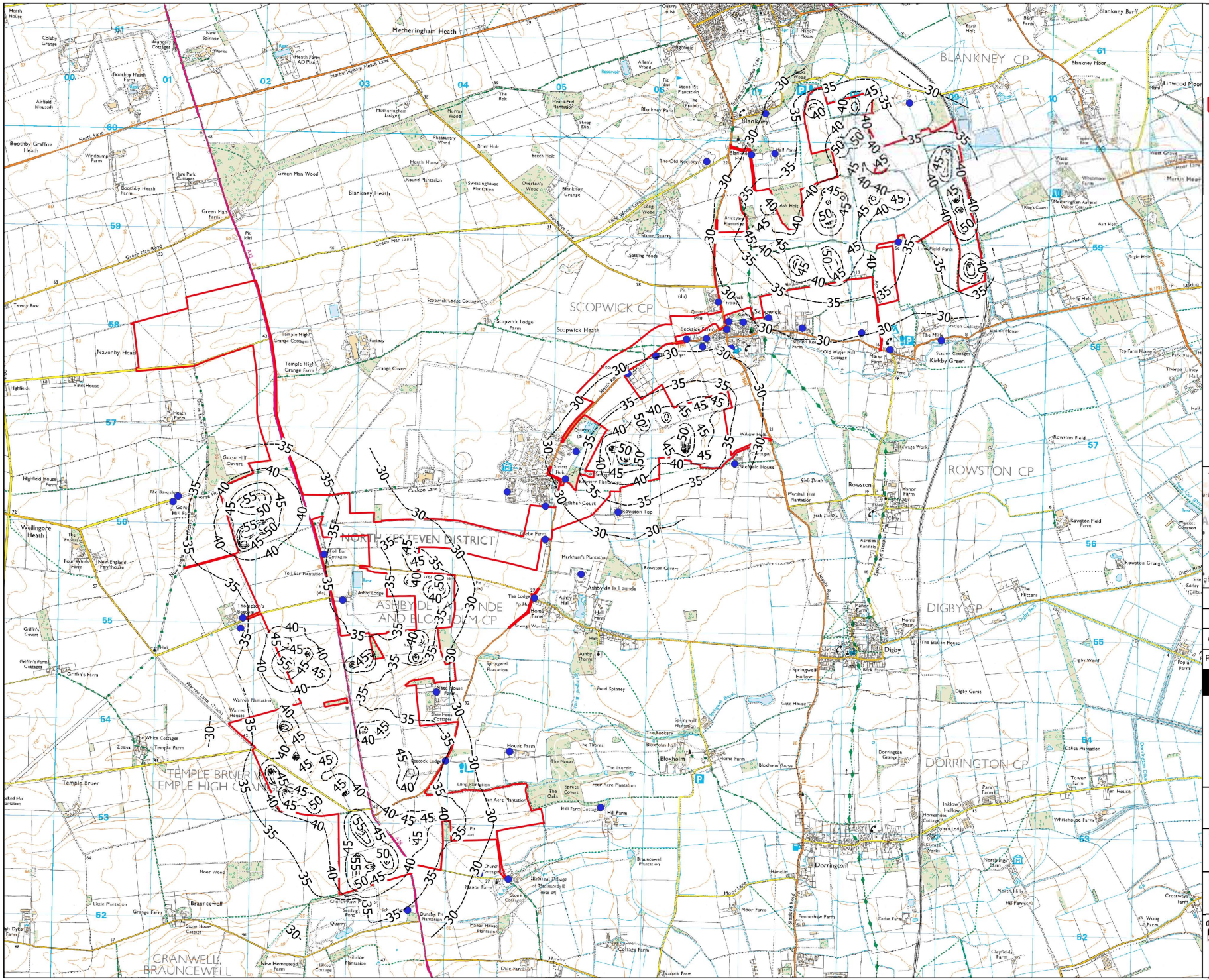
0 0.7 1.4

Kilometers

Scale: 1:60000 @A3

REV 01

Figure 7 – Night-time Specific Noise Contours



Legend

- Night-time Specific Noise Contours (dBA), 4m above ground
- Order Limits

Rev	Date	Description	Drn	Chk	App
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DOCUMENT: ENVIRONMENTAL STATEMENT NON-TECHNICAL SUMMARY REGULATION 5(2)(a)

TITLE: FIGURE 7 NIGHT-TIME OPERATIONAL NOISE CONTOURS

PINS REF: EN010149/APP/6.5

0 0.7 1.4

Kilometers

Scale: 1:60000 @A3

REV 01

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Solar Farm

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Application Document Ref: EN010149/APP/6.5
Planning Inspectorate Scheme Ref: EN010149