EAST YORKSHIRE SOLAR FARM

East Yorkshire Solar Farm
EN010143

Consultation Report Appendix

Appendix K Section 47 Consultation M aterial
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Regulation 5(2)(q)
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Prepared for:

East Yorkshire Solar Farm Limited

Prepared by:

AECOM Limited

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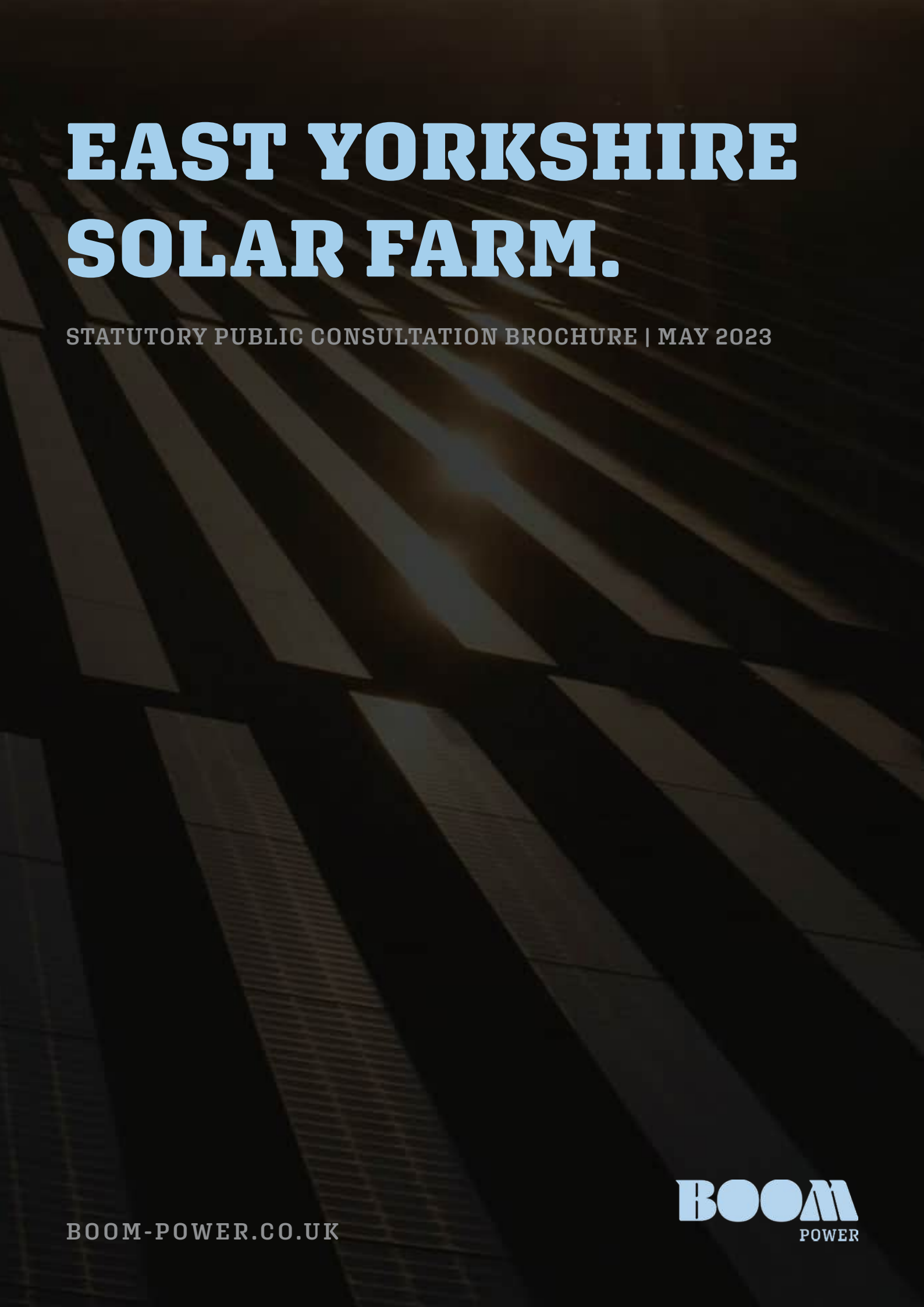
K.1 Statutory Consultation booklet

EAST YORKSHIRE SOLAR FARM.

STATUTORY PUBLIC CONSULTATION BROCHURE | MAY 2023



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BOOM POWER

BUILD
OWN
OPERATE
MAINTAIN.

INTRODUCTION.

East Yorkshire Solar Farm Limited (a Boom Power company) is proposing a new solar farm with energy storage, known as East Yorkshire Solar Farm, situated between the villages of Gribthorpe, Spaldington and Wressle, and the town of Howden (the Scheme).

The Scheme will generate approximately 400 megawatts (MW) of low-carbon electricity, enough to power around 100,000 homes and contributing to the government's targets of reaching net-zero by the year 2050 and 70 gigawatts of solar generated electricity by 2035.

The Scheme comprises solar photovoltaic (PV) panels; batteries to store some of the energy generated so that it can be released to meet peaks in demand; underground cabling between the areas of panels and the National Grid's substation at Drax; areas of landscaping and biodiversity enhancement; and associated infrastructure. The land required for the Scheme (including the cable routes) covers an area of approximately 1,445 hectares.

The UK is a net importer of electricity. The Scheme will contribute to the UK's urgent need to transition to a sustainable, clean future by enabling energy security and self-sufficiency.

East Yorkshire Solar Farm is a Nationally Significant Infrastructure Project (NSIP) because it has a proposed generating capacity of more than 50 MW of electricity. Permission for these types of development is given through a Development Consent Order (DCO), which is granted by the Secretary of State.

We introduced our initial proposals during a non-statutory consultation held from 3 October 2022 to 30 October 2022.

We are holding a second consultation, also known as a statutory consultation, from **9 May 2023 to 20 June 2023.** This brochure explains more about the proposal, the statutory consultation, how the DCO process works, and most importantly how you can have your say.

400MW
LOW-CARBON ELECTRICITY

100,000 HOMES POWERED

2050 NET ZERO TARGET

WHY ARE WE CONSULTING?

Consultation is an opportunity for both the developer, in this case East Yorkshire Solar Farm Limited, and the community to share information and feedback on a proposed development.

We have prepared our Statement of Community Consultation (SoCC) which explains how we will carry out this consultation including details of how we will ensure that the consultation is fair, transparent, and inclusive. We consulted with the host Local Authorities, East Riding of Yorkshire Council, North Yorkshire County Council and Selby District Council (prior to the latter two being replaced by North Yorkshire Council in April 2023) and incorporated their comments in the final SoCC.

We held a non-statutory consultation in October 2022 as the first step in the consultation process. We presented our initial proposals and sought the views of the community and stakeholders. The feedback has helped us to develop our designs. The plans presented in this brochure incorporate suggestions and ideas submitted in response to our first consultation.

We are now launching a statutory consultation, as required by the Planning Act 2008, which allows us to present more detailed plans of how East Yorkshire Solar Farm will be constructed and operated.

We want to hear from the local community, groups, businesses, and stakeholders. We will consider your thoughts and ideas, and where practicable, incorporate them into the final design. Your input is important to us, and all responses received during the consultation period will be considered.

Following this consultation, we will produce a Consultation Report. This report will form part of our DCO application and will explain how we considered and responded to your feedback.

WHO ARE BOOM POWER?

Boom Power is a British company. All of our solar farms are funded using private capital, with no government subsidies or other public money being used, and East Yorkshire Solar Farm is no different. Our team have a long track record of building, developing and operating solar farms, particularly in the UK and in Australia. To find out more about our past projects, visit our website at: **www.boom-power.co.uk**

HOW YOU CAN FIND OUT MORE.

In this brochure we describe our proposal for East Yorkshire Solar Farm, its location and design, likely impacts and proposed mitigation of the identified impacts, as well as how you can have your say.

All the information in this brochure and all other consultation materials listed below are available to read on our website at: **www.boom-power.co.uk/east-yorkshire**

To view the accessible version of this information on our website, look for the logo at the bottom right-hand side of the screen to select the accessibility features you need.

CONSULTATION EVENTS.

We are holding four consultation events at venues across the local area. These are drop-in sessions where you can meet members of the project team, view information and plans, and ask any questions you have. Consultation feedback forms will be available to complete at the event or take away and return to us by freepost, or you can email your answers to the project email address.

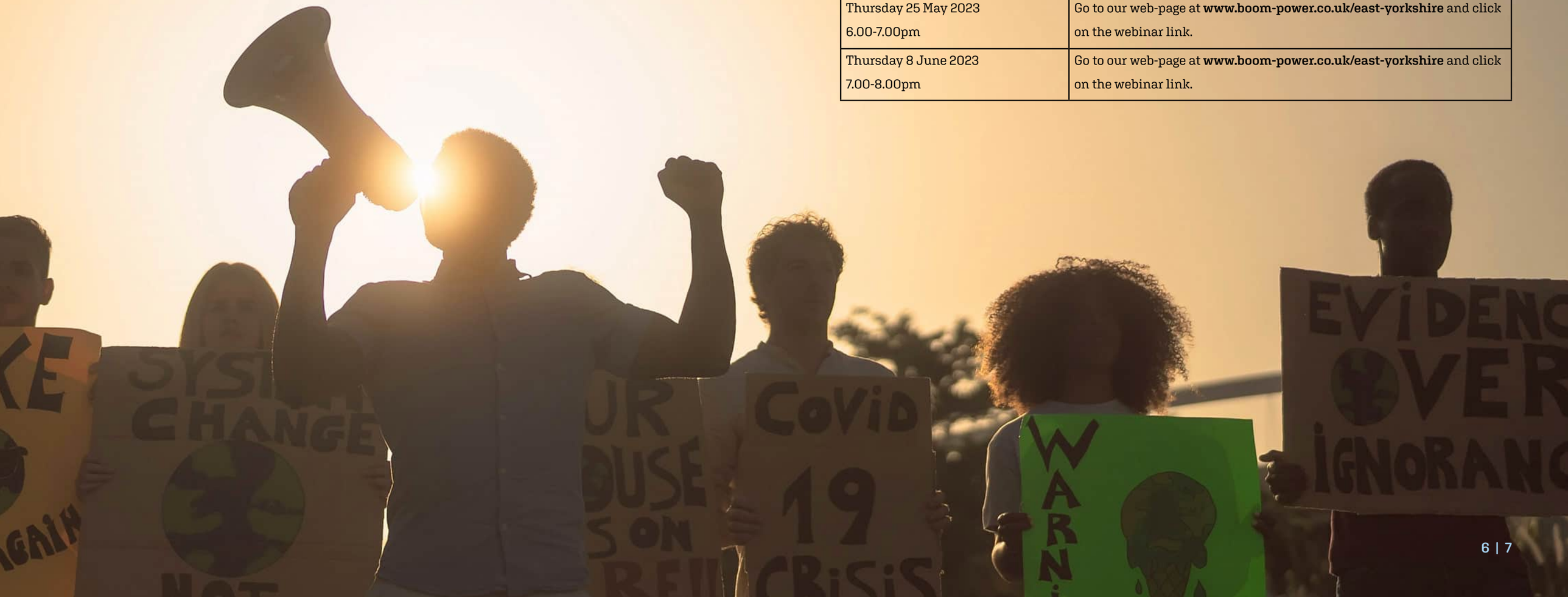
The consultation events will be held at:

Date and time	Location
Tuesday 16 May 2023 2.00-8.00pm	Loftsome Bridge Hotel, Station Lane, Wressle, Selby, YO8 6EN
Wednesday 24 May 2023 2.00-8.00pm	Boothferry Golf Course, Spaldington, East Yorkshire, DN14 7NG
Saturday 10 June 2023 2.00-8.00pm	Bubwith Leisure Centre, The Playing Fields, Main Street, Bubwith, East Yorkshire, YO8 6LX
Tuesday 13 June 2023 2.00-8.00pm	Howden Shire Hall, 13 Market Place, Howden, Goole, DN14 7BJ

In the event of a venue becoming unavailable, changing government guidelines due to COVID-19, or other unforeseen circumstances meaning the consultation events must be cancelled, we will inform people as early as possible of the cancellation. Where possible we will give details of an alternative event via our website.

We understand that not everyone is able to come to an event in person. Therefore, we are also holding two webinars. These will be online meetings featuring a short presentation from the project team, followed by a question-and-answer session.

Date and time	How to join
Thursday 25 May 2023 6.00-7.00pm	Go to our web-page at **www.boom-power.co.uk/east-yorkshire** and click on the webinar link.
Thursday 8 June 2023 7.00-8.00pm	Go to our web-page at **www.boom-power.co.uk/east-yorkshire** and click on the webinar link.



CONSULTATION MATERIAL.

In addition to this consultation brochure, a range of documents have been produced for the consultation which explain more about our proposal:

- Consultation Feedback Form – where you can share your comments on the proposal
- Frequently Asked Questions (FAQ) document – which gives answers to some of the frequently asked questions about the proposal
- Plans of the proposed solar farm and cable route
- Statement of Community Consultation (SoCC) – sets out how and when we will consult with stakeholders
- Preliminary Environmental Information (PEI) Report – details the results of environmental surveys to date, and provides the preliminary assessment of the potential impacts of the solar farm and how we propose to avoid or reduce these effects
- Non-Technical Summary of the Preliminary Environmental Information (PEI) Report – provides a summary of the environmental assessment findings

All of these are available from our website at **www.boom-power.co.uk/east-yorkshire**

A full set of the consultation documents are available to view throughout the consultation period at the locations listed on the next page.

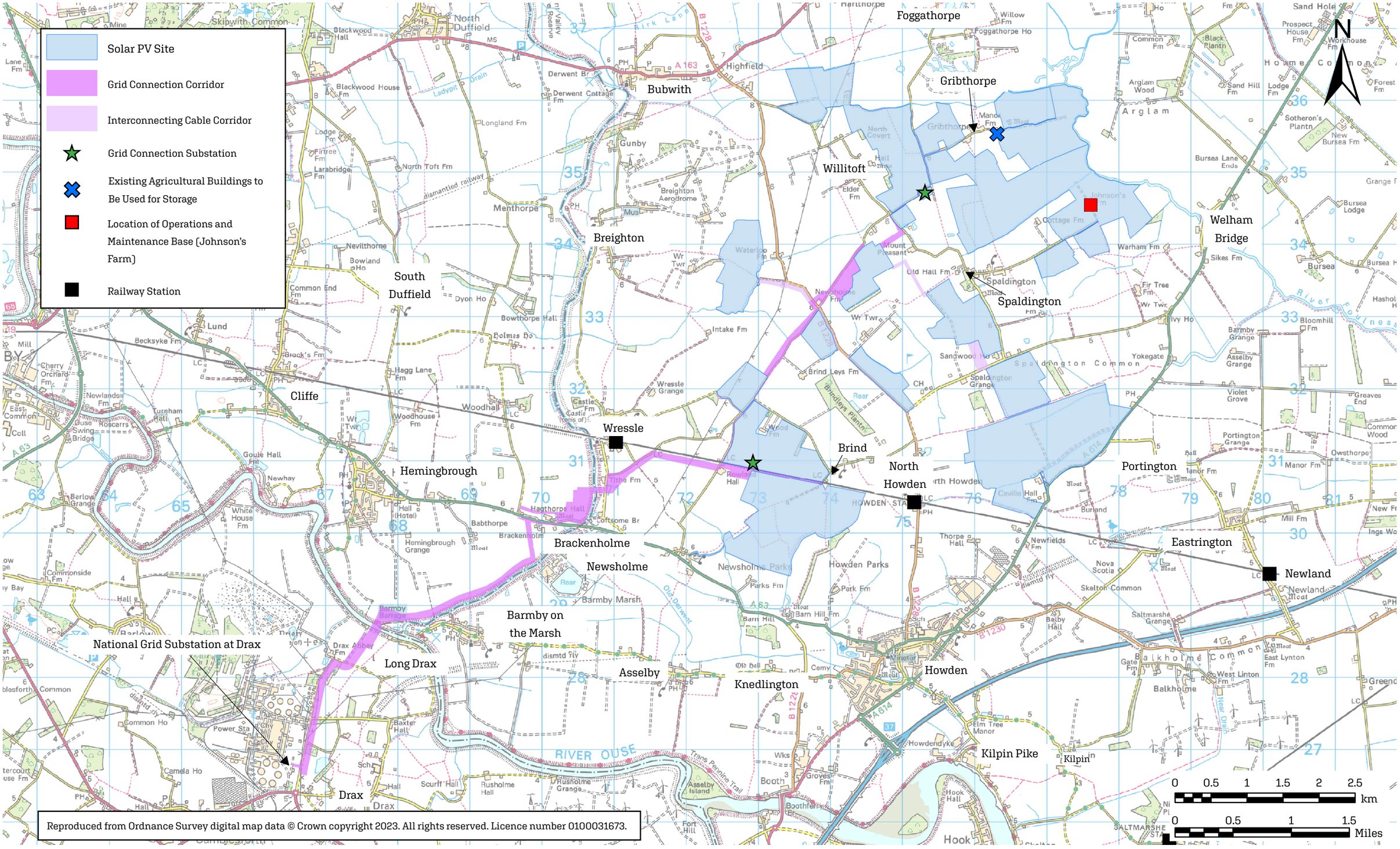
A paper copy of the consultation materials can be made available on request. Requests should be made during the consultation period. Requests for multiple copies of these documents will be considered on a case by case basis and may incur a charge. Digital copies of the consultation materials can be provided on USB memory stick upon request for a small charge. To request copies, please contact us by phone at **01964 782219** or by email on **eastyorkshiresolarfarm@boom-power.co.uk**

In the event of a document inspection venue becoming unavailable, or other unforeseen circumstances meaning the venue cannot open, we will publish alternative ways to inspect the documents on our website.

Document inspection venue	**Opening hours***	
Howden Library & Customer Service Centre 69 Hailgate, Howden, East Yorkshire, DN14 7SX	Monday Tuesday Wednesday Thursday Friday Saturday Sunday	9.30am to 4.30pm Closed 2.00pm to 7.00pm Closed 9.30am to 2.30pm 9.30am to 12.30pm Closed
Selby Library 52 Micklegate, Selby, North Yorkshire, YO8 4EQ	Monday Tuesday Wednesday Thursday Friday Saturday Sunday	9.30am to 7.30pm 9.30am to 5.30pm 9.30am to 5.30pm 9.30am to 12.30pm 9.30am to 5.30pm 9.30am to 12.30pm Closed
Bubwith Leisure Centre The Playing Fields, Main Street, Bubwith, East Yorkshire, YO8 6LX	Monday Tuesday Wednesday Thursday Friday Saturday Sunday	5.00pm to 7.00pm 5.00pm to 7.00pm 5.00pm to 7.00pm 5.00pm to 7.00pm 5.00pm to 7.00pm 9.00am to 12.00pm 9.00am to 12.00pm
Market Weighton Library & Customer Service Centre 14 Beverley Road, Market Weighton, YO43 3JP	Monday Tuesday Wednesday Thursday Friday Saturday Sunday	9.30am to 4.30pm Closed 9.30am to 6.30pm Closed 9.30am to 4.30pm 9.30am to 12:30pm Closed
East Yorkshire Mobile Library, Holme on Spalding Moor Village Hall Car Park, High Street, YO43 4EN	10:00am to 5:00pm on the following dates: Thursday 18 May Thursday 01 June Thursday 15 June	
East Yorkshire Mobile Library, Bubwith Vicarage Close, off Breighton Road, YO8 6LL	1:30pm to 5:00pm on the following dates: Friday 19 May Friday 2 June Friday 16 June	

*Please note, opening hours are correct as of time of publication.

PROPOSED SITE MAP.



OUR PROPOSAL.

East Yorkshire Solar Farm is a proposed solar farm which can export approximately 400 MW of renewable electricity to the National Grid. This is the equivalent of the electricity needs of approximately 100,000 homes.

LOCATION

The boundary shown on the proposed site map (page 10 & 11) illustrates all the land that may form East Yorkshire Solar Farm covering a total proposed land area of 1,445 hectares (3,570 acres).

Not all land within the boundary will be developed. Some will be set aside as buffer zones from the field edge to the nearest panels. Some areas will be set aside for environmental mitigation, including planting and creation of wildlife habitats. Existing public rights of way in these fields will be preserved, with spaces of at least fifteen metres (m) between the centre of the paths and the solar farm fences. Solar panels will be located a further five metres from the fence into the fields. Existing trees and hedgerows will be used to provide visual screening and maintain ecological habitats. This will be further improved by allowing hedgerows to grow taller and by planting new hedgerows, shrubs and trees.

A derelict building at Johnson's Farm will be redeveloped so that it can provide an operations and maintenance office. The existing barns in this area will be kept and used as stores for maintenance operations throughout the lifetime of the solar farm.

THE SOLAR FARM

The photovoltaic (PV) panels will be mounted on tables that will tilt through the day from east to west as they track the sun. This means that the panels will always be in the most efficient position. At their maximum tilt (at sunrise and sunset), the panels will briefly be up to 3.5 m high – although for most of the day they will be lower than this. The panels will lie flat overnight or in extreme weather, at a height of approximately 2.3 m. There will be a space between each row of panels in the fields which will be sufficient for cleaning.

Around 80 to 100 field stations will be distributed around the solar farm amongst the panels and at a distance of at least 250 m from residential properties. These will contain electrical equipment such as inverters, switchgear and a transformer. They will typically be housed in shipping containers and will be painted green in keeping with the surrounding environment.

Battery Energy Storage Systems (BESS) will be used at the solar farm to allow electricity to be stored and exported to the National Grid when demand is high. The batteries, housed within shipping containers, will be distributed throughout the solar farm, and located within the field stations rather than being contained within a single compound.

The field stations will connect via underground interconnecting cables to two grid connection substations on the site. The equipment for these will be outside and securely fenced. The maximum height of the grid connection substation structures will be 6 m, although most equipment will be at a lower level than this. They will also each contain a control building which will be approximately 20 m long, 7 m wide and 4 m high. The grid connection substations will connect via underground cable to National Grid's substation at Drax.

The concept masterplan in the centre of this brochure shows our current indicative proposals.

LANDSCAPE

The vast majority of existing tree lines and hedgerows will remain and be improved. We will plant additional trees and hedgerows to further screen the solar farm from view.

Deer-proof fencing will be erected around the solar PV areas at a height of up to 2.2 m. There will be a minimum of a 5 m buffer between the field boundary and the fence line.

CONSTRUCTION

Construction and deliveries will be governed by a construction and transport management plan and agreed with the local authority prior to commencement. Work on Sundays, Bank Holidays or through the night will only be carried out in exceptional cases and with prior notice. For example, where we need to complete horizontal directional drilling in an uninterrupted task to install cable ducts. This will be necessary where the cables pass under the rivers, the railway, and the Featherbed Lane footpath. Other locations may be determined during the design.

1,445
HECTARES OF LAND

ADDITIONAL TREES & HEDGEROWS PLANTED

CREATION OF WILDLIFE HABITATS

PUBLIC RIGHTS OF WAY PRESERVED

GRID CONNECTION AND INTERCONNECTING CABLE ROUTE.

When you turn on an electrical device at home, it isn't possible to say where that electricity has come from as the transmission networks are all interlinked. To get the electricity generated at the solar farm to homes and businesses, we need to connect to the National Grid transmission network which supplies electricity to where the demand is required, locally or nationally.

The solar farm will connect to the National Grid substation at Drax where it joins the National Grid transmission network. This connection will be via an underground cable, which will be installed within the corridor indicated in the proposed site map (page 10 & 11).

The smaller cables between the field stations and the grid connection substations will be buried up to 1.4 m deep, in a trench that will be of varying widths depending upon how many circuits are in it, typically starting at 0.8 m wide. The cables, which will go from the grid connection substations to the National Grid substation at Drax, will be approximately 1.4 m deep, depending on other utilities in the area, and in a trench approximately 1.5 m wide. Horizontal directional drilling will be used to place cable ducts under the River Derwent, the River Ouse and the Hull to Selby Railway so that the cable can pass under these without any need for overhead pylons. The routes of some public rights of way may be slightly altered for a short time while we install cables across their paths, with the exception of Featherbed Lane which will have the cable installed under it using horizontal directional drilling so that it does not need to be closed. The public rights of way along the rivers Ouse and Derwent will also be unaffected.

WHAT IS HORIZONTAL DIRECTIONAL DRILLING?

First used in the 1920s, this is a method of installing cables underground. This is used routinely in construction to avoid features such as rivers, busy roads or buried infrastructure. We will use this method for installing the cables that are needed to pass under the rivers, railway and Featherbed Lane. A drill will go to into the earth and bend the line it takes so that it passes completely under an obstacle, such as a river, and come out the other side. A duct is then installed which will be used for the cables.

YOU SAID. WE DID.

WHAT HAS CHANGED SINCE THE NON-STATUTORY CONSULTATION?

In October 2022 we introduced our scheme and asked for feedback from local residents, businesses and stakeholders as part of our non-statutory consultation, this consisted of:

- Four weeks from 3 October 2022 to 20 October 2022
- Over 1,200 brochures distributed
- Two in person events
- Two webinars
- 194 consultation responses received

Members of the local community were generous with their time, sharing detailed feedback on our initial proposals. We have taken this feedback and used it to help refine and develop our proposals.

You said.	**We did.**
The Scheme is too large and not appropriate for the area.	A total land area of 1,445 hectares (3,570 acres) has been identified for the Scheme, however not all the land will be used for solar PV panels and associated equipment. Whilst the total land area has increased since our first consultation, this increase has allowed us to sensitively design the buffer zones to include environmental mitigation in the form of separation buffers, planting and screening to retain and enhance the rural nature and the views of local area. The increase in land area also gives us flexibility to address through design any flood risk and archaeological issues that we might encounter, and which are still being investigated.
The Scheme is too close to residential properties, and will destroy residents' view.	Buffer zones and screening planting have been integrated into the site layout to provide separation between the nearest properties and the solar farm. Existing hedgerows will be retained to act as site boundaries, and where appropriate additional environmental screening will be provided through planting of native shrubs and trees.
The fencing will be too high and will create a sense of being trapped.	Deer-proof fencing will be erected at a height of up to 2.2 m to the perimeter of the solar panels fields. The fencing is a mesh style fence with wooden posts and will have minimal disruption on views across the landscape. In addition, the fencing will not impede access for smaller wildlife.

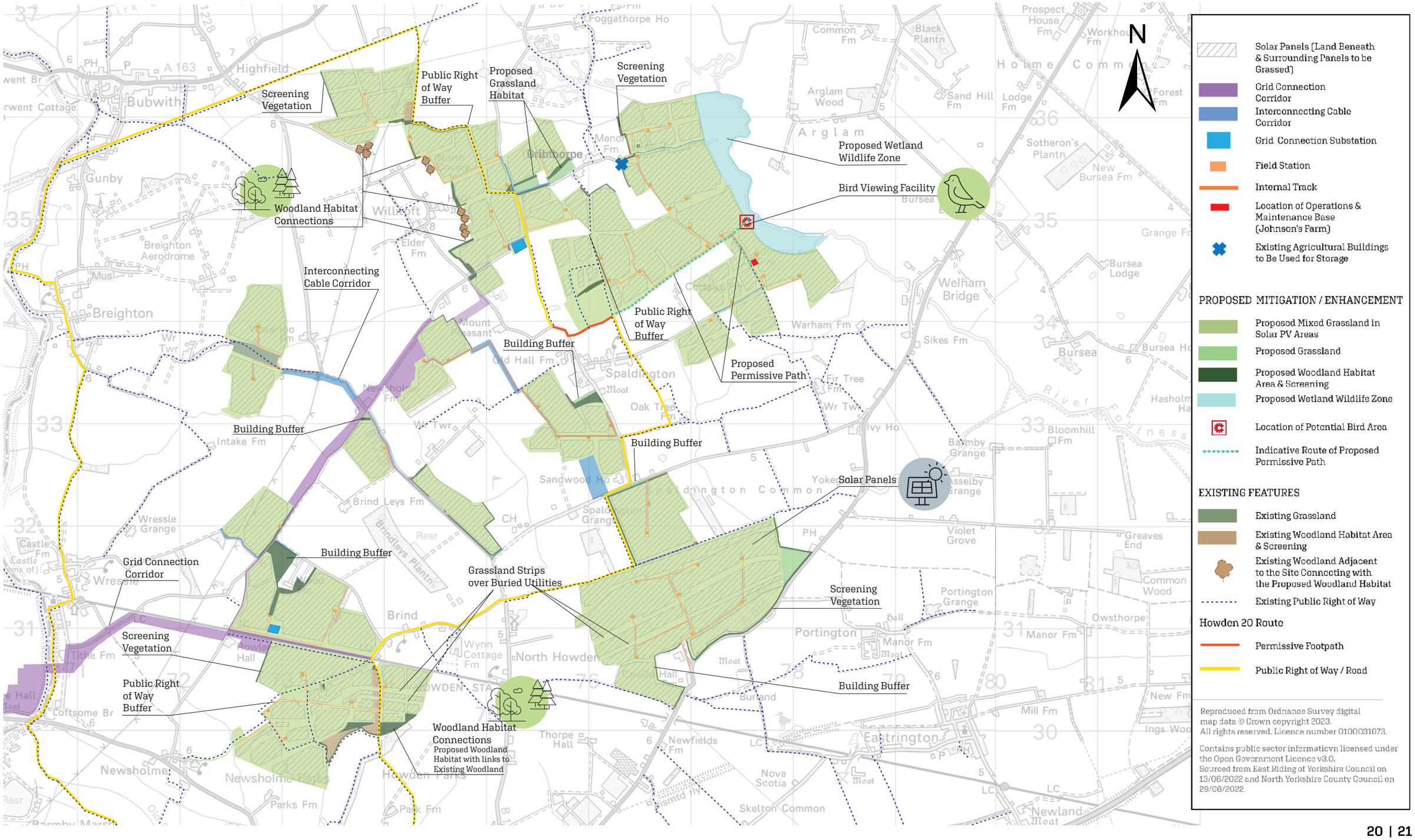
You said.	We did.
Solar panels will be too high, blocking views of the local landscape.	In our non-statutory consultation, we stated that panels could be up to 4.8 m in height as that was the height of the largest solar PV panel array in production at the time. Our design has evolved, and we have chosen to use tracker PV panels, which move to follow the sun through the day and therefore are more effective as they capture more rays. At maximum tilt, the top of the tracker panel will be 3.5 m high, and only reach this height for a short time each day (first thing in the morning and last thing in the evening). For the majority of the day, they will be lower than 3.5 m in height. At night, the panels are stored horizontally, at a height of approximately 2.3 m.
Proximity of the site to public rights of way and footpaths will cut off access, and ruin the views from the paths.	We have designed the solar farm so there will be a minimum buffer zone of at least 20 m between the centreline of the public rights of way and the boundary fencing where the panels are both sides of the public right of way, and 15 m where the panels are on one side. Any fencing installed along public rights of way will be a clear mesh, maintaining uninterrupted views. Our proposal includes the creation of new permissive paths which will increase access options, enhancing connectivity and maintaining views of the local landscape.
The Scheme is taking valuable agricultural land out of production.	Agricultural Land Classification (ALC) is a system used to grade the quality of land for agricultural farming, with grade 1 being the very best through to grade 5 being very poor agricultural land. The majority of the land in this area is grade 4 (poor quality), with a few smaller areas falling into grades 2 (very good quality), 3a (good quality) and 3b (moderate quality). Mapping by the Department for Environment, Food & Rural Affairs (Defra) shows the provisional land classification, however we have employed industry specialists to carry out soil sampling throughout the identified land and map the ALC grade distribution throughout the solar PV site more accurately. Based on the results, we have refined our proposals to avoid placing any 'hard-standing' or fixed structures on higher grade land where possible.
Wildlife will be unable to roam freely, with habitats and breeding grounds lost.	We have designed the solar farm to protect habitats and minimise the environmental impact. Specifically, our design introduces three types of wildlife habitats: • Grassland habitat zones – sensitive planting of native grasses will enhance existing grasslands, protecting and enhancing habitats for animals, insects and birds. • Woodland habitat zones – sensitive planting of native trees and shrubs will be used to complement existing woodland, enhance existing hedgerows and provide screening. • A zone in the eastern part of the proposed site adjacent to the River Foulness will be designated as a new Wetland Wildlife Zone. There will be no solar panels on this area, rather it will be planted to create a wetland habitat for ground nesting birds and other species. New permissive paths up to the wetland wildlife zone will allow walkers to observe birds at a distance without disturbing their nesting, and subject to DCO consent a dedicated bird watching spot will be set up.
The Scheme will increase flood risk in the area.	Just over half of the land identified will be used for the solar PV areas and associated equipment. This provides us with flexibility in our design to address any flood risk that we might encounter during construction. The presence of the solar farm will not increase the local flood risk. Drainage will be designed to mimic the natural drainage conditions within the site and thereby avoid impact on the flow in receiving surface water features.

Other topics raised included the condition of local roads relative to the anticipated number of vehicle deliveries needed to construct the solar farm; the potential impact on footpaths; health and safety concerns; comments on the suggestion of using sheep to manage the grass under the panels; comments on potential noise impacts; and suggestions of how to improve the consultation process. All comments provided in the non-statutory consultation responses were taken into consideration in the process of updating our design further.

We are committed to being a good neighbour, therefore our proposed design aims to minimise the impact on the landscape, wildlife, the local community and all who enjoy this beautiful corner of East Yorkshire.

INDICATIVE MASTERPLAN.

This is an indicative concept masterplan for the purposes of the statutory consultation. This concept masterplan is subject to change based on environmental assessment, design development and feedback received.



HOW DOES THE DCO PROCESS WORK?

East Yorkshire Solar Farm will generate approximately 400 megawatts (MW) of electricity. As the electricity generating capacity is greater than 50 MW, it is classed as a Nationally Significant Infrastructure Project (NSIP). NSIPs are large infrastructure developments which are considered important to the entire country and require consent by way of a Development Consent Order (DCO) for them to be built.

Unlike local planning applications, which are considered by local authorities, DCO applications are made to the Secretary of State and handled by the Planning Inspectorate. In the case of a solar farm, the final decision on a DCO application is made by the Secretary of State for Energy Security and Net Zero. The post-submission timeline is shown to the right.

Local Authorities are among the many bodies invited to consult on the DCO application, along with environmental and heritage bodies and most importantly the local community and stakeholders. Feedback from this consultation will be documented in the Consultation Report, which will be submitted with our DCO application.

We plan to submit our DCO application later in 2023, following consideration of all responses to this consultation. The timeline for this is outlined to the right.

If our DCO application is accepted, you can register directly with the Planning Inspectorate to become an Interested Party. During examination the Planning Inspectorate will keep Interested Parties informed about the progress of our application, and how they can contribute to the DCO process.

More information on this is available at the Planning Inspectorate's website at: **www.infrastructure.planninginspectorate.gov.uk/application-process/the-process/**

28 Days

ACCEPTANCE

Planning Inspectorate appointed on behalf of the Secretary of State to consider whether or not the application meets the standards required to be accepted for examination.

3-4 Months (variable)

PRE-EXAMINATION

The public will be able to register to become an Interested Party by making a Relevant Representation. The Planning Inspectorate will also appoint an Examining Authority who will invite all Interested Parties to attend a Preliminary Meeting.

6 Months

EXAMINATION

The Examining Authority has up to six months to carry out the examination. During this stage Interested Parties who have registered are invited to provide more details of their views in writing or as part of public hearings that may be held.

3 Months

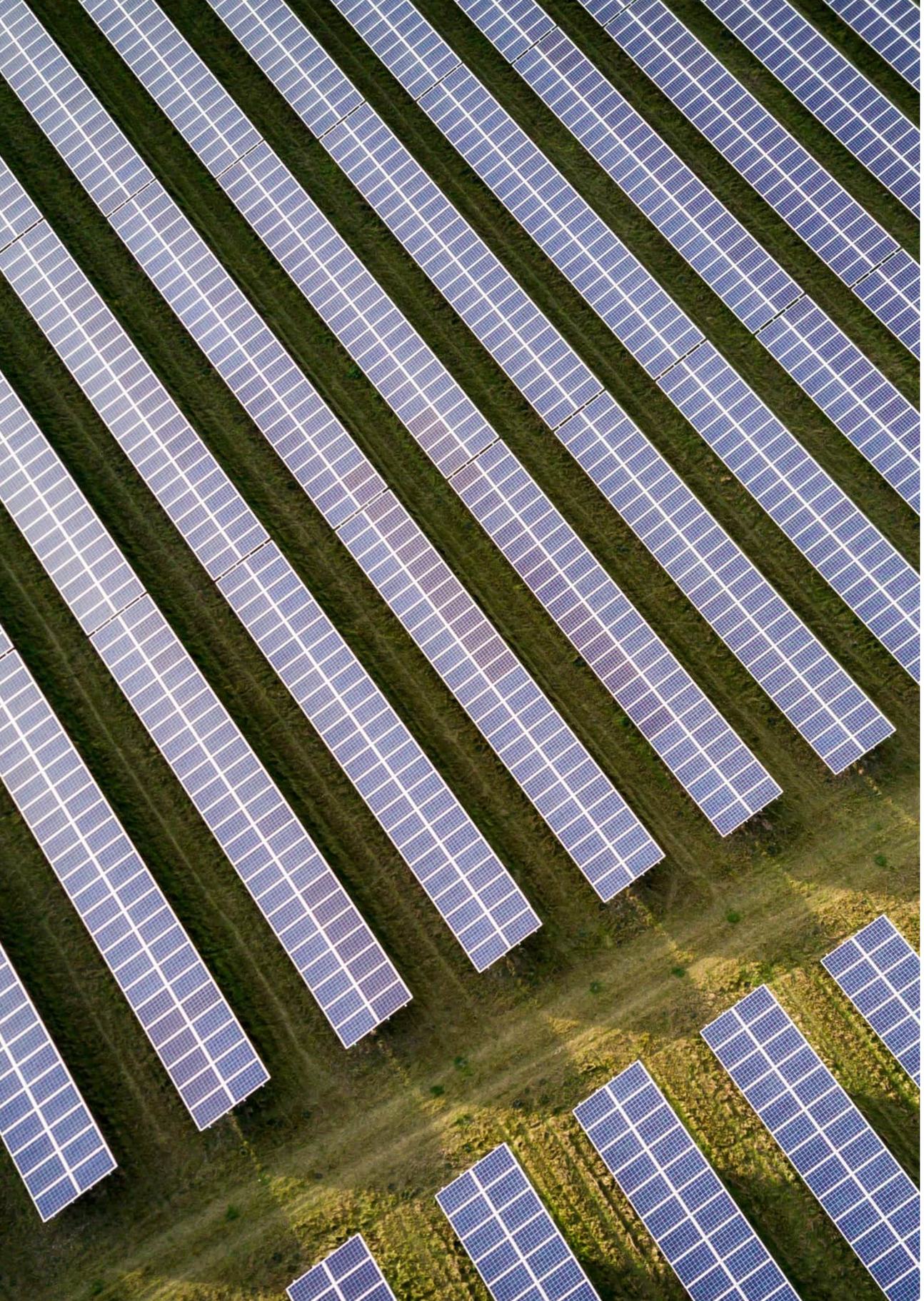
RECOMMENDATION

Examining Authority to prepare recommendation to the Secretary of State.

3 Months

DECISION

Secretary of State to decide if DCO application is granted or refused.



WHAT COMPONENTS ARE USED IN A SOLAR FARM?

SOLAR PHOTOVOLTAIC (PV) PANELS

Solar PV panels are made up of multiple PV cells which convert sunlight into Direct Current (DC) electricity. The PV panels are mounted on motorised tables (trackers) that will move through the day from east to west in order to catch the most sunlight at all points of the day. DC is the kind of electricity found in batteries or trains on the London Underground.

INVERTERS

Inverters are used to convert the DC electricity generated from the solar PV panels into Alternating Current (AC) – the type of electricity we use in our homes. AC is used for the transmission and distribution networks across the UK.

TRANSFORMERS

Transformers change the voltage of the electricity generated which makes it more efficient to move over longer distances. The transformers ensure that the voltage of the energy generated is matched to the voltage of the national grid for transmission and distribution around the UK.

SWITCHGEAR

The switchgear allows the site to connect to or be isolated from the grid during routine maintenance.

BATTERIES

Battery Energy Storage Systems (BESS) are an industry standard system for storing electricity generated by the solar farm. Stored electricity can be released to meet peak energy demands. BESS units are typically stored in shipping container-style units.

FIELD STATIONS

Equipment such as inverters, transformers, switchgear and batteries, typically housed in standard shipping containers, will be grouped together within areas called field stations.

GRID CONNECTION SUBSTATIONS

Substations are used to safely collect, transform and transmit the energy exported from the site to the National Grid.

WHY THIS LOCATION?

SUNLIGHT AND TOPOGRAPHY

East Yorkshire is an optimal area within the UK to locate large scale solar development due to its good levels of sunlight and large areas of flat open land. East Yorkshire enjoys a climate with many days that are cool and clear, making it ideal for a solar farm that will make efficient use of that sunlight for generating electricity. Large scale solar development is ideal on flat land as this allows for easy construction and helps to reduce visual intrusion. Flat land also limits the shading between solar PV panels.

AVAILABLE GRID CONNECTION

Yorkshire's history of coal power stations, such as those at Drax, Eggborough and Ferrybridge, means that the National Grid is well developed in the area and has capacity for new energy generation facilities. By connecting the solar farm to the National Grid substation at Drax, the electricity generated and stored at our site will be available and can be distributed wherever it is needed to satisfy demand.

LAND AVAILABILITY

Local landowners have expressed an interest in leasing sections of their land to Boom Power for use in the solar farm.

LAND QUALITY

Most of the agricultural land within the East Riding of Yorkshire and the former District of Selby is classed as higher quality land known as best and most versatile (BMV). However, we have located the solar farm on land which is mostly (more than three-quarters) lower quality agricultural land known as non-BMV.

ACCESSIBILITY

Suitable access for heavy goods vehicles is preferred for construction of large-scale solar development. Construction personnel and large equipment will need to access the site. The area has good access to the major road network with the M62 to the south and a number of A-roads in close proximity.

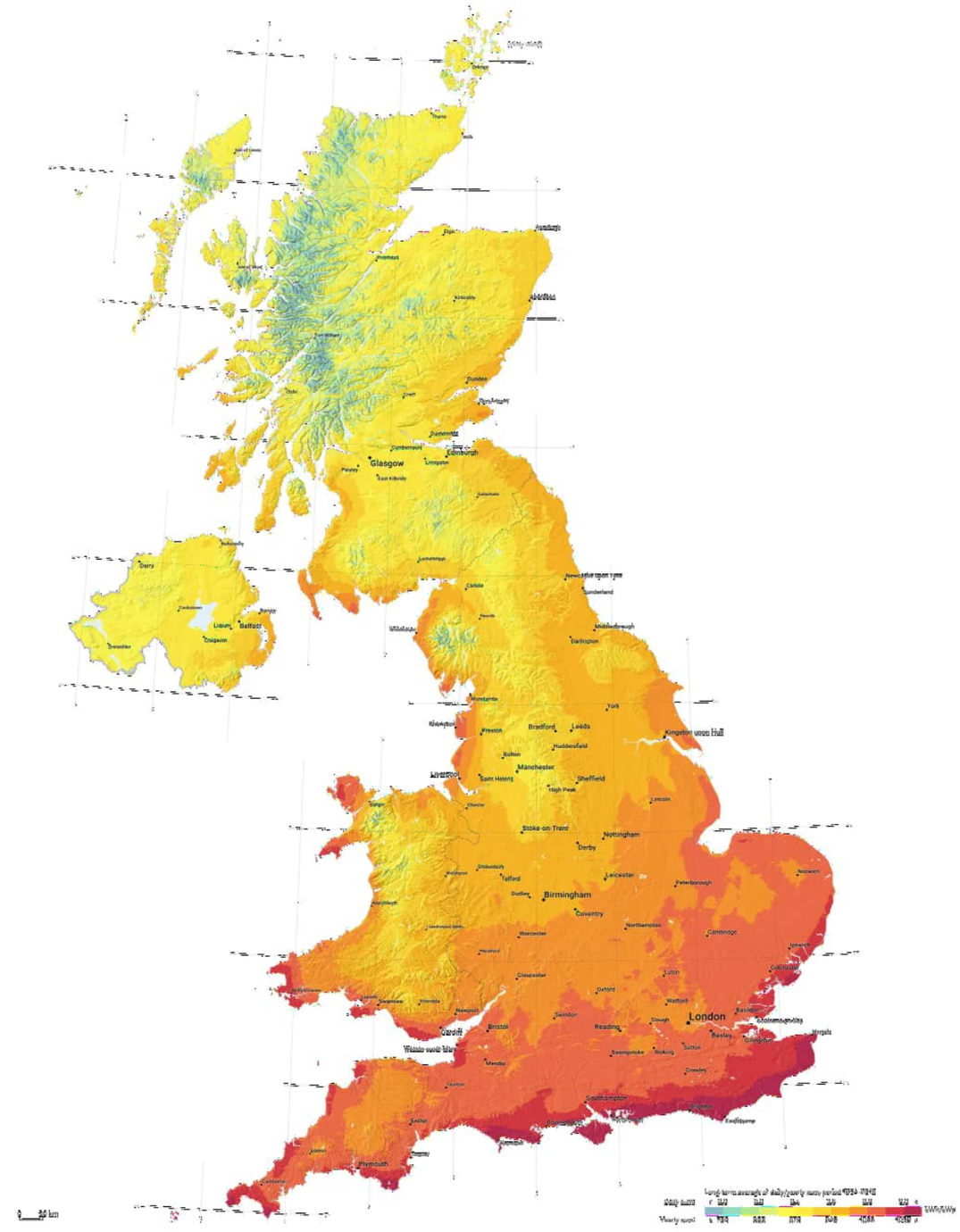
ENVIRONMENTAL AND LAND USE CONSIDERATIONS

The land selected for the solar PV areas avoids directly impacting nationally protected landscape, ecology and heritage areas such as scheduled monuments, Areas of Outstanding Natural Beauty or Sites of Special Scientific Interest.

CONTINUING AGRICULTURAL USE

We recognise that the solar farm will be located on agricultural land. We are exploring the option to keep this land in agricultural use by farming sheep in the fields beneath the panels. Sheep grazing on solar farms has been successful elsewhere in the UK and has been shown to have benefits for soil health and natural biodiversity. Sheep can move safely between and under the panels and can use them to rest in the shade or shelter from rain. The grass beneath solar panels also grows well enough to contain all the nutrients that the sheep need from grazing on it. We will use a number of grass seed varieties. This will grow rich and diverse grassland which will in turn support a wide variety of animal life. In areas where sheep farming is not possible, the grass will be mown.

Further explanation of the reasons for choosing this location are provided in Chapter 3 of the PEI Report Volume 2: Alternatives and Design Evolution.

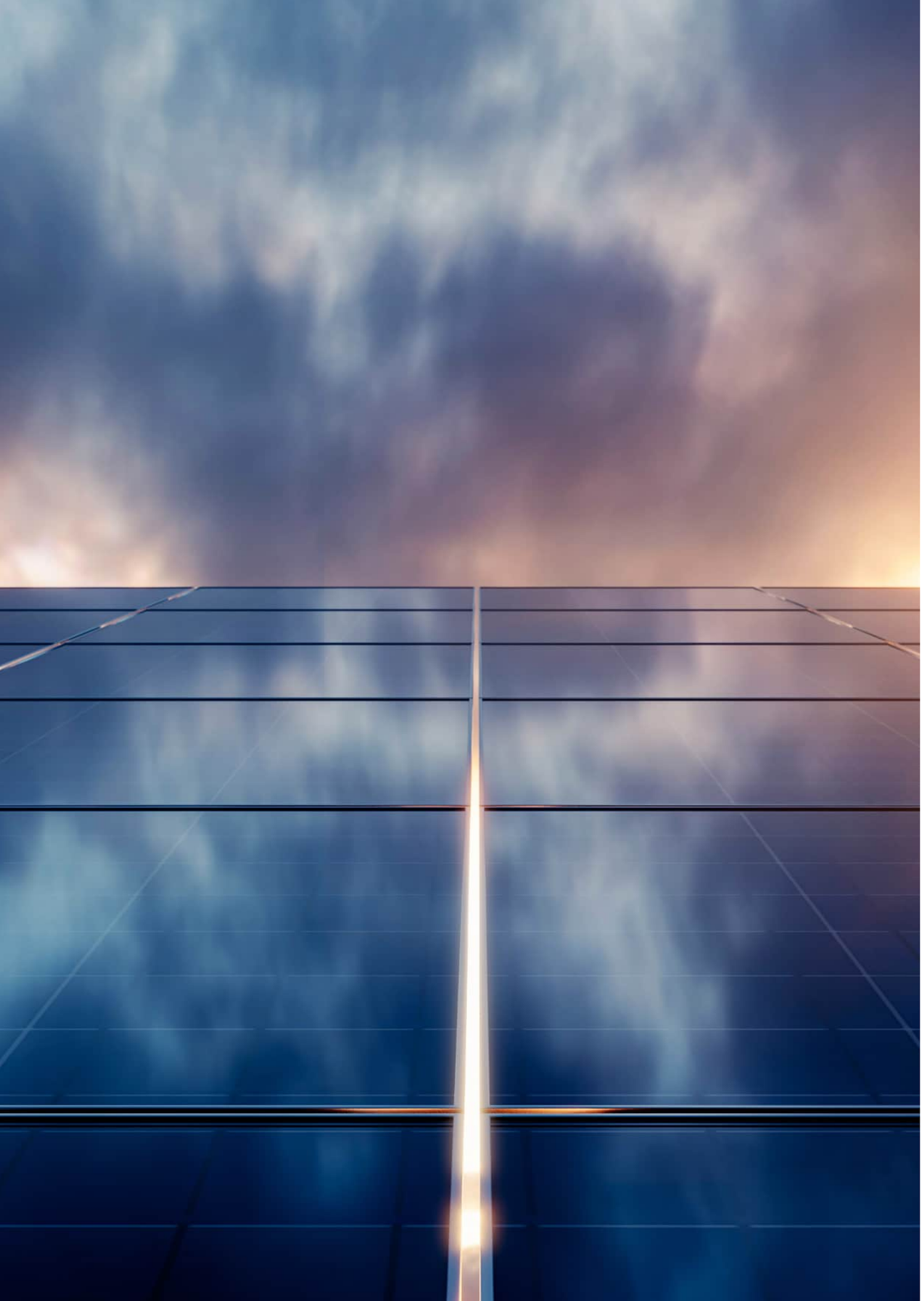


PHOTOVOLTAIC POWER POTENTIAL

UNITED KINGDOM

This solar resource map of the United Kingdom provides a summary of estimated solar photovoltaic (PV) power generation potential. It represents the average daily / yearly totals of electricity production from a 1 kW-peak grid-connected solar PV power plant, calculated for a period of 25 years (1994-2018).

Reference: The World Bank Group using data from the Global Solar Atlas (GSA).



CONSTRUCTION AND OPERATION.

HOW LONG WILL THE SOLAR FARM TAKE TO BUILD?

We anticipate that construction of the solar farm will take approximately 24 months, although this could take longer due to unanticipated circumstances. The construction will be phased across the site, so we will not work in all areas at once during this period.

HOW WILL THE SOLAR FARM BE BUILT?

Most of the construction work will consist of putting up a simple galvanised steel frame to which the PV panels will be attached. A site will be first fenced off, then galvanised steel piles will be driven into the ground to create a foundation. The galvanised steel frame will be attached to the piles, and the PV panels will be attached to the frame. Inverters could then be mounted to the frame to create the electrical connection to the cables, or they could be centrally located within the field stations.

Separately to the installation of the PV panels, we will install the cable, field stations and substations. Once these are all connected, electricity will be generated by the PV panels and will flow into the National Grid.

WHAT ONGOING MAINTENANCE WILL BE NEEDED?

Once constructed, the operational phase will begin. In general, this will involve a monthly visit to inspect and monitor fences and the operational equipment. The solar farm will be monitored remotely, with anything unusual investigated. CCTV will be mounted on perimeter fences, which will face along the fence and inwards only. This will also be monitored remotely, with maintenance visits to replace any components that need replacing where necessary.

The dirt and dust that builds up on the panels of the solar farm is mostly self-cleaning, with rain and the motion of the tilting panels. Where additional cleaning is needed this will be done with a large water brush, similar to the kind found in many car washes.

HOW WILL EVERYTHING BE TRANSPORTED DURING CONSTRUCTION?

Heavy Goods Vehicles (HGVs) will bring most construction materials to the construction compound. There will be a maximum of three Abnormal Indivisible Loads (AILs) for delivery of the substation transformers. From the compound, tractors and trailers will be used to cross fields rather than roads to distribute these materials to their specific site.

Different stages of construction will need different numbers of HGV deliveries. The routes to be used and timings for deliveries and staff will be set out in a Construction Traffic Management Plan. The Framework Construction Traffic Management Plan will be submitted with the DCO application.

A road condition survey will be carried out on local roads identified ahead of construction starting. Where necessary, these roads will be repaired to the same or better standard once the solar farm is complete. The survey will also show where passing places are needed so that existing traffic can continue to move freely. Where new passing places are installed, they will be left in place for the long-term benefit of the community.

NET ZERO BY 2050.

ENVIRONMENTAL IMPACTS AND MITIGATION.

Environmental Impact Assessment (EIA) is a process to systematically analyse the potential environmental effects of the Scheme and develop effective mitigation measures. Our preliminary findings and mitigation proposals are detailed in the Preliminary Environmental Information (PEI) Report which forms part of this statutory consultation. Key topics where we identified the potential for significant effects, and mitigation measures are shown in the table below. You can find more information on the environmental impacts and proposed mitigations in the PEI Report Non-Technical Summary or the specific chapters of the PEI Report.

Topic.	**Proposed measures to reduce effects.**
Climate change Chapter 6: Climate Change, PEI Report Volume 2	The overall impact of the solar farm is expected to be significantly beneficial as it will produce low-carbon electricity, helping the UK achieve its target of net zero by 2050 by removing dependency on gas fired power stations. Greenhouse gas emissions resulting from constructing the solar farm due to material mining, energy and fuel use, and transport, are small compared to the benefits the solar farm will bring. Future climate conditions will be taken into account when developing the detailed design of the solar farm.
Ecology Chapter 8: Ecology, PEI Report Volume 2	For the past year we have been and are continuing to carry out field surveys and desktop studies to understand the local ecology and design the solar farm with the aim to protect and enhance biodiversity. Protective buffers around the natural features like hedgerows, individual trees, woodland, ponds, and watercourses have been incorporated into the site design. We propose to create a Wetland Wildlife Zone adjacent to the River Foulness to provide an area of undisturbed habitat, particularly for birds. To avoid impacts, horizontal directional drilling will be used to lay the cables under significant watercourses (currently identified as the River Ouse, River Derwent, and Featherbed Drain). Any disturbance of protected species and off-site biodiversity will be managed and prevented through various measures included within a Landscape and Ecology Management Plan, as well as through environmental management plans for each stage of the solar farm's life (construction, operation and decommissioning). Due to the combination of factors such as converting the land from arable agriculture into grassland under the solar panels, enhancement planting and setting aside buffers and Wetland Wildlife Zone, the solar farm will result in a biodiversity net gain which will likely be greater than the statutory minimum of 10%. Other solar NSIPs have achieved over 70% biodiversity net gain, for example.

Topic.	Proposed measures to reduce effects.
Landscape and views Chapter 10: Landscape and Visual Amenity, PEI Report Volume 2	One of the goals of the solar farm design is to sympathetically integrate it into the local landscape. Additional planting will complement the existing hedgerows and trees to screen the PV panels and electrical equipment from view. Buffers have been set aside along the public rights of way and areas where it is important to preserve the sense of the openness of the landscape. During the construction and the first few years of operation there will be significant effects on visual amenity at several viewpoints, until the proposed planting and screening measures are fully established. Glint and glare will be minimised by using anti-reflective coating on the PV panels. Together with the screening planting glint and glare impacts are unlikely.
Agricultural land Chapter 15: Soils and Agricultural Land, PEI Report Volume 2	The site for the solar farm has been selected and designed to minimise the impacts on BMV agricultural land; and research and field surveys confirm that the majority of the land is non-BMV. The soil beneath the solar panels does not need to be lifted to install the panels so the soil profile will not be disturbed. The physical footprint of the solar farm components which require foundations or hardstanding, such as field stations, grid connection substations and access tracks, makes up a small proportion of the solar farm area, which means the soil disturbance will be minimal. During operation the land under the PV panels across the majority of the solar farm will be available for agriculture in the form of sheep grazing. The change from arable agriculture to grassland is temporary as the land can be returned to arable farming upon decommissioning of the solar farm. The temporary shift from arable to grassland is predicted to result in positive changes to soil structure and soil carbon content. The change of agricultural land into wildlife habitat is likely to lead to significant benefits to ecology. The land within cable corridors will be reinstated after construction and will return to its original condition and use.
Flood risk Chapter 9: Flood Risk, Drainage and Water Environment, PEI Report Volume 2	The design of the solar farm will take account of the flood risk in the area. No solar farm infrastructure will be placed in the areas of highest flood risk, and the heights of PV panels and equipment foundations will be enough to avoid them being affected by flooding. The solar farm itself will not alter the drainage and will not worsen the flood risk in the area.

Topic.	Proposed measures to reduce effects.
Traffic, access to open space and active travel Chapter 13: Transport and Access, PEI Report Volume 2	The main impact on traffic and transport is likely to be from staff vehicles and HGVs during construction. To address this, the routes to be used and timings for deliveries and staff will be defined in a Construction Traffic Management Plan (CTMP) before construction begins, and this will be a requirement for construction staff. Minibus services will be set up to transport staff to the site helping to reduce vehicle trips on the surrounding highway network. The public right of way (PRoW) network will remain open during construction. Permissive paths will further enhance the current PRoW network during the operation of the solar farm. As the operational solar farm requires little maintenance there will be limited traffic during operation. Permissive paths will further enhance the current PRoW network.
Noise and vibration Chapter 11: Noise and Vibration, PEI Report Volume 2	Measures like careful positioning of noisy machinery away from residential properties, regular noise monitoring, notifying local residents of any noisy works and adhering to the agreed working hours will help reduce the noise effects on the local residents during construction. Noise modelling results suggest that the operational solar farm will not significantly change the noise baseline for the local residential receptors. This is achieved by locating the electrical equipment such as grid connection substations and field stations away from receptors.
Cultural heritage Chapter 7: Cultural Heritage, PEI Report Volume 2	The location and the layout of the solar farm avoids significant impacts on designated cultural heritage assets and their settings, such as scheduled monuments, listed buildings and conservation areas, and on non-designated assets, such as historic buildings and landscape, and archaeological remains. Archaeological surveys are ongoing. The results of field surveys will identify the location of buried archaeological remains and allow the solar farm to be designed around them. Where avoiding archaeology is not possible, appropriate archaeological mitigation, such as excavation, will be undertaken to ensure remains are fully understood and recorded.

Further information on all the environmental impacts and proposed mitigations can be found in the Preliminary Environmental Information (PEI) Report available from our website at **www.boom-power.co.uk/east-yorkshire**

Our EIA has identified no significant negative impacts once mitigation has been applied in the following areas:

- Air quality
- Climate change
- Cultural heritage
- Flood risk, drainage and water environment
- Socio-economics and land use
- Human health
- Glint and glare
- Ground conditions
- Major accidents or disasters
- Telecommunications, television reception and utilities
- Materials and waste
- Electromagnetic fields

WHAT WILL HAPPEN IN THE FUTURE?

At the end of the solar farm's life, equipment will be removed, and the field can return to arable agricultural use. The PV panels will be recycled, and the piles pulled out of the ground, returning the land to the same state as it is currently. The land will retain greenfield status which will protect it from other forms of development.

None of us know what the need for electricity will be in the future, or how much of this will need to come from solar or other low-carbon sources. It is also impossible to say if the same planning processes will be in place. However, under the current planning legislation, if anyone wants to build a new solar farm on the same land, a new application will need to be submitted.

A Decommissioning Environmental Management Plan (DEMP) will be created before the decommissioning process begins. East Yorkshire Solar Farm is required to place money into a Decommissioning Bond. This is a financial product that will guarantee the funds for removal of the solar farm at the end of its life. We estimate that the decommissioning period will take between 12 and 24 months. On decommissioning, we are committed to recycling everything than can be recycled. At the current time, we estimate this to be at least 95% of all the material used in the solar farm.

BENEFITS.

We are exploring an option to use the land under the solar panels for sheep grazing and have designed the solar farm to make this possible. Sheep grazing can help to maintain the land in agricultural use and help to diversify farming in the area adding much needed security for farmers during challenging economic times.

Compared to arable farming, solar farms can result in a biodiversity net gain by providing an overall increase in natural habitat and ecological features. Whilst there is an initial change to the countryside, the operational solar farm will fast become a haven for wildlife. In addition to woodland and species diverse grassland we are proposing a Wetland Wildlife Zone with a bird viewing facility.

The Scheme proposes two permissive paths reinforcing the existing public rights of way in the local area. These paths, which may also include bridleway, will increase local accessibility and connectivity and provide circular routes for local walkers and horse riders to use. Existing rights of way within the solar farm will be retained with large buffers to separate users from solar infrastructure.

The construction of the solar farm will present opportunities for local employment and will indirectly support local businesses such as shops, petrol stations and hotels. We want local people to share in the benefits that the solar farm can bring. The electricity generated will go directly into the National Grid, so cannot be used to directly reduce bills for local people. However, a proportion of the expected money made by the solar farm will be invested into the local community. We are exploring the use of a community benefit fund, and our aim would be to work with local organisations that will best spend the money to support the community. You can help identify potential recipients for this by letting us know of local causes and organisations as part of your response to this consultation.

HAVE YOUR SAY.

You can find all the published information on the Scheme, including larger documents like the Preliminary Environmental Information (PEI) Report and Non-Technical Summary of the PEI Report on our website at **www.boom-power.co.uk/east-yorkshire**

All the documents relating to the Scheme are available for inspection at the following locations during their regular opening hours.

- Howden Library and Customer Service Centre
- Selby Library
- Bubwith Leisure and Sports Centre
- Market Weighton Wicstun Centre
- The East Yorkshire Mobile Library

The addresses and opening hours of these can be found at the start of this brochure in 'How you can find out more' on page 9. These documents will be available for the duration of the consultation.

SHARE YOUR VIEWS

Your opinion matters, and every response to this consultation will be considered, evaluated, and used to develop our final design. The consultation report will be published on our website and submitted as part of our application for a Development Consent Order later in the year.

You can share your thoughts by completing the form at the end of this brochure. You can post it to 'FREEPOST EAST YORKSHIRE SOLAR FARM' or bring it to one of our consultation events, where our project team will collect your feedback.

You can also complete the form online or email your views to us by using the contact details below.

The consultation closes at **11:59pm on Tuesday 20 June 2023**. All responses received before this will be considered and summarised in our consultation report. Responses received after this time may not be considered.

HOW TO CONTACT US

If you have any questions or would like to request copies of information (including in accessible formats if needed) please contact us using the below details. Please note that phone lines will be open between 9am and 5pm Monday to Friday.

01964 782219
BOOM-POWER.CO.UK/EAST-YORKSHIRE
EASTYORKSHIRESOLARFARM@BOOM-POWER.CO.UK


FSC

BOOM-POWER.CO.UK

BOOM
POWER

K.2 Statutory Consultation feedback form

FEEDBACK FORM

EAST YORKSHIRE SOLAR FARM | MAY 2023

East Yorkshire Solar Farm Limited (a Boom Power company) is proposing a new solar farm with energy storage situated between the villages of Gribthorpe, Spaldington, Wressle and the town of Howden. The solar farm will connect to National Grid's substation at Drax and generate approximately 400 megawatts (MW) of low-carbon electricity — enough to power around 100,000 homes.

We are holding a public statutory consultation for East Yorkshire Solar Farm to explain our proposal. The consultation is running for six weeks, from **9 May to 20 June 2023.**

This statutory consultation is being carried out in line with the requirements of the Planning Act 2008. As the solar farm would produce over 50 MW of electricity, the Scheme is classed as a Nationally Significant Infrastructure Project, and therefore requires planning consent by way of a Development Consent Order (DCO).

You can respond to the consultation using any of the following methods:

- **Post:** Complete this form and post to us at FREEPOST EAST YORKSHIRE SOLAR FARM
- **Email:** Email your completed form to us at eastyorkshiresolarfarm@boom-power.co.uk
- **Online:** Complete this form on our website by scanning the below QR code on your smart device. Click on the link to complete the form. Alternatively, visit www.boom-power.co.uk/east-yorkshire

We recommend you read the consultation brochure before filling out this form. You can view and download copies of the following documents from our website:

- Consultation brochure
- Frequently Asked Questions
- Site plans
- Statement of Community Consultation
- Preliminary Environmental Information Report
- Non-Technical Summary of the Preliminary Environmental Information Report

The deadline for responses is **23:59 on 20 June 2023.** All responses received before the deadline will be considered. Responses received after this time may not be considered.

BOOM POWER

ABOUT YOU.

Information requested in this section is to understand your connection to the scheme. Information provided will be held securely and used only for the purposes of this consultation. For more information on how we handle your data, please see our Privacy Notice at: www.boom-power.co.uk/privacy-policy/

Title: Name:

Address: Postcode:

Email: Telephone:

2. What is your interest in the Scheme?

- Local resident
- Local elected representative
- Local business owner
- Landowner
- Regular visitor to the area
- Interested in solar power / renewable energy
- Statutory organisation representative
- Local interest group
- Other (please specify):

3. Are you responding on behalf of an organisation or group and if so, please share the name of the organisation or group:

Yes No

Name of group or organisation:

4. Are you happy for us to contact you about your response if required?

Yes No

OUR PROPOSAL.

5. Do you agree with the layout in our proposed masterplan for East Yorkshire Solar Farm?

Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Please provide any further comments and suggestions you may have on the masterplan.

6. Do you agree with our proposed approach to connect East Yorkshire Solar Farm with the National Grid substation at Drax, including the cable route and use of underground cabling?

Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Please provide any further comments and suggestions you may have on the cable route.

7. Based on our updated proposal shared in this consultation, what are your views on East Yorkshire Solar Farm?

- I am in favour of the proposal
- I am undecided
- I oppose the proposal
- I am in favour of a solar farm but want further information before making a decision

MITIGATIONS, ENHANCEMENTS AND COMMUNITY BENEFIT.

We are committed to minimising the environmental impact of the scheme and have updated our proposals to include mitigations and enhancements across East Yorkshire Solar Farm. Based on feedback to our non-statutory consultation, we have updated our proposals to address concerns raised in the feedback and mitigate potential impacts. We describe these mitigations measure in our brochure (page 16-19).

8. Ecology: Based on the information provided do you agree with our proposed approach to ecological mitigation?

Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Please provide any further comments and suggestions you may have on this topic.

9. Landscape and views: Based on the information provided do you agree with our proposed approach to landscape mitigation?

Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Please provide any further comments and suggestions you may have on this topic.

10. Traffic: Based on the information provided do you agree with our proposed approach to traffic mitigation?

Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Please provide any further comments and suggestions you may have on this topic.

11. Noise and vibration: Based on the information provided do you agree with our proposed approach to noise and vibration mitigation?

Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Please provide any further comments and suggestions you may have on this topic.

12. Cultural heritage: Based on the information provided do you agree with our proposed approach to cultural heritage mitigation?

Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Please provide any further comments and suggestions you may have on this topic.

13. Flood risk: Based on the information provided do you agree with our proposed approach to flood risk mitigation?

Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Please provide any further comments and suggestions you may have on this topic.

14. Do you have any comments on the information presented in our Preliminary Environmental Information Report? Please specify any environmental topic areas you are commenting on.

- Climate change
- Social-economics and land use
- Health
- Other (please specify):
- Soils and agricultural land
- Air quality
- Waste

15. Community benefit fund:

As part of this scheme, we are exploring the use of a community benefit fund, and our aim is be to work with organisations that will spend the money to support the projects to benefit the local community. We would like to understand what causes are important to you. Please indicate which causes you feel the benefit fund should support. (Please tick as many boxes as needed).

- Environment
- Community healthcare
- Wildlife
- Combating climate change
- Education
- Other (please specify):

16. Further comments:

Please share any further comments you have on East Yorkshire Solar Farm.

17. How did you find out about our consultation?

- Received a letter / brochure
- Saw it advertised in the media
- Other (please specify):
- Via a local community group
- Word of mouth

18. Have you attended any of our consultation events?

- Yes
- No

19. How informative did you find our consultation materials?

- Very informative
- Quite informative
- Not informative
- Did not use

THANK YOU FOR YOUR FEEDBACK.

Privacy Notice: Personal details will be held securely and only used for purposes in connection with the statutory consultation, the DCO process and further development of the Scheme. Outside of these purposes, the Applicant may be required to provide personal details if specifically requested as part of a Freedom of Information Act request or if PINS requests original responses. Otherwise, personal details will not be disclosed to any third parties. For further details please see our Privacy Notice at: www.boom-power.co.uk/privacy-policy/

A hard copy of the privacy notice can be requested by contacting us on 01964 782219 or by email on eastyorkshiresolarfarm@boom-power.co.uk

K.3 Frequently Asked Questions (FAQ) document

Frequently Asked Questions (FAQs)

Overview

Why is East Yorkshire Solar Farm needed?

The transition to a low carbon energy generation is necessary to reduce greenhouse gas emissions and mitigate the effects of climate change. The UK is committed to achieve net zero carbon emissions by 2050. The UK government has also committed in their energy strategy to an ambition of a fivefold increase in solar generation by 2035, putting the target at 70 GW. The government states that this would be enough to power around 20 million homes and has committed to maximising the potential for both ground mounted and rooftop solar to achieve this.

More renewable energy is needed to fast-track the transition away from fossil fuel electricity generation, with onshore and offshore wind and solar all necessary to help us generate the power we need.
With an anticipated generation capacity of 400 MW, East Yorkshire Solar Farm would make a significant contribution towards achieving net zero; providing utility-scale clean energy to National Grid's electricity transmission system to power more than 100,000 homes.

Does the UK risk being covered with solar farms everywhere?

Solar farms in the UK currently account for 0.08% of total land use.To meet the government's net zero target, the Climate Change Committee estimates that we will need between 75 and 90 gigawatts (GW) of solar generation capacity by 2050. This is an increase of approximately 55 – 75 GW. Analysis indicates this would mean solar farms would at most account for approximately 0.4-0.6% of UK land, with the increase in land used for solar being a smaller area than what is currently taken up by airports. The total estimate land use for solar needed to achieve the government's net zero goals equates to approximately 0.5% of the land currently in agricultural production or roughly half the space taken up by golf courses.

Who are Boom Power?

Boom Power is a British company. All our solar farms are funded using private capital, with no government subsidies or other public money being used, and East Yorkshire Solar Farm is no different. Our team have a long track record of building, developing and operating solar farms, particularly in the UK and in Australia. To find out more about our past projects, visit our website at: https://www.boom-power.co.uk/

Community

Why have we chosen this location for East Yorkshire Solar Farm?

The land required for the solar farm has been carefully selected. There are many factors which make the location we have chosen ideal for the East Yorkshire Solar Farm. These include:

- Sunlight and topography. East Yorkshire is an optimal area within the UK to locate large scale solar development due to its good levels of sunlight and large areas of flat open land. East Yorkshire enjoys a climate with many days that are cool and clear, making it ideal for a solar farm that will make efficient use of that sunlight for generating electricity. Large scale solar development is ideal on flat land as this allows for easy construction and helps to reduce visual intrusion as there are very few elevated areas overlooking the solar farm from a distance. At nearer distances, existing hedgerows and blocks of woodland screen the development which is relatively low level. Flat land also limits the shading between solar PV panels.
- Available grid connection. Yorkshire's history of coal power stations, such as those at Drax, Eggborough and Ferrybridge, means that the National Grid is well developed in the area and has capacity for new energy generation facilities. By connecting the solar farm to the National Grid substation at Drax, the electricity generated and stored at our site will be available and can be distributed wherever it is needed to satisfy demand.
- Land quality. Most of the agricultural land within the East Riding of Yorkshire and the former district of Selby District is classed as higher quality land known as best and most versatile (BMV). However, we have located the solar farm on land which is mostly (more than three-quarters) lower quality agricultural land known as non-BMV.
- Accessibility. Suitable access for heavy goods vehicles is preferred for construction of large-scale solar development. Construction personnel and large equipment will need to access the site. The area has good access to the major road network with the M62 to the south and a number of A-roads in close proximity.
- Land availability. Local landowners have expressed an interest in leasing sections of their land to Boom Power for use in the solar farm.
- Environmental and land use considerations. The land selected for the solar PV areas avoids directly impacting nationally protected landscape, ecology and heritage areas such as scheduled monuments, Areas of Outstanding Natural Beauty or Sites of Special Scientific Interest.

How will the biodiversity net gain be calculated/ worked out?

The Environment Bill, passed in 2021, recommends any scheme which requires a Development Consent Order (DCO) should improve the biodiversity of the land. To achieve this, there will be a baseline biodiversity assessment carried out on the land beforehand. Information like the current land use and the area and composition of the hedgerows will be used to calculate the current biodiversity. The target uplift in biodiversity will be achieved by a combination of carefully selected measures that may include wildflower and wild grassland strips, and improvements to hedgerows. Other species-specific enhancement measures such as bird boxes and bat boxes will be installed to provide additional roosting/nesting opportunities for wildlife.

BOOM Power is committed to delivering biodiversity net gain across East Yorkshire Solar Farm and are currently investigating how best to maximise this enhancement. For example, BOOM Power's recent solar farms have achieved approximately 70% biodiversity net gain.

Will there be more traffic in the area because of the Solar Farm?

During construction, there is likely to be more traffic due to HGVs bringing materials to and from the site. This will be limited to the construction phase. For this phase, the most suitable routes to and from site will be chosen to reduce impact on the traffic in the surrounding area. If road infrastructure improvements are needed these will be factored into the Scheme and included in the planning at an early stage.

During operation, traffic to and from the site will be limited to maintenance staff transport and maintenance deliveries which will be low in numbers.

What is the land used for now?

The majority of the land identified for the development is currently in agricultural production and is mainly used for growing wheat and oilseed rape, and to a smaller extent barley, silage grass and short rotation coppice. Several fields proposed for the solar farm are currently fallow, under stewardship scheme or used as pastures. It is not accurate to say that Scheme will remove valuable land from agricultural production. Due to the poor quality of the land and high levels of rainfall, most of the cereal grown in the area is unsuitable for food production. In 2020 only 42% of wheat produced in the UK was used for food production. The main uses for UK wheat are animal feed and fuel production (mainly bioethanol).

Will it damage the land?

The Scheme is being designed to have as minimal impact on the land and landscape as is reasonably possible. The land within the Grid Connection and Interconnecting Cable Corridors will be returned to its original condition and land use after construction, and the presence of the cables will not limit the agricultural operations which can be undertaken, for example ploughing. The above ground infrastructure within the Solar PV Site is designed to be removed after the planned lifetime and the land returned to its original state and land use. However, depending upon the requirements of National Grid, the two Grid Connection Substations may remain in place longer. Some of the land within the Solar PV Site is to be used for habitat creation and landscaping (for instance woodland planting and the Wetland Wildlife Zone), although these areas may be returned to agricultural use after the planned lifetime, it is possible that they may be considered too ecologically valuable for that to happen. The loss of agricultural land is balanced by the significant benefits to ecology as a result of the change of use.

The conversion of arable land to grassland during the lifetime of the solar farm will have significant beneficial effects to soil resources and the functions they provide. The effects include improvements to soil structure (this will make the soil less prone to erosion and increase the permeability of the land so that water drains away more effectively); and increases to soil carbon content.

Further surveys will be undertaken in 2023 to accurately define the locations of the different land quality grades within the Solar PV Site. This will help refine the design through the continued placement of above ground infrastructure away from the best quality land where possible.

East Yorkshire Solar Farm

How big is the Solar Farm?

The area of land required for the proposed solar farm (excluding the cable connection to the National Grid Drax Substation and interconnecting cables) is approximately 1,275 hectares (or 1,445 hectares including the cable corridors). The electricity generated by the solar farm will be sent to National Grid Drax Substation located approximately 6.2 km to the southwest, via an underground cable.
Why does it need to be so big?

The government's targets to cut carbon emissions to zero by 2050 will require a rapid and expanded deployment of low carbon power sources, and it has identified solar as part of the energy mix to deliver this. This approach is essential to combat climate change, referred to by the UN as the "defining crisis of our time". Large scale solar farms such as East Yorkshire Solar Farm are comparatively quick to build and begin operation compared to other power generation methods, meaning they play an important role in delivering the urgent need to decarbonise the UK energy supply.

The size of East Yorkshire Solar Farm and the proximity to the grid connection at Drax will facilitate a large quantity and highly efficient input of renewable energy into the national grid using the latest solar technology.

Who is funding the Scheme, and will it cost the taxpayer money?

East Yorkshire Solar Farm is being proposed by Boom Power a UK company. The scheme will be entirely funded using private capital, with no government subsidies or other public money being used. We are exploring the use of a community benefit scheme, in support of local projects to ensure the project will bring tangible benefits for the local community.
What is the timescale you are working on to deliver East Yorkshire Solar Farm?
We intend to submit our DCO Application to the Planning Inspectorate in late 2023. Consent, if granted will be in early 2025.

How long would it take to build East Yorkshire Solar Farm subject to the Scheme being granted consent?
If consent is granted, we anticipate that construction is likely to take approximately 24 months. The construction will be phased across the site, so we will not work in all areas at once during this period.

Is the solar farm permanent?

The solar farm is not permanent, so once it has reached the end of its operational life, it can be removed, with the land returned to its original use if at the time this is considered appropriate. The removal of the solar farm is included in the planning process and so is factored into costs, environmental assessments and the DCO.

A Decommissioning Environmental Management Plan (DEMP) will be created before the decommission process begins. East Yorkshire Solar Farm is required to place money into a Decommissioning Bond. This is a financial product that will guarantee the funds for removal of the solar farm at the end of its life. We estimate that the decommissioning period will take between 12 and 24 months. On decommissioning, we are committed to recycling everything than can be recycled. At the current time, we estimate this to be at least 95% of all the material used in the solar farm.

Where will East Yorkshire Solar Farm connect to the national grid?

East Yorkshire Solar Farm will connect to the national grid, via the National Grid substation near Drax. The farm will connect via underground cables, so there will be no visual impact from the connection after construction.

Will local communities be able to have their say on your proposals?

Yes, the local community, businesses, statutory organisations and anyone interested in the Scheme will be able to have their say on the proposals. We held our first consultation, sometimes called a non-statutory consultation, in October 2022 where we presented our initial plans. We had lots of useful feedback to the consultation. We have taken all comments into consideration and used them to refine and update the design of the Scheme. We are holding a statutory consultation from 9 May to 20 June 2023 on our updated proposal. Full details of the consultation are on our website at: www.boom-power.co.uk/east-yorkshire

You can respond to the consultation using any of the following methods:

- Post: Complete a feedback form and post to us at FREEPOST East Yorkshire Solar Farm. You can access a feedback form at one of our in-person events, or request a physical or digital copy to be shared with you directly, by emailing EastYorkshireSolarFarm@Boom-Power.co.uk
- Online: Complete the feedback form at www.boom-power.co.uk/east-yorkshire
- Email: Email your answers to us at EastYorkshireSolarFarm@Boom-Power.co.uk

The deadline for responses is 23:59 on 20 June 2023. All responses received before the deadline will be considered.

Technical

What is a Nationally Significant Infrastructure Project (NSIP)?

Nationally Significant Infrastructure Projects otherwise known as NSIPs are large scale projects which are deemed to be nationally important and require consent by way of a Development Consent Order (DCO). Consent to build them therefore needs to be determined at a national level by the responsible Secretary of State.

Unlike local planning applications, which are considered by local authorities, DCO applications are made to the Secretary of State and handled by the Planning Inspectorate. In the case of a solar farm, the final decision on a DCO application is made by the Secretary of State for Energy Security and Net Zero. The process for applying for a DCO is set out in the Planning Act 2008.

The anticipated generation capacity of East Yorkshire Solar Farm is approximately 400 MW, more than the 50 MW threshold set out in the Planning Act 2008 which means it is regarded as an NSIP.
You can find out more about the process of applying for a DCO on the National Infrastructure Planning website at: https://infrastructure.planninginspectorate.gov.uk/application-process/the-process/

What type of solar panels will be used?

The photovoltaic (PV) panels will be mounted on tables that will tilt through the day from east to west as they track the sun. This means that that the panels will always be in the most efficient position. At their maximum tilt (at sunrise and sunset), the panels will briefly be up to 3.5 m high – although for most of the day they will be lower than this. The panels will lie flat overnight or in extreme weather, at a height of approximately 2.2 m.

The panels used will be bi-facial panels. Whereas typical solar panels (mono-facial) have an opaque back sheet to hold the PV cells in place, bifacial panels have a reflective back or a glass back, meaning the PV cells can be exposed on both the top and bottom to sunlight. As a result, bifacial panels have a higher efficiency and as they can capture sunlight on both sides, means that they are capable of generating more energy. The higher efficiency and extra surface area per panel for capturing sunlight also means that bi-facial panels perform better in diffuse light conditions.

Why is battery storage required as part of this scheme?

Solar energy is intermittent by nature so does not generate energy at a constant rate through the day. As a result, the energy supply also does not necessarily line up with peak demand. Battery storage has a crucial role in balancing the supply with the demand. Energy can be stored when more is being generated and then released when the demand is higher.

For this scheme, only energy generated from the site can be stored in the associated battery storage. The energy stored can then be released to the National Grid at peak demand times. No energy will be imported from the National Grid.

Will East Yorkshire Solar Farm create a glint/glare issue?

At this stage it is not expected that there would be any significant effects from glint and glare. This is because, if glint and glare effects are identified as the design progresses, they can be relatively easily mitigated through a number of measures including adjusting the position of panels, removing panels, temporary hoarding or vegetation planting to remove the line of site and risk of glint and glare.

The tracking nature of the panels also reduces the risk of glint and glare, by keeping the panels directly facing the sun, reducing glint and glare possibilities compared to a fixed, non-tilting system.

Glint and glare impacts are one of the factors assessed in the environmental impact assessment along with the risk this poses to safety on the nearby roads, railway and aerodrome. Should any risk of glint and glare be identified, screening in the form of new planting or fencing can effectively address this risk.

Will there be any noise/ buzz from the solar farm?

The design of the farm has positioned panels away from roads and Public Rights of Way, and given the distance to the nearest panel from the outside of the solar farm, the sound of tracker motors associated with the movement of panels is not expected to cause any disturbance.

The site has been designed so that any noise generating infrastructure such as the inverters, transformers and battery storage systems, which can create quiet buzz or fan noise, is located away from residential receptors. The results of noise modelling suggest that there will be no significant noise impacts on residential properties during the operation of the solar farm. It is anticipated that noise from the inverters and transformers will be minimal or none at night-time.

Will East Yorkshire Solar Farm impact any public rights of way (PRoW)?

There is a network of PRoW both within the Solar PV Site and the surrounding area. There will be no requirement for permanent PRoW closures within the Solar PV Site. Existing rights of way within the solar farm will be retained with buffers to separate users from solar infrastructure. During construction PRoW which are crossed by the Interconnecting or Grid Connection Cables would only be impacted during the short-term trenching and restoration operations. These PRoW will remain open (anticipated to be managed through traffic management measures) although routes may be slightly altered temporarily, for example moving from one side of a road to the other as works are completed.

We are proposing two permissive paths, reinforcing the existing public rights of way in the local area. These paths, which may also include bridleway, will increase local accessibility and connectivity, and provide circular routes for local walkers and horse riders to use. One of the new permissive paths will lead to a new Wetland Wildlife and new proposed bird watching area to the east of the solar farm.

K.4 Plans of the proposed solar farm and cable route

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AECOM

PROJECT

East Yorkshire Solar Farm

CLIENT

East Yorkshire Solar Farm Limited

CONSULTANT

AECOM Limited
Midpoint,
Alencon Link
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www.aecom.com

LEGEND

Site Boundary

NOTES

ISSUE PURPOSE

Statutory Consultation

PROJECT NUMBER

60683115

FIGURE TITLE

The Site

FIGURE NUMBER

Figure 1

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LEGEND

- Site Boundary
- Solar PV Site (xx = Solar PV Area)

NOTES

ISSUE PURPOSE

Statutory Consultation

PROJECT NUMBER

60683115

FIGURE TITLE

Site Boundary Plan

FIGURE NUMBER

Figure 2

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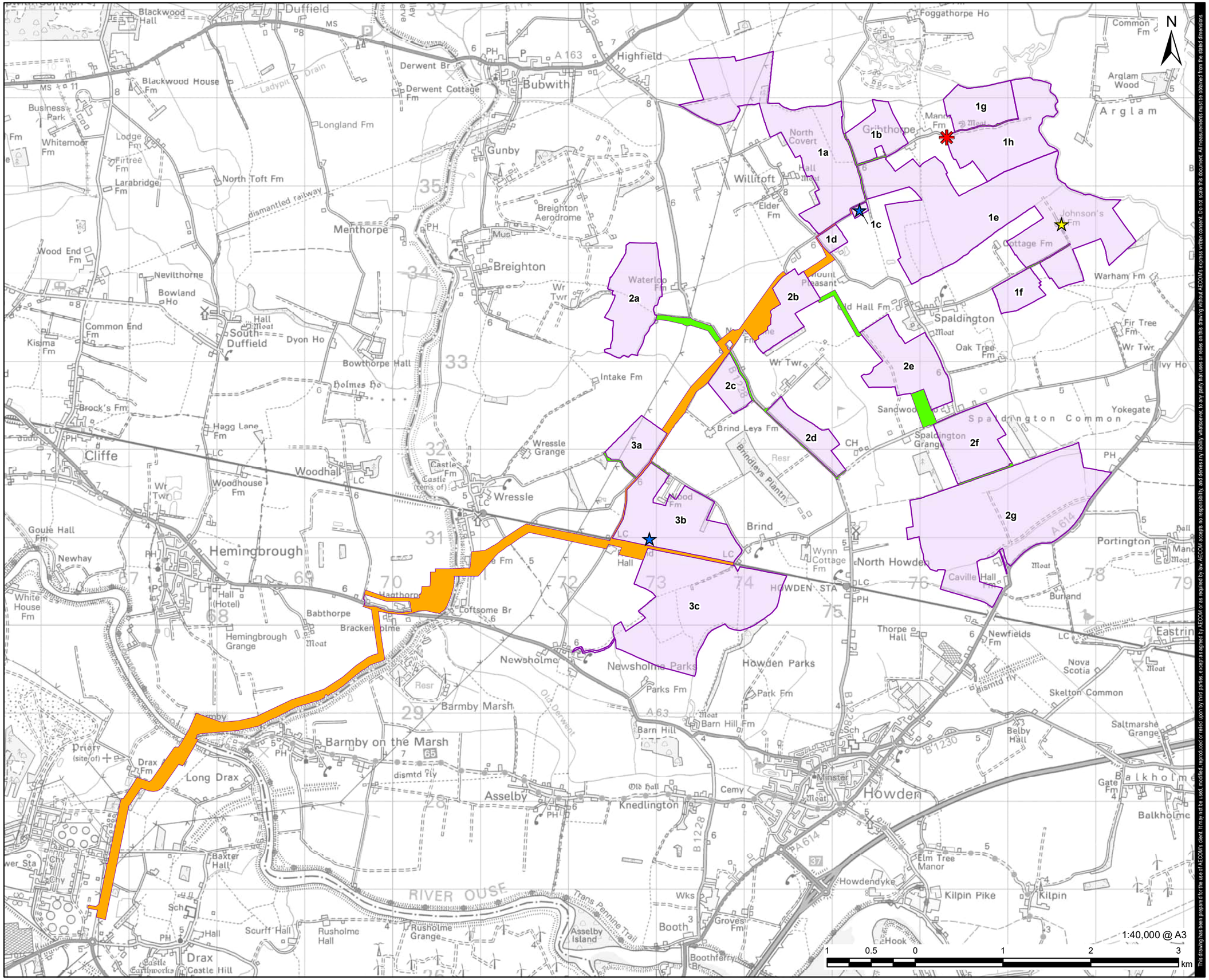

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LEGEND

- Solar PV Site (xx = Solar PV Area)
- Grid Connection Corridor
- Interconnecting Cable Corridor
- 33kV/132kV Grid Connection Substation
- Existing Agricultural Buildings to Be Used for Storage
- Location of Operations and Maintenance Base (Johnson's Farm)

NOTES

ISSUE PURPOSE

Statutory Consultation

PROJECT NUMBER

60683115

FIGURE TITLE

Elements of the Site

FIGURE NUMBER

Figure 3

K.5 PEI Report Non-technical summary

EAST YORKSHIRE SOLAR FARM

PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

VOLUME 1

NON-TECHNICAL SUMMARY

MAY 2023

BOOM-POWER.CO.UK

BOOM POWER

Prepared for:

East Yorkshire Solar Farm Limited

Prepared by:

AECOM Limited

Table of Contents

Figures

Plates

1. Introduction

1.1 Overview

1.1.1 This document has been prepared by AECOM on behalf of East Yorkshire Solar Farm Limited (the 'Applicant') and provides a Non-Technical Summary (NTS) of the Preliminary Environmental Information (PEI) Report for the proposed East Yorkshire Solar Farm (hereafter referred to as the Scheme).

1.1.2 The Scheme will involve the construction, operation (including maintenance) and eventual decommissioning of ground mounted solar photovoltaic (PV) panels, along with associated infrastructure such as a battery energy storage system (BESS), across approximately 1,275 hectares (ha) of land, as well as underground cabling to link the different areas of solar panels and to export solar electricity to the national electricity transmission network at National Grid's Drax Substation.

1.1.3 The Scheme is a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008, as it will have the capacity to generate more than 50 megawatts (MW) of electricity. Under the Planning Act, a type of planning consent called a Development Consent Order (DCO) is required to build an NSIP.

1.1.4 The Applicant will carry out additional design and environmental assessment work after statutory consultation (of which the PEI Report is a key part), with the intention of submitting an application for a DCO in autumn 2023. Following an examination by the Planning Inspectorate, this application will then be decided by the Secretary of State for Energy Security and Net Zero.

1.1.5 AECOM is a registrant to the Environmental Impact Assessment (EIA) Quality Mark scheme run by the Institute of Environmental Management and Assessment (IEMA).

1.2 What is an Environmental Impact Assessment?

1.2.1 Environmental Impact Assessment (EIA) is a process to ensure that planning decisions are made with full knowledge of the likely significant environmental effects of a proposed development. The outcome of the EIA process is reported within an Environmental Statement (ES) submitted with a DCO Application. The ES is an update to the PEI Report, based on further environmental information and assessment.

1.2.2 The objective of the EIA is to identify any likely significant effects which may arise from a proposed development and to identify measures to prevent, reduce or offset any adverse effects and to enhance any beneficial effects. During the EIA process for the Scheme to date, opportunities and management measures have been identified and incorporated within the

development proposals to prevent or reduce any adverse effects, and to enable sustainable design and construction principles to be embedded within the Scheme. Such opportunities and measures will continue to be identified and incorporated into the Scheme throughout the EIA process.

1.3 The Applicant

1.3.1 The Applicant is a wholly owned subsidiary of BOOM Developments Limited who specialise in non-subsidised solar and battery storage projects. BOOM Developments Limited was founded in 2020, and the name BOOM is an acronym for Build Own Operate Maintain. This reflects the organisation's intentions to be involved in sustainable energy projects from day one right the way through to operation. The BOOM Managing Director and team have been responsible in previous roles for constructing more than 700 MW of solar developments in the UK between 2015 and 2017 and developing more than 850 MW of solar projects including the UK's first nationally significant infrastructure solar photovoltaic (PV) project, Cleeve Hill, which was granted a Development Consent Order in 2020. In 2021, the UK based BOOM partnered with the Pelion Green Future group of companies based across Australia, America and the European mainland.

1.4 The Site

1.4.1 The land for which DCO consent is being sought is referred to as 'the Site' and comprises approximately 1,445 hectares (ha) of land, centred on National Grid Reference SE 756 330. It is located between the villages of Gribthorpe, Spaldington, Brind and Willitoft. The nearest town is Howden approximately 1.1 kilometres (km) away at the closest point.

1.4.2 The Site is shown on **Figure 1** and **Figure 2** of this NTS.

1.4.3 The Site comprises the following elements as shown on **Figure 3** of this NTS:

a. **The Solar PV Site**, which has an approximate area of 1,275 ha and will contain the ground mounted solar photovoltaic (PV) panels and associated infrastructure, Battery Energy Storage System, two Grid Connection Substations, and associated development. The Solar PV Site will also include areas of habitat creation/enhancement and landscaping;

b. **The Grid Connection Corridor** which is the area outside of the Solar PV Site within which the Grid Connection Cables linking the Grid Connection Substations to National Grid's Drax Substation (approximately 6.2 km south-west of the Solar PV Site) will be installed; and

c. **The Interconnecting Cable Corridor** which is the area outside of the Solar PV Site and Grid Connection Corridor within which the cables linking the Solar PV Site to the Grid Connection Substations will be installed.

1.4.4 The Solar PV Site and Interconnecting Cable Corridor are solely located within the administrative area of East Riding of Yorkshire Council. The Grid Connection Corridor is located within the administrative areas of East

Riding of Yorkshire Council and the newly formed Unitary Authority of North Yorkshire Council.

1.4.5 A description of the physical characteristics of the Scheme and the land-use requirements during the construction, operational, and decommissioning phases is presented in section 4: Scheme Description of the NTS.

Plate 1. Landscaped solar PV facility

1.5 The Purpose of the PEI Report and NTS

1.5.1 The purpose of the PEI Report is to accompany formal consultation under sections 42, 47 and 48 of the Planning Act 2008 and to enable "*consultees (both specialist and non- specialist) to understand the likely environmental effects of the Proposed Development and helps to inform their consultation responses on the Proposed Development during the pre-application stage*" (Planning Inspectorate, Planning Advice Note 7). It has been prepared to meet the requirements of Regulation 12(2) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations').

1.5.2 The PEI Report therefore presents an overview of the preliminary environmental information available about the Scheme, based on the design information available at this stage of the Scheme. The PEI Report is intended to provide members of the public, statutory consultees and other stakeholders with preliminary information on the Scheme's likely significant environmental effects.

1.5.3 The Environmental Impact Assessment (EIA) information contained within the PEI Report is 'preliminary' and does not represent a final project design or include final environmental assessment conclusions. The Applicant is

seeking consultation responses to the information presented in order to continue to refine the Scheme design. The Applicant will continue to obtain information that will inform the impacts, which will then be contained within the Environmental Statement (ES) that will accompany the DCO Application and report the findings of the EIA. Due to the preliminary nature of the assessment, this inherently means that the assessments are conservative (i.e. over-estimates). When the conclusions are finalised in the ES, because further certainty and information will be available, the significance of the effects identified in the PEI Report may be revised so that adverse effects decrease in significance.

1.5.4 The various assessments are therefore at different stages due to ongoing design work and continued gathering of baseline information.

1.5.5 The purpose of this NTS is to provide a summary of the PEI Report in non-technical language.

2. EIA Process and Methodology

2.1.1 **Chapter 5: EIA Methodology, PEI Report Volume 2** describes the approach the EIA has taken to assessing impacts associated with the Scheme, including the significance criteria against which impacts have been assessed.

2.2 Overview

2.2.1 EIA is the process undertaken to identify and evaluate the likely significant effects of a proposed development on the environment and to identify measures to mitigate or manage any significant negative effects. The EIA should be informed by consultation with statutory consultees, other interested bodies, and members of the public. The purpose of identifying significant effects is to ensure decision makers are able to make an informed judgement on the environmental impacts of a proposal.

2.2.2 The PEI Report provides the latest environmental information obtained and assessed as part of the EIA and forms an essential part of the statutory consultation materials.

2.2.3 Following statutory consultation, the PEI Report will be updated and renamed the ES. The assessments within the ES will reflect the feedback received during statutory consultation, the findings of the ongoing surveys, and the Scheme design refinements. The ES will accompany the DCO Application and will follow a similar systematic approach to EIA and project design as the PEI Report. The process of identifying environmental effects is both iterative and cyclical, running in tandem with the iterative design process.

2.3 EIA Scoping

2.3.1 The purpose of the EIA Scoping process is to determine which topics should be included in the EIA and the level of detail to which they should be assessed.

2.3.2 An EIA Scoping Report and a request for an EIA Scoping Opinion under Regulation 10 of the EIA Regulations was submitted to the Planning Inspectorate on 9 September 2022 (**Appendix 1-1, PEI Report Volume 4**).

2.3.3 The Scoping Opinion was received on 20 October 2022, which presents the formal response from the Planning Inspectorate (on behalf of the Secretary of State) and statutory consultees (**Appendix 1-2, PEI Report Volume 4**).

2.3.4 Key issues raised in the Scoping Opinion are summarised in **Appendix 1-3, PEI Report Volume 4,** and have been considered during the EIA process.

2.4 Consultation

2.4.1 The main consultation activities undertaken so far include:

a. Preparation of the Statement of Community Consultation involving consultation with relevant local authorities;

b. EIA Scoping;

c. Non-statutory (informal) Consultation Events; and

d. Other meetings with a wide range of consultees and stakeholders.

2.4.2 In addition, a project website has been set up to provide information on the Scheme: https://www.boom-power.co.uk/east-yorkshire/ and communication channels (email, Freepost, and phone line) have been open for stakeholders to enquire about the Scheme.

3. Site Selection and Design Evolution

3.1.1 The Site was identified through a site search exercise undertaken by the Applicant. **Chapter 3: Alternatives and Design Evolution, PEI Report Volume 2**, presents an overview of the reasons for selecting the Site, a description of and justification for the evolution of the Site Boundary, a description of how the design has evolved since EIA Scoping, and a discussion of the reasonable alternatives.

3.1.2 A range of technical, environmental and economic factors are considered when investigating and assessing any potential site for Nationally Significant Infrastructure Project (NSIP)-scale ground-mounted solar PV development. The key factors which were considered by the Applicant when selecting land for the Scheme included (in no particular order):

a. Solar energy levels and site topography;

b. Proximity to an available grid connection;

c. Agricultural Land Classification (i.e. the quality of agricultural land) and other land use conflicts;

d. Access to the site for construction;

e. Field size;

f. Engagement with local landowners; and

g. Environmental and social parameters described in this document, including proximity to local population, archaeological interest, landscape designations, nature conservation designations, and flood risk, for example.

3.1.3 Following consideration of the above factors, the area in which the Scheme has been located was identified as having good potential for a large-scale ground mounted solar PV facility.

3.1.4 The preparation of the PEI Report has led to a variety of key changes to the layout and technology, including for example:

a. Selecting east-west tracker solar PV panels with a maximum height of 3.5 m at maximum tilt;

b. Providing buffers and offsets from existing landscape features such as residential properties, Public Rights of Way, trees and hedgerows, and watercourses;

c. Integrating areas of habitat creation (grassland habitat, woodland habitat and screening, and the Wetland Wildlife Zone) into the Site design;

d. Integrating screening and planting into the Site design to reduce visual impact by providing environmental enhancement areas, off-sets and buffer zones;

e. Refinement of the layout plan following desktop analysis and site surveys; and

f. Carefully locating the larger built elements of the solar farm, such as the Grid Connection Substations and Field Stations, away from residential dwellings.

4. Scheme Description

4.1 Description of the Scheme

4.1.1 The Scheme comprises solar PV panels and associated infrastructure, Battery Energy Storage System infrastructure and two on-site substations. The solar PV panels will convert the sun's energy into electricity for storage on-site and export to the national electricity transmission network (also known as the national grid) via an underground cable.

4.1.2 The environmental impacts of a conventional power station are a direct result of the amount of electricity it can generate for example through the import of fuel to power the process or the level of atmospheric emissions it produces. This is not the case for solar energy generation and for this reason it is not proposed that the Scheme is restricted by imposing a limit on how much electricity it can generate.

4.1.3 Instead, the Scheme will seek a DCO that would restrict the aspects of the solar farm which have potential environmental impacts – such as the height of the solar panels, dimensions of the associated infrastructure and the

Grid Connection Substations, and where within the Site solar panels would be located. These are known as the 'design parameters'. This approach also ensures the Scheme will be able to generate electricity as efficiently as possible, using technology which is constantly improving and may allow greater amounts of electricity to be generated in the future, within the existing design parameters. Further information about the design parameters is presented in the sections below, and in **Chapter 2: The Scheme, PEI Report Volume 2**.

Scheme Components

4.1.4 The Scheme will consist of the principal infrastructure described below. To ensure that the likely significant environmental effects of the Scheme are no worse than those assessed in the EIA, the design parameters are the basis upon which the Scheme has been assessed. Indicative images to show the types of equipment which may be used within the Scheme presented in **Plate 2 to Plate 4**.

4.1.5 The solar PV panels will be located within the Solar PV Site, as illustrated by **Figure 4**, however the exact locations of solar PV panels have not yet been determined and will only be decided upon at the detailed design stage, which will occur after the determination of the DCO Application. For the purposes of the PEI Report and environmental assessments therefore, where flexibility needs to be retained worst case assumptions have been used for the assessments. The final design will be consistent with – and no worse environmentally – than the assumptions used and presented in the final ES that will accompany the DCO Application.

4.1.6 The Site is formed by the Solar PV Site, Interconnecting Cable Corridor and Grid Connection Corridor. The location of the Scheme components has been carefully considered and designed around specific areas, in order to minimise the impacts of these components.

4.1.7 The key Scheme components comprise:

a. Solar PV panels made up of multiple PV cells which convert sunlight into direct current (DC) electricity;

b. Solar PV panel mounting structures (may also be referred to as 'tables') that will move through the day from east to west tracking the sun to catch the most sunlight at all points of the day;

c. Field Stations incorporating:

   i. Transformers to change the voltage of the electricity generated which makes it more efficient to move over longer distances;

   ii. Centralised inverters to convert the direct current (DC) electricity generated from the solar PV panels into alternating current (AC) – the type of electricity we use in our homes(noting that string inverters, if used, will be located at the PV arrays); and

   iii. Switchgear, protection and control equipment.

d. String inverters as standalone within the PV array (parallel to or at end of frames), if central inverters are not used;

e. Onsite cabling typically above ground (but at low level, not overhead) locally to the units, and underground between units;

f. Interconnecting Cables – underground cabling between the Solar PV Areas which transmit electricity from the Field Stations to one of the two Grid Connection Substations;

g. Battery Energy Storage System structures and units (expected to be formed of lithium ion batteries storing electrical energy generated by the Scheme) distributed throughout the Solar PV Areas most likely co-located with the Field Stations;

h. Two Grid Connection Substations to further increase the voltage of the electricity generated so that it can be transported to the National Grid Drax Substation;

i. Operations and maintenance hub with welfare facilities (at Johnson's Farm, Solar PV Area 1e) and additional storage (Solar PV Area 1h);

j. Fencing and security measures (for example lighting and CCTV);

k. Access tracks;

l. Construction laydown areas; and

m. Landscaping and biodiversity enhancement.

4.1.8 It is most likely that at the Field Stations, the transformers, switchgear and inverters, or transformers and switchgear will be housed together in shipping-type containers such as illustrated in **Plate 5**. Battery Energy Storage System units will also look similar to this.

4.1.9 The perimeter fence of the solar farm is likely to be a 'stock and deer proof fence' or other mesh-type security fencing, such as illustrated in **Plate 6**. The perimeter fence will be at a maximum height of 2.2 m, and there will be a 5 m boundary from the field edge to the perimeter fence and a further 5 m boundary from fence to the solar PV panels.

4.1.10 During the construction phase, one or more temporary construction compound(s) will be required as well as temporary roadways to facilitate access to all land within the Solar PV Site as well as the Grid Connection Corridor.

4.1.11 Opportunities for landscaping and habitat management will be explored in areas around the solar infrastructure to contribute to achieving Biodiversity Net Gain (BNG).

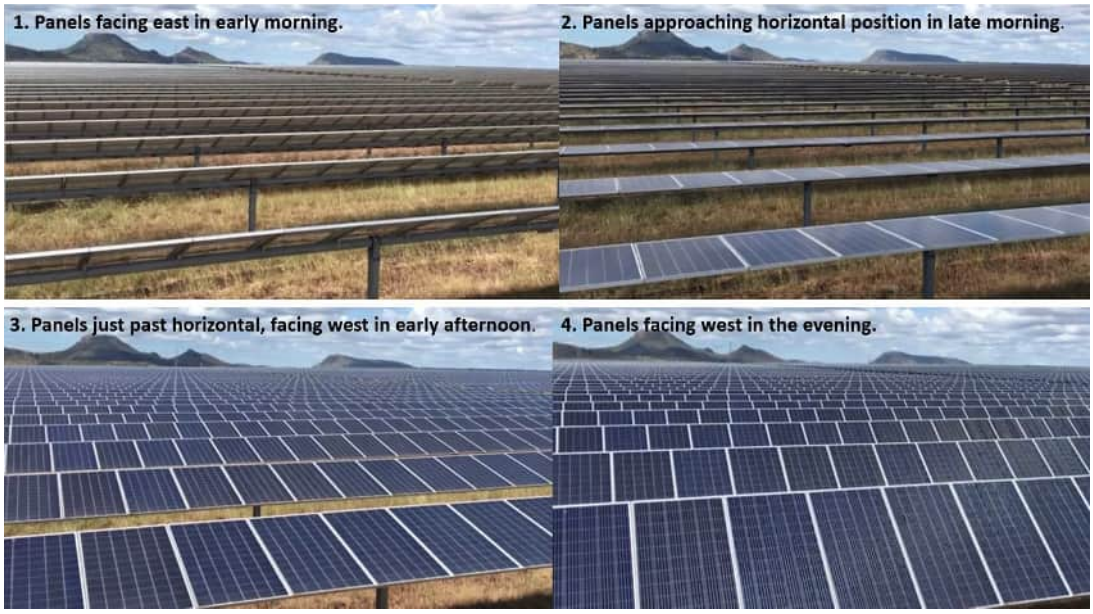

Plate 2. Typical solar PV panels – east-west single axis tracker system

Plate 3. Typical string inverter installed next to PV modules

Plate 4. Typical pair of central inverters

Plate 5. Typical unit housing the transformers and switchgear

Plate 6. Typical mesh and wooden post perimeter fencing

4.2 Construction

Construction Programme

4.2.1 Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Based upon the most rapid feasible construction programme, construction of the Grid Connection Cables is anticipated to require 12 months, whereas construction of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027.

Construction Activities

4.2.2 Construction activities will include:

a. Site preparation to include:
   i. Installation of fencing
   ii. Import of construction materials, plant and equipment to site;
   iii. The establishment of construction compound(s);
   iv. Upgrading of existing site tracks/access roads and construction of new tracks;
   v. The upgrade or construction of crossing points (bridging structures) over drainage ditches (it is noted that no new culverts will be created as a result of the Scheme; where there are existing culvert crossings these are assumed as a worst case to require an extension of up to 2 m);
   vi. Marking out the location of the infrastructure;

b. Solar PV facility construction to include:
    i. Import of components to site;
    ii. Erection of module mounting structures;
    iii. Mounting of modules;
    iv. Installation of electric cabling;
    v. Installation of transformer cabins;
    vi. Installation of battery storage units;
    vii. Construction of a substation compound;
c. Cable installation:
    i. The establishment of mobilisation areas and haul roads;
    ii. Temporary construction compounds (to be located on or near cable route, which are yet to be determined);
    iii. Stripping of topsoil in sections;
    iv. Trenching in sections;
    v. Appropriate storage and capping of soil;
    vi. Appropriate construction drainage with pumping where necessary;
    vii. Sectionalised approach of duct installation;
    viii. Excavation and installation of jointing pits;
    ix. Cable joint installation;
    x. Cable pulling;
    xi. Implementation of crossing methodologies for watercourses, infrastructure (including roads and rail), and sensitive habitats (for example, horizontal directional drilling);
d. Testing and commissioning;
e. Site reinstatement, including topsoil reinstatement and repair and reinstatement of existing field drainage; and
f. Habitat creation.

Site Access

4.2.3 Where possible the Scheme will utilise existing access tracks. Where required new access tracks will be constructed across the Solar PV Site. These would typically be 3.5 m to 5 m wide compacted stone tracks with gradient slopes on either side (where required).

4.2.4 Along the Grid Connection Corridor, haul roads will also be required and will be of a crushed stone over geotextile construction. The haul road with passing places will be within the cable laying working width.

4.2.5 No haul roads will be required for the installation of the Interconnecting Cables. Instead, tracked machines will be used where required.

4.2.6 The routes for all vehicles (Heavy Goods Vehicles (HGV), Abnormal Indivisible Loads (AIL), Light Goods Vehicles (LGV) and private vehicles) into the Site during construction, operation, and decommissioning are currently the focus of ongoing studies and will be presented in the ES.

4.2.7 It is currently proposed that the Site will be accessed using existing accesses where this is practicable. Accesses will be designed to ensure there are no impacts on veteran and mature trees generated by vehicle movements, however there may be localised removal of hedgerows where required. **Figure 4** illustrates the existing accesses.

Construction Staff

4.2.8 Based on the Applicant's experience of other similar sized solar projects, it is currently estimated the Scheme will generate an average of 320 full-time equivalent (FTE) on-site staff per day during the construction period. The size of the workforce is based on activities required and will fluctuate during the period, therefore, being both higher and lower than average at times.

4.2.9 Up to 400 FTE staff per day are expected to be required to work on the Scheme during the peak construction period, which is likely to include construction of the Grid Connection Substations, Grid Connection and Interconnecting cabling, and building of solar PV infrastructure. This is expected to be a worst case based on the most rapid build out programme, and there will be noticeably fewer workers outside peak activities.

Construction Controls

4.2.10 The construction phase will be subject to management documents which will limit and control activities. The outline documentation that will be produced with the DCO Application to mitigate effects associated with this phase will include:

a. Framework Construction Environmental Management Plan (CEMP) (also provided as **Appendix 2-1, PEIR Report Volume 4**);

b. Framework Soil Management Plan (SMP);

c. Framework Site Waste Management Plan (SWMP); and

d. Framework Construction Traffic Management Plan (CTMP).

4.2.11 The production of detailed (construction issue) versions of these plans will be secured through DCO requirement, meaning that they must be in place before development can lawfully begin. A Water Management Plan will be prepared in advance of construction again secured through DCO requirement.

4.3 Operation

4.3.1 During the operational phase, activity on the solar farm will be minimal and would be restricted principally to vegetation management, equipment maintenance and servicing (including panel cleaning), periodic replacement of components, periodic fence inspection, and monitoring to ensure the continued effective operation of the Scheme.

4.3.2 It is anticipated that there will be one to three permanent staff on-site at any one time during the operational phase, based at the offices at Johnson's Farm. Additional visitors such as maintenance workers and deliveries will be occasional, as needed. It is assumed that this will equate to four days of additional worker time per month.

4.3.3 The design life of the Scheme is expected to be at least 40 years; however, if equipment is still operating successfully and safely, the Applicant may choose to operate beyond the Scheme's originally anticipated design life. This is a common occurrence for generating stations. Many stations operate beyond the design life if they are well maintained. If granted, the DCO will therefore not specify a decommissioning date for the Scheme.

4.3.4 Along the routes of the Grid Connection and Interconnecting Cables, the land will be reinstated to its original condition and land use at the end of the construction period. Therefore, operational activity will consist of routine inspections and any reactive maintenance such as where a cable has been damaged (this will be infrequent and very localised).

Operational Controls

4.3.5 The operational phase will be subject to management documents which will limit and control activities. The outline documentation that will be produced with the DCO Application to mitigate effects associated with this phase will include:

a. Framework Operational Environmental Management Plan (OEMP);

b. Framework Landscape and Ecological Management Plan (LEMP);

c. Outline Surface Water Drainage Strategy; and

d. Framework Battery Energy Storage System Fire Safety Management Plan (BFSMP).

4.3.6 Again, the delivery of detailed versions of these plans will be secured through DCO requirement.

4.4 Decommissioning

4.4.1 Decommissioning is expected to take between 12 and 24 months and could be undertaken in phases. A Decommissioning Environmental Management Plan (DEMP) will be prepared prior to decommissioning and will be secured through a DCO requirement. A Framework DEMP will be provided with the DCO Application.

4.4.2 All solar PV panels, mounting structures, cabling, inverters, and transformers within the Solar PV Site will be removed and recycled or disposed of in accordance with good practice and market conditions at the time.

4.4.3 The future of the Grid Connection Substations and the Grid Connection Cables are not known at this time and will be dependent upon National Grid Electricity Transmission (NGET) and/or the asset owners IDNO Eclipse Power. It is common practice for such infrastructure to be retained and

used for another purpose after the development they were originally installed to support is decommissioned.

4.4.4 Other land within the Solar PV Site will be returned to the landowners after decommissioning. It is anticipated that some areas of habitat and screening planting created within the Scheme may be left in place after decommissioning as at that time they may be considered too ecologically valuable to be returned to agricultural use. The remaining land will be available for its original use.

4.4.5 Currently, the most environmentally acceptable option for the decommissioning of the Grid Connection Cables (if not retained) and the Interconnecting Cables is considered to be leaving the cables in place to avoid disturbance to overlying land and habitats and to neighbouring communities. Alternatively, the cables can be removed by opening up the ground at regular intervals and pulling the cable through to the extraction point, avoiding the need to open up the entire length of the cable route.

4.4.6 The effects of decommissioning are usually similar to, or of a lesser magnitude than, construction effects and have been considered in the relevant sections of the PEI Report. The specific method of decommissioning the Scheme at the end of its operational life is uncertain at present as the engineering approaches to decommissioning will evolve over the operational life of the Scheme. Decommissioning would be undertaken safely and with regard to the environmental legislation at the time of decommissioning, including relevant waste legislation.

5. Assessing Environmental Effects

5.1 Topics Assessed

5.1.1 **Chapters 1** to **5, PEI Report Volume 2** provide an introduction to the policy and legislative context, a description of the Site and surrounds, an overview of the Scheme and alternatives that were considered during the design process, and the approach and methodology to the EIA.

5.1.2 The following topic specific chapters have been produced and assessed in **PEI Report Volume 2:**

a. **Chapter 6:** Climate Change;
b. **Chapter 7:** Cultural Heritage;
c. **Chapter 8:** Ecology;
d. **Chapter 9:** Flood Risk, Drainage and Water Environment;
e. **Chapter 10:** Landscape and Visual Amenity;
f. **Chapter 11:** Noise and Vibration;
g. **Chapter 12:** Socio-Economics and Land Use;
h. **Chapter 13:** Transport and Access;
i. **Chapter 14:** Human Health;

j. **Chapter 15:** Soils and Agricultural Land;

k. **Chapter 16:** Other Environmental Topics, including:

   i. Air Quality;

   ii. Glint and Glare;

   iii. Ground Conditions;

   iv. Major Accidents or Disasters;

   v. Telecommunications, Television Reception and Utilities;

   vi. Materials and Waste; and

   vii. Electric and Electro-magnetic Fields.

5.1.3 **Chapter 17** of **PEI Report Volume 2** describes cumulative effects and effect interactions that lead to combined effects on sensitive receptors.

5.1.4 **Chapter 18** of **PEI Report Volume 2** presents a brief summary of the PEI Report outlining the preliminary significant effects identified at this stage of the environmental impact assessment process.

5.2 PEI Report Terminology

5.2.1 To enable comparison between technical topics and to aid understanding of the PEI Report findings, standard terms are used wherever possible to describe the relative significance of effects throughout the PEI Report (i.e. ‘major’, ‘moderate’, minor’, and ‘negligible’). The effects are also described as being adverse or beneficial. Where the quality standards for each technical discipline result in deviations in the standard assessment methodology, these are described in the relevant chapters as applicable within **PEI Report Volume 2**.

5.2.2 Each of the technical chapters within **PEI Report Volume 2** provides further description and definition of the significance criteria relevant to each topic. Where possible, this has been based upon quantitative and accepted criteria (for example, noise assessment guidelines), together with the use of value judgement and expert interpretation to establish to what extent an effect is significant.

5.2.3 Typically, effects that are considered to be negligible or minor are judged to be ‘not significant’, whereas those that are moderate or major are ‘significant’. Where the EIA predicts a significant adverse effect on one or more receptors, we have considered whether there are further mitigation measures which could avoid or reduce the effect, or reduce the likelihood of it happening. The use of any such mitigation will be secured through the DCO, should it be granted. As the design of the Scheme has evolved to date, the Applicant has worked with environmental specialists to ensure the design avoids or reduces environmental effects on receptors where possible through the use of embedded mitigation measures (meaning measures that form part of the design or methods for construction or operation), such as the use of a CEMP. These measures are taken into account in the EIA and assessment of effects of the Scheme.

6. PEI Report Findings

6.1.1 A preliminary assessment of the environmental effects of the Scheme during its construction, operation (including maintenance), and eventual decommissioning has been completed for each of the topics identified in section 5.1 above.

6.1.2 The preliminary conclusions on the likely significant environmental effects of the Scheme are described within **PEI Report Volume 2.** This section provides a brief summary of the overall findings of the PEI Report.

6.2 Climate Change

6.2.1 **Chapter 6: Climate Change, PEI Report Volume 2** presents the findings of an assessment of the likely significant effects of the Scheme on the Climate (for example, greenhouse gas emissions from the construction, operation, and decommissioning of the Scheme), the potential effects of Climate Change both on the Scheme' itself and on surrounding receptors as a result of the Scheme, and provides information on proposed mitigation measures.

Baseline and Context

6.2.2 Consideration has been given to the following aspects of Climate Change assessment:

a. Lifecycle greenhouse gas (GHG) impact assessment – the impact of GHG emissions arising over the lifetime of the Scheme on the Climate;

b. Climate change risk assessment (CCRA) – the resilience of the Scheme to projected future Climate Change impacts, including damage to the Scheme caused by accidents resulting from Climate Change; and

c. In-combination climate change impact (ICCI) assessment – this assessment identifies how the resilience of receptors in the surrounding environment are affected by the combined impact of future climate conditions and the Scheme.

Greenhouse Gas Assessment

6.2.3 At this stage in the Scheme design, and consistent with the preliminary nature of the assessment, a fully quantified GHG impact assessment of the Scheme has not yet been carried out. The GHG impact assessment has therefore relied on comparisons with other comparable schemes being brought forward in the UK, rather than project specific data which will not be available until the design is further evolved.

6.2.4 While the current land use within the Site Boundary will have minor levels of associated GHG emissions, it is anticipated that these emissions will not be material in the context of the overall Scheme. Therefore, for the purposes of the lifecycle GHG impact assessment, a GHG emissions baseline of zero is applied.

6.2.5 For the lifecycle GHG impact assessment, the future baseline is a 'business as usual' scenario whereby the Scheme is not implemented. The future baseline comprises of existing carbon stock and sources of GHG emissions within the Site Boundary from the existing activities on-site. Embodied GHG emissions are considered zero in the future baseline, as the land use within the Site Boundary has minor levels of associated GHG emissions from agricultural activities and minor carbon sequestration from vegetation. It also includes the operational emissions from the generation of electricity that would occur should the Scheme not go ahead but which are displaced in the case of the Scheme being delivered.

6.2.6 The receptor for the lifecycle GHG impact assessment is the global climate.

Climate Change Risk Assessment

6.2.7 The current baseline for the CCRA and ICCI assessment is the climate in the location of the Scheme for the 30-year period of 1981 to 2010 (the standard baseline for climate data). This is based on historic climate data recorded by the closest Met Office station to the Scheme (Topcliffe, approximately 15 miles north-west of the Scheme) for the 30-year climate period of 1981 to 2010.

6.2.8 The future baseline is expected to differ from the present-day baseline. These have been calculated using the United Kingdom Climate Change Projections 2018 (UKCP18).

6.2.9 The receptor for the Climate Change Risk Assessment is the Scheme itself, including all infrastructure, assets, and workers on-site during construction, operation, and decommissioning.

In-combination Climate Change Impact Assessment

6.2.10 The current baseline for the ICCI assessment is also the climate in the location of the Scheme for the 30-year period of 1981 to 2010 (the standard baseline for climate data). This is based on historic climate data recorded by the closest Met Office station to the Scheme (Topcliffe, approximately 15 miles north-west of the Scheme) for the 30-year climate period of 1981–2010.

6.2.11 Again, the future baseline is expected to differ from the present-day baseline. These have been calculated using the United Kingdom Climate Change Projections 2018 (UKCP18).

6.2.12 In the ICCI assessment, sensitive receptors are determined by each technical discipline. The assessment is undertaken in regard to the identified sensitive receptors and summarised in **Chapter 6: Climate Change, PEI Report Volume 2**.

Assessment of Effects

6.2.13 The assessment has considered the resilience of the Scheme to impacts of Climate Change and measures such as flood resilience have been integrated into the Scheme design.

6.2.14 The GHG impact of construction and decommissioning are anticipated to result in minor adverse, **not significant** effects on the climate, while the impacts of operation of the Scheme is considered to have a **beneficial, significant effect**.

6.2.15 GHG emissions savings are expected to be achieved throughout the lifetime of the Scheme. Therefore, the GHG emissions during construction, operation, and decommissioning of the Scheme can be considered to be balanced by the net positive impact of the Scheme on GHG emissions and the UK's ability to meet its carbon targets.

6.2.16 The GHG savings achieved throughout the lifetime of the Scheme demonstrate the role solar energy generation has to play in the transition to, and longer-term maintenance of, a low carbon economy. Without low-carbon energy generation projects such as the Scheme, the average grid GHG intensity will not decrease as projected, which could adversely affect the UK's ability to meet its carbon reduction targets.

6.2.17 As the GHG impact of the Scheme is beneficial because it will play a part in supporting the UK's trajectory towards net zero and avoids atmospheric GHG emissions when assessed against the comparable baseline, it is considered the Scheme overall is considered to have a **beneficial, significant effect** on the climate.

Climate Change Risk Assessment

6.2.18 Future Climate Change projections have been reviewed and the sensitivity of the Scheme's assets to the impacts of a changing climate have been examined. This review considers the adequacy of the Climate Change resilience measures built into the Scheme and whether they are sufficient to mitigate significant effects on the Scheme's assets. As a result of the proposed resilience measures **no significant** Climate Change risks during the construction, operation, and decommissioning phase have been identified.

In-combination Climate Change Impact Assessment

6.2.19 Future Climate Change projections have been reviewed and the sensitivity of identified sensitive receptors to these hazards examined as part of the In-combination Climate Change Impact Assessment. At this stage, **no significant effects** as a result of the effects of the Scheme combined with the impacts of Climate Change have been identified.

Mitigation Measures

6.2.20 A number of embedded construction mitigation measures are included within the Scheme, which are outlined in the Framework Construction CEMP (**Appendix 2-1, PEI Report Volume 4**) and include measures such as storing construction materials outside flood risk zones. The Framework CEMP also includes Climate Change resilience measures embedded in the Scheme. These include measures such as the production of health and safety plans accounting for potential Climate Change impacts on workers. The implementation of construction phase mitigation measures will be secured through the detailed CEMP as a DCO Requirement.

6.2.21 Further Climate Change resilience measures embedded within the Scheme include:

a. Fire detection and automatically operated fire extinguisher system built into BESS Battery Containers;

b. Drainage arrangements to attenuate surface water runoff and minimise flood risk to the Scheme location (as described in the Water Management Plan for the construction phase and the Surface Water Drainage Strategy for the operational Solar PV Site); and

c. Regular maintenance activities carried out by the contractor will provide the opportunity to monitor asset performance and condition.

6.3 Cultural Heritage

6.3.1 **Chapter 7: Cultural Heritage, PEI Report Volume 2** presents the preliminary assessment of the likely significant effects of the Scheme on cultural heritage assets. Cultural heritage comprises all aspects of the environment resulting from the interaction and relationships between people and places through time. Heritage assets include buildings, monuments, sites, places, areas or landscapes identified as having a degree of significance due to their heritage interest.

Baseline and Context

6.3.2 There are no designated heritage assets located within the Site Boundary. The Historic Environment Record (HER) has 18 records for non-designated heritage assets located within the Site Boundary; one of which is located within the Grid Connection Corridor and the remainder within the Solar PV Site. In addition, the site walkover identified an historic landscape feature that is not recorded on the HER but was assessed to have a level of historic interest. The feature, comprising Pear Tree Avenue (AEC001), is crossed by the Grid Connection Corridor and is therefore assessed in the PEI Report.

6.3.3 A number of scheduled moments, listed buildings, and other heritage assets are present within the vicinity of the Site.

6.3.4 A programme of archaeological geophysical survey for the Scheme is ongoing. The results of the geophysical survey, which has been completed across the Solar PV Site and parts of the Interconnecting Cable Corridor, have informed the preliminary assessment in **Chapter 7: Cultural Heritage, PEI Report Volume 2**. The geophysical survey is still to be completed across the Grid Connection Corridor and this will be completed for the detailed impact assessment in the ES. The geophysical survey results will also inform the scope of further evaluation, comprising trial trenching. The results of the trial trenching will be reported in the ES and will help inform the scope of further embedded mitigation (such as the preservation of archaeological remains) and additional mitigation (such as archaeological excavation and recording in advance of construction).

Assessment of Effects

6.3.5 The preliminary assessment of the likely significant effects of the Scheme takes into account the embedded mitigation measures, described in Section 7.8 of Chapter 7. These measures include mitigation by design to reduce changes to the setting of built heritage and historic landscape assets.

6.3.6 The preliminary assessment has been informed through a desk-based assessment (DBA – **Appendix 7-2, PEI Report Volume 4**), a site walkover, the results from the ongoing programme of geophysical survey, and consultation with the local authority archaeological advisors.

6.3.7 Based upon the worst-case parameters, the preliminary assessment has identified **moderate adverse significant effects** as a result of the construction of the Scheme on the following buried archaeological remains:

a. A moated site (MHU3206), the unclassified mound located in the south-west corner of Solar PV Area 1g;

b. An unclassified mound located in the south-west corner of Solar PV Area 1g; and

c. Features associated with a Romano-British settlement (MHU10775) in Solar PV Area 1e.

6.3.8 The additional mitigation measures including avoidance by design and programme of archaeological investigation, recording and reporting will be agreed with the relevant local authority archaeological advisors and will ensure that these significant preliminary effects are mitigated to a level where **no significant** residual effects occur.

6.3.9 The site walkover, detailed in the DBA in **Appendix 7-2, PEI Report Volume 4**, confirmed that views of the Site did not contribute to the setting and value of many heritage assets within the DBA's Study Area. Furthermore, the nature of the landscape, comprising hedgerow boundaries and areas of tree planting, restricted views of the Site and minimised the potential for heritage assets to experience change as a result of the Scheme's construction. The preliminary assessment therefore focusses on assets within relative proximity, i.e., 1 km, to the Site, as assets closer to the Scheme would be more sensitive to change from construction activities such as noise, dust and vibration.

6.3.10 The preliminary assessment concludes there would be no significant adverse effects to heritage assets arising from temporary construction activities. The assessment concludes there would be no effect for the majority of assets within 1 km of the Site. A **negligible effect**, which is not significant, has been identified for the following heritage assets:

a. Hagthorpe Hall (1148458) and stables (1148459), both Grade II listed;

b. Derwent View Grade II listed building (1168001); and

c. Rowland Hall Grade II listed building (1083172).

6.3.11 A temporary **minor adverse** effect, which is **not significant**, has been assessed for Drax Augustinian priory scheduled monument (1016857) as a result of temporary construction activities within its setting.

6.3.12 The assessment of temporary construction impacts will be updated for the ES and will consider the results of surveys carried out for the ES by other technical chapters, including Noise and Vibration, Landscape and Amenity, and Transport and Access.

6.3.13 The preliminary assessment of operational impacts identified no significant effects as a result of the presence of the Scheme due in part to the distances involved between the operational Scheme and heritage assets. Additionally, heritage assets in proximity to the below-ground components within the Grid Connection Corridor and Interconnecting Cable Corridor would not be impacted by the operational Scheme as below-ground components would preclude change within their setting.

6.3.14 The preliminary assessment assumes that permanent impacts to heritage assets within the Site, if present, would have occurred during construction and therefore potential impacts to heritage assets arising from decommissioning would be no greater than those deriving from the construction of the Scheme.

6.3.15 The preliminary assessment recognises that an updated assessment of decommissioning impacts will be undertaken for the ES when more detailed design information is available, including further detail of the likely methodologies to be used in the removal of solar PV panels/solar PV mounting structures. The setting of heritage assets will continue to be considered throughout detailed design development and opportunities for further mitigation of significant effects, such as through additional screening or setbacks, will be considered in the ES, if appropriate.

Mitigation Measures

6.3.16 The cultural heritage impact assessment has, and continues to, inform the design process. Embedded mitigation measures relevant to cultural heritage comprise:

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

b. The chosen colour palette for above-ground components of the Scheme will reflect the prevailing landscape, minimising their visual impact.

6.3.17 Further embedded mitigation measures will be added once the results of fieldwork surveys are known. Further measures may include:

a. Additional buffer zones around heritage assets to preserve their setting;

b. Creation of development-free zones within the Site Boundary in order to achieve preservation of archaeological remains;

c. Minimising vegetation clearance, land disturbance and land take to reduce loss of archaeological remains; and

d. Use of concrete rather than ground piles at locations of sensitive heritage assets (and where feasible), to reduce the depth of the infrastructure so the PV Table mounts sit on the surface rather than needing to be driven into the ground.

6.3.18 Potential impacts to archaeological remains that cannot be avoided by design will be mitigated through a proportionate programme of archaeological investigation, such as archaeological excavation in advance of construction.

6.3.19 The scope of additional archaeological mitigation, which would cover the preservation of heritage assets and buried archaeological remains, as well as archaeological excavation, will be set out in a Written Scheme of Investigation and agreed with the Archaeologist for the relevant planning authority.

6.4 Ecology

Baseline and Context

6.4.1 **Chapter 8: Ecology, PEI Report Volume 2** presents the findings of a preliminary assessment of the likely significant effects of the Scheme on ecology, which has been informed by a desk study and initial ecological field surveys. The preliminary assessment considers effects on designated sites, habitats, and protected species and is based on information obtained to date.

6.4.2 A desk study was undertaken to identify sites designated for nature conservation and records of protected and/or notable habitats and species (ecology features) and invasive non-native species (INNS) that are relevant to the Scheme. The North and East Yorkshire Ecological Data Centre (NEYEDC) was contacted in July 2022 to gain information on pre-existing ecological data (i.e.: location of Local Wildlife Sites (LWS), existing records of protected, notable and INNS within 2 km of the Site). A review of available online data was also undertaken using a range of sources (as detailed in **Chapter 8: Ecology, PEI Report Volume 2**)

6.4.3 Ecological field surveys are ongoing, having commenced in April 2022 and will continue in 2023, to characterise the ecological baseline within the relevant Study Areas. Details of the survey areas, methods, survey periods and guidance that will be used for each survey are presented in **Table 8-2** of **Chapter 8: Ecology, PEI Report Volume 2**. Full details of these surveys will be included within the ecology chapter of the ES and the associated technical appendices.

6.4.4 Ecological features considered in the PEI Report include species and habitats that are important at an international, national, and local level (i.e. how rare and important the species and habitats are). The desk study and Phase 1 habitat surveys undertaken to date indicate that the majority of the Site consists of arable land, with areas of grassland, water bodies, woodland and hedgerows throughout.

6.4.5 The desk study identified 10 international statutory sites for nature conservation within 10 km of the Site Boundary (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites) and 11 other national statutory designated sites for nature conservation (Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs)) within 5 km of the Site. No SAC's designated for bats were identified within 30 km of the Site Boundary.

6.4.6 A desk study identified 11 non-statutory sites designated for nature conservation within 2 km of the Site Boundary (LWSs, Sites of Importance for Nature Conservation (SINCs) and Candidate LWSs). Two of these sites, namely Tottering Lane, Gribthorpe LWS and Wressle Verge LWS lie within the Site and are likely to be crossed by cabling works.

6.4.7 A Phase 1 habitat survey of the Site commenced in April 2022 and continued until September 2022. The survey recommenced in spring 2023. The following protected species surveys and/or associated data analysis are ongoing: birds (over wintering and breeding), bats, otter, water vole and badger. More detailed botanical surveys and hedgerow surveys will also be carried out where required. The ongoing Phase 1 habitat survey could potentially identify INNS and additional survey requirements for species groups such as reptiles and invertebrates. Through discussion with Natural England it has been agreed that the potential impacts to great crested newts (GCN) can be offset through a District Level Licence (DLL). This process will inform the ES, including information on the Scheme's likely impacts on GCN and the appropriate compensation required

6.4.8 Aquatic ecology walkover surveys are proposed on minor watercourse crossings, where open-cut techniques are required, to assess the quality of aquatic habitats and the potential to support notable macroinvertebrates, macrophytes and fish.

Assessment of Effects

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

6.4.10 With the implementation of suitable embedded mitigation (as detailed in section 8.8 of **Chapter 8: Ecology, PEI Report Volume 2**), the preliminary assessment of effects on important ecological features has concluded that the construction, operation (including maintenance) and decommissioning phases of the Scheme are unlikely to result in significant effects to the species, habitats and designated sites considered, where a prediction can be made at PEI stage, based on currently available data.

6.4.11 It is not possible at this stage to determine if construction of the Scheme is likely to result in significant effects on non-breeding (passage and over wintering) birds and to the following designated sites: River Derwent SAC/ SSSI, Lower Derwent Valley SPA/ Ramsar/ SAC, Breighton Meadows SSSI, Lower Derwent Valley NNR, Derwent Ings SSSI and Humber Estuary

SAC/ SPA/ Ramsar/ SSSI, as surveys and data analysis to inform the assessment are not yet complete. The potential for significant effects on qualifying/cited bird species associated with these sites will be determined at ES stage, following completion of the ongoing ecology surveys, analysis of the data and engagement with relevant stakeholders such as Natural England.

6.4.12 Although the preliminary assessment has concluded that the majority of effects on important ecological features can be suitably mitigated through industry good practice and embedded measures alone there is potential for additional site or species specific measures such as those referenced in section 8.10 of **Chapter 8: Ecology, PEI Report Volume 2** to be identified as a result of further survey and as the Scheme evolves. Such measures will be presented within the ES. In some cases, these measures may not be required to prevent a significant effect from occurring, but their implementation would further reduce the potential impacts of the Scheme.

6.4.13 Potential effects upon international statutory designated sites will be assessed as part of the ES and through the Habitats Regulation Assessment (HRA) process.

Mitigation Measures

6.4.14 Whilst there is the potential for effects upon ecological features during construction, mitigation measures designed to prevent or reduce adverse impacts upon ecological features will be embedded in the Scheme. These include maintaining ecological connectivity and the creation of habitat to mitigate and compensate for habitat loss during construction.

6.4.15 Embedded mitigation for ecology has been incorporated into the Scheme design, with detailed proposals and locations to be submitted with the DCO Application. Potential additional mitigation measures that may be required have also been identified in **Chapter 8: Ecology, PEI Report Volume 2**. These measures have been identified on the basis of baseline conditions known at the time of reporting. It is anticipated that further measures may be required as the baseline conditions are fully established. EIA is an iterative process, and should further mitigation be identified, e.g. if ongoing ecological surveys determine other impacts, then the Scheme design will look to capture these and will be further refined to embed mitigation.

6.4.16 Examples of embedded mitigation for ecological features include:

a. Avoidance of protected species, such as 30 m from active badger setts and 10 m buffer from watercourses (where open cut is not required);

b. Undeveloped buffers will be included in the Scheme design to protect hedgerows, woodland, individual trees and ponds during construction; and

c. Use of trenchless crossing techniques such as horizontal directional drilling (HDD) for sections of the Grid Connection and Interconnecting Cable Routes to avoid disturbance to the River Derwent (including sections designated as a SAC and SSSI), River Ouse and Featherbed Drain.

d. Ensuring that site traffic using the existing access track between the A63 and fields to the north, through the River Derwent SSSI/SAC, stays on the track and does not impact habitat to either side.

6.4.17 Only minor watercourses and drains would be crossed using open cut techniques to reduce the potential direct impacts upon aquatic habitats and potential effects upon associated protected fauna such as water vole or otter (if present). Similarly, woodland, trees and other features with potential to support roosting bats and nesting birds would also be avoided as far as possible. New areas of grassland, including open areas (in areas free of solar PV panels, including field margins) and under and around the solar PV panels, will provide alternative suitable habitat for a range of protected and notable species such as birds, small mammals, reptiles and amphibians. The design also includes for the provision of a 'Wetland Wildlife Zone', which would benefit birds. New hedgerow and tree planting will also provide suitable habitat for a range of species and will help to maintain connectivity across the Site.

The provision and implementation of mitigation measures will be secured through the detailed CEMP, OEMP and DEMP, and the LEMP as requirements of the DCO. A Framework CEMP is presented at **Appendix 2-1, PEI Report Volume 4**. and Framework versions of the OEMP, DEMP and LEMP will be provided within the ES. A Biodiversity Net Gain (BNG) report will be prepared with the ES and submitted as part of the DCO Application but is not available at this stage as the design for the Scheme continues to evolve.

6.5 Flood Risk, Drainage and Water Environment

Baseline and Context

6.5.1 **Chapter 9: Flood Risk, Drainage and Surface Water, PEI Report Volume 2** presents the findings of a preliminary assessment of the likely significant effects of the Scheme on the water environment. It also identifies and proposes measures to address the potential impacts and effects of the Scheme on surface waterbodies (e.g. rivers, streams, ditches, canals, lakes and ponds) including water quality, hydromorphology, flood risk, drainage and water resources during construction, operation and decommissioning of the Scheme.

6.5.2 For the purposes of this assessment, a general Study Area of 1 km around the Site Boundary has been considered in order to identify water bodies that are hydrologically connected to the Scheme, and have the potential to be directly impacted by the activities associated with the Scheme. Watercourses flow and so water quality and flood risk impacts may propagate downstream. In this case, watercourses across the Study Area drain towards the River Foulness, River Derwent and River Ouse, and given their scale are these considered the final receiving waterbodies that could conceivably be affected (and which are all within the 1 km Site Boundary).

6.5.3 Baseline desk study and site survey have identified a number of surface and groundwater features of importance within the 1 km Study Area. The

Scheme is located within the Humber River Basin Management Plan (RBMP) area. It extends across three Management catchments, namely the Derwent Humber, Hull and East Riding, and Wharf and Ouse Lower Management Catchments. All watercourses in the Study Area ultimately drain to the River Humber (Humber Upper Water Framework Directive (WFD) waterbody within the Humber TraC Management Catchment) although it is not in the Study Area itself.

6.5.4 Significant surface water features in the Study Area include the Water Framework Directive (WFD) designated River Derwent, River Ouse, River Foulness and Fleet Dike. Named and unnamed drains, ditches and ponds (many being artificial) are ubiquitous across the Study Area, associated with agriculture and land drainage. There are also designated habitats sites in the Study Area including the Lower Derwent Valley SAC, SPA, NNR and Ramsar, the River Derwent SSSI and SAC, Derwent Ings SSSI and Breighton Meadows SSSI and Barn Hill Meadows SSSI.

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

6.5.6 The majority of the Solar PV Areas and Interconnecting Cable Corridor lie in Flood Zone 1 (less than 1 in 1,000 annual probability of flooding), with areas of Flood Zone 2 (between 1 in 100 and 1 in 1000 annual probability) and Flood Zone 3 (1 in 100 or greater probability of flooding) running across the Solar PV Areas to the north-east and south-west of the Solar PV Site, associated with the floodplains of the River Foulness and River Ouse and River Derwent.

6.5.7 The majority of the Grid Connection Corridor lies within Flood Zone 2 and 3, mainly associated with the River Derwent and River Ouse. There are flood defences that border the length of the River Ouse and River Derwent in the Study Area, as well as and their floodplains.

6.5.8 The risk of surface water flooding within the Site is generally very low (chance of flooding of less than 1 in 1000 annual probability) for the majority of the Scheme, with areas of low (chance of flooding between 1 in 1000 annual probability and 1 in 100 annual probability), medium (chance of flooding of between 1 in 100 annual probability and 1 in 30 annual probability) and high risk (chance of flooding of greater than 1 in 30 annual probability) generally associated with flow pathways following topographic low points, including drains and agricultural ditches, where surface water sits and pools rather than draining away, or areas at risk of flooding from smaller ordinary watercourses and/or local land drains.

6.5.9 Further flood risk details are provided in the Preliminary Flood Risk Assessment (FRA) (**Appendix 9-3, PEI Report Volume 4**).

Assessment of Effects

6.5.10 A number of activities during the construction, operation, and decommissioning phases are likely to generate impacts, which, if unmitigated, have the potential to affect the water environment.

6.5.11 A number of standard and embedded mitigation measures have been identified, which would be implemented during construction to manage the impacts and reduce the effects that the construction of the Scheme would have on the water environment. The construction of the Scheme will take place in accordance with a detailed CEMP (a Framework CEMP is included in **Appendix 2-1, PEI Report Volume 4**). The CEMP will detail the measures that would be undertaken during construction to mitigate the temporary effects on the water environment. The measures within the CEMP will focus on managing the risk of pollution to surface waters and the groundwater environment. It will also include measures regarding the management of activities within floodplain areas (i.e. kept to a minimum and with temporary land take required for construction to be located out of the floodplain as far as reasonably practicable).

6.5.12 of the topography of the Site is relatively flat, and apart from where cables are to be installed across watercourses using open trench techniques, the construction works across the Solar PV Site, Interconnecting Cable Corridor and Grid Connection Corridor are buffered from watercourses. As such, the risk to watercourses from construction activities is considered generally low. The greater risks of adverse impacts are where direct works are required within a watercourse, for instance for watercourse crossings for cable installation and access tracks. Suitable mitigation measures for these works are outlined in the Framework CEMP (**Appendix 2-1, PEI Report Volume 4**).

6.5.13 Following the implementation of the embedded mitigation set out in the PEI Report, including best practice measures secured via the CEMP, the effects for surface water, groundwater, or flood risk during construction are considered negligible, slight adverse, neutral or no change, and therefore **not significant**.

6.5.14 During the operational phase, there is the potential for adverse impacts on the water environment. The principal mitigation will be implementation of an appropriate Surface Water Drainage Strategy to be secured through DCO requirement. A Framework Surface Water Drainage Strategy will be submitted with the DCO Application. This will ensure that there is no increase in flooding as a result of the Scheme and will provide water quality treatment for any discharges from the Site, if required. Again, the effects for surface water, groundwater, or flood risk during operation are considered negligible, slight adverse, neutral or no change, and therefore **not significant**.

6.5.15 Potential impacts from the decommissioning phase of the Scheme are similar in nature to those during construction, as some ground works would be required to remove infrastructure. A detailed DEMP will be prepared prior to decommissioning to identify required measures to prevent pollution and flooding.

Mitigation Measures

6.5.16 The Scheme has been designed, as far as possible, to avoid and reduce impacts and effects on the water environment through the process of design development, and by embedding measures into the design of the Scheme.

6.5.17 Construction works undertaken adjacent to, beneath and within watercourses will comply with relevant guidance and good practice measures. This will include requirements of the Environment Agency for main rivers, and requirements of the Lead Local Flood Authority and Internal Drainage Boards for ordinary watercourses.

6.5.18 An Outline Surface Water Drainage Strategy will be submitted with the DCO Application which will provide for the attenuation of surface water runoff from the operational Solar PV Site, whilst minimising flood risk to the Site and surrounding areas.

6.5.19 Solar PV infrastructure will be off set from watercourses by a minimum of 10 m, the point of measurement (e.g. bank top or centreline of watercourse) will be agreed with the Environment Agency through further consultation.

6.5.20 No solar PV Infrastructure will be placed in Flood Zone 3. In Flood Zone 2) there is potential that maximum heights of infrastructure including panel heights may increase to accommodate flood risk design requirements, which will be determined through the modelling undertaken to inform the FRA which will be submitted with the ES. The FRA will include a review of the current and future flood risk to the Site from all sources. This will inform the Scheme design and set out any proposed mitigation requirements that are to be addressed within the Surface Water Drainage Strategy. A preliminary FRA has been provided at **Appendix 9-3, PEI Report Volume 4**.

6.5.21 Within the PEI Report the maximum heights presented for infrastructure are considered to be worst case and therefore the need for further increases in infrastructure height for flood risk mitigation within Flood Zone 2 (beyond those quoted) is unlikely.

6.5.22 A WFD Screening Assessment has been undertaken (**Appendix 9-2,PEI Report Volume 4**) and identified the potential for impacts on WFD status and objectives for certain waterbodies in the area of the Scheme. As such, an extended WFD Screening and Scoping impact assessment will be undertaken, taking into account further design developments, and will be submitted with the DCO Application.

6.6 Landscape and Amenity

Baseline and Context

6.6.1 **Chapter 10: Landscape and Visual Amenity, PEI Report Volume 2** presents the findings of an assessment of the potential significant effects on the existing landscape and views, which have been identified as part of the baseline. Landscape effects relate to changes to the landscape as a resource, including physical changes to the fabric or individual elements of

the landscape, its aesthetic or perceptual qualities and landscape character. Visual effects relate to changes to existing views of identified visual receptors ('people'), from the loss or addition of features within their view due to the Scheme.

6.6.2 The Landscape and Visual Impact Assessment identifies the sensitivity and overall significance of landscape and visual effects within the identified study area. The landscape and visual baseline assessments have been based on desk study and visual field work in early 2023.

6.6.3 Landscape receptors of the Scheme include Character National (NCA) 39: Humberhead Levels which covers the majority of the Study Area. A number of regional, county and local landscape receptors were also identified as part of the baseline. At the local level, the landscape is characterised by intensive arable land and fragmented hedgerow boundaries. Human elements and detracting features such as pylons and wind turbines influence the overall character.

6.6.4 Visual receptors in the area include residents, recreational users, users of the local roads and motorists using main roads.

Assessment of Effects

6.6.5 Embedded mitigation has been included within the Scheme design to reduce the landscape and visual effects of the Scheme. Without these measures, the effects of the Scheme on the landscape and visual receptors assessed within **Chapter 10: Landscape and Visual Amenity, PEI Report Volume 2** would be greater than the effects presented in this section of the NTS. Areas of planting and positioning of the Scheme have been designed around the following principles:

a. Careful siting of the Scheme within the Landscape;

b. Conserving existing vegetation patterns; and

c. Sensitive design in relation to form, colour, and materials

Construction (2025 to 2027)

6.6.6 At a national and county level, construction would result in **no significant effects** to the NCA and Landscape Character Types (LCT). The level of effect would be negligible and is considered to be temporary and short term.

6.6.7 At a district level, there would be the perception of construction activity in the parts of the Landscape Character Areas (LCA) adjacent to the Scheme, reducing the level of tranquillity locally. Construction would range from negligible to minor adverse effect, which is **not significant**, temporary and lasting only for the duration of the construction works.

6.6.8 Construction would result in negligible adverse effects on the remaining district level LCA. This is considered **not significant**.

6.6.9 Construction activities are expected to result in major or moderate adverse visual effects for residential and recreational receptors in close proximity to the Site. These effects are considered to be **significant**. This would result from the introduction of construction activity at close range across a wide

extent of a view and is inevitable due to the introduction of construction equipment into the Site.

6.6.10 Residential and recreational receptors located in the wider study area would experience minor and negligible effects during construction, reducing with increasing distance from the Scheme, these are considered to be **not significant**.

6.6.11 Elevated views of the construction site are only available from considerable distance from the east and locations include views from Holme on Spalding Moor and South Cliffe. Visual effects are considered to be negligible adverse and therefore **not significant**.

Operational Phase (Winter Year 1 – 2027)

6.6.12 Operational phase impacts have been assessed in both the first year during winter (when there are no leaves on vegetation) and in Year 15 during summertime (best case, after planting has established), in line with the requirements set out in professional guidance.

6.6.13 The operation of the Scheme during winter of the first year would result in **no significant effects** to the Landscape Character Types (LCT) defined at the County level. The level of effect would be negligible adverse.

6.6.14 At a district level, given the scale of the impacts relative to the overall Landscape Character Area and their long-term duration; the Scheme would result in an alteration to landscape character. The Scheme would result in a moderate adverse effect, which is considered **significant**.

6.6.15 Operation would result in negligible adverse effects to the remaining district level LCA. This is considered to be **not significant**.

6.6.16 At a local level, the operational phase of the Scheme would result in a moderate adverse (**significant**) effect to the Landscape Character Areas encompassing the majority of the Solar PV Site.

6.6.17 During operation the Scheme would result in a minor adverse (**not significant**) effect to the Landscape Character Areas covering the eastern part of the Solar PV Site.

6.6.18 Residential receptors with open views in close proximity to the Solar PV Site would typically experience major or moderate adverse effects, considered to be **significant**, during year 1 of operation. The Scheme layout includes an offset from residential properties and proposes mitigation planting, but this would not be established at Year 1. Therefore, the solar PV panels would be prominent in views for residents from the west of Gribthorpe, Spaldington Road, Thorpe Road, Wood Lane and the west of Brind.

6.6.19 People walking on the long-distance Howden 20 walking route would experience an overall moderate adverse effect during Year 1 of operation. As a result of the relatively flat landform and intervening vegetation, views of the solar PV panels and other solar infrastructure will be limited to those views in proximity to the Solar PV Areas. These effects are considered

significant. However, for users of the Howden 20 there are sections of the route where there would be no views of solar PV panels.

6.6.20 People walking on local Public Rights of Way (PRoW) would experience effects ranging from moderate adverse effect that would be **significant** to minor adverse that would be **not significant**. The range of effects would be dependent on the proximity to the Solar PV Site and intervening vegetation that would provide a level of screening. Local PRoW are shown in **Figure 5** of this NTS.

Operational Phase (Summer Year 15 – 2042)

6.6.21 Following the establishment of the planted vegetation in Year 15 and considering the benefit of summertime leaf, the Scheme is anticipated to result in **no significant effects** to the LCAs defined at the County level. The level of effect would be negligible adverse.

6.6.22 The level of effect on the landscape in the north of the Solar PV Site would be reduced from Year 1. Wildflower meadows would have established underneath the solar panel arrays. The proposed and strengthened hedgerows would be established and maintained at between 3 m and 3.5 m tall, providing an improved landscape structure and sense of enclosure to the Solar PV Site. The new tree planting areas would also be established. Collectively, the new planting would reduce the perception of the Scheme from the wider landscape, enhancing the existing hedgerow pattern and managing the ecological connectivity of tree belts. On balance the Scheme would result in a minor adverse effect. These effects are considered to be **not significant**.

6.6.23 For landscape in the eastern portion of the Solar PV Site during operation the level of effect would remain as a result of the limited planting proposed within these areas. On balance the Scheme would result in a minor adverse effect. These effects are considered to be **not significant**.

6.6.24 Operation would result in negligible effects to the remaining district level LCA. This is considered **not significant**.

6.6.25 Whilst the establishment of planting would be beneficial, the overall level of effect to the landscape covering the majority of the Solar PV Site would remain moderate adverse given the large extent of the landscape character area that would be altered by the Scheme. These effects are considered to be **significant**.

6.6.26 Following the establishment of the planted vegetation in Year 15 and considering the benefit of summertime leaf, the visibility of the Scheme in close range views and the wider study area would be reduced.

6.6.27 The establishment of new planting would change the composition of some residential views and would screen the Solar PV Site. All visual effects from residences will have reduced to **not significant** due to the establishment of the proposed planting. Visual effects for residents located in the study area will range between minor, negligible and no change (**not significant**) with increasing distance from the Scheme.

6.6.28 Effects on people walking on the long-distance Howden 20 walking route and local PRoW would be reduced as a result of the establishment of planting within the Solar PV Areas. Views from the route outside of the Solar PV Areas would be heavily screened as a result of the establishment of planting and the additional growth of existing vegetation. There would be a minor adverse effect that is **not significant**.

Decommissioning (2067)

6.6.29 Decommissioning would result in minor adverse to neutral effects to the county and district level landscape character areas. These effects are considered to be **not significant**.

6.6.30 During decommissioning the effects on local landscape character areas covering the Solar PV Site would be minor adverse. The enclosure provided by the new establishing planting within the Site would reduce the perception of decommissioning effects within the wider landscape. These effects are considered to be **not significant**, short term, lasting only a number of weeks in any given location.

6.6.31 The effect of decommissioning on the landscape covering the Grid Connection Corridor would be negligible adverse and therefore would be not significant.

6.6.32 Decommissioning effects on the visual amenity are likely to be similar to those temporary impacts experienced during construction of the Scheme but reduced on account of the containment provided by landscape mitigation measures including proposed vegetation, which will have reached maturity, and general landscape management measures.

Mitigation Measures

6.6.33 The landscape and visual impact assessment has, and still is, informing the iterative design process, incorporating design principles in response to policy requirements, published landscape character assessments and fieldwork analysis.

6.6.34 The Scheme design has undergone a series of design iterations to embed mitigation measures into the design during the PEI Report process. The design development will be completed during the Environmental Impact Assessment (EIA) process.

6.6.35 The Scheme will be designed to integrate with the local green infrastructure network, improving ecological and recreational connectivity across the Site. These will be detailed in the ES.

6.7 Noise and Vibration

Baseline and Context

6.7.1 **Chapter 11: Noise and Vibration, PEI Report Volume 2** presents the findings of a preliminary assessment of the potential significant effects of the Scheme on noise and vibration of the Site and surrounding area. Baseline noise monitoring was carried out to establish the existing noise

climate in the area. Sensitive receptors which have the potential to be affected by the Scheme were identified.

Assessment of Effects

6.7.2 The duration of any construction and decommissioning noise effects is considered to be temporary, short-term, with no permanent residual effect once works are completed. Core working hours during construction and decommissioning will be from 7am to 7pm Monday to Friday and 7am to 1pm on Saturday. The assessment considers that noise is generated throughout these periods, however it is noted that working hours will be shortened if working would necessitate artificial lighting and therefore the working day will be shorter in the winter months.

6.7.3 Construction and decommissioning noise levels will be controlled through implementation of the detailed CEMP and DEMP. A Framework CEMP is provided as **Appendix 2-1, PEI Report Volume 4,** and the Framework DEMP will be prepared as part of the ES.

6.7.4 Noise generated by typical construction and decommissioning activities during core work hours are **not significant**. However, the installation of cabling using HDD to avoid surface obstacles is likely to require continuous work outside the core work periods during the construction phase. Drilling activities are not predicted to exceed the noise limit during daytime, weekday evening and weekend at any receptors; however, if works cannot stop safely and extend into the night, the limit may be exceeded. As drilling locations are not yet fixed, noise calculations are based on the potential closest location to a sensitive receptor that works may occur. Noise calculations indicate one sensitive location has the potential to result in **significant** noise effects if drilling activities extend into the night-time period. The hierarchy of mitigation measures for drilling activities will ensure that drilling activity noise effects will be reduced as far as reasonably practicable. This hierarchy includes maximising the distance from drill sites to sensitive receptors and the use of acoustic fencing, if required. As such, it is anticipated that mitigation measures can be suitably adopted that noise effects due to drilling activities are considered to be **not significant**.

6.7.5 The distance between sensitive receptors and locations where high vibration generating construction and decommissioning activities will occur is such that construction induced vibration effects are **not significant**.

6.7.6 Noise impacts from construction and decommissioning traffic are anticipated to be **negligible** and **not significant**.

6.7.7 For the assessment of operational noise, the typical background noise levels at sensitive receptors have been defined from the night-time period, which provide the lowest levels. During operation, plant will operate continuously so there will not be any noticeable impulsive or intermittent characteristics from noise emissions. Predicted noise levels of operational solar plant at the nearest receptors are **not significant**. However, at some sensitive receptors, operational noise levels are identified as adverse. Consequently, all reasonable mitigation measures will be adopted to reduce operational noise at sensitive receptors. These mitigation measures will be

secured in the detailed OEMP. A Framework OEMP is to be prepared as part of the ES.

Mitigation Measures

6.7.8 Embedded mitigation includes the use of best practical means identified in the **Framework CEMP (Appendix 2-1, PEI Report Volume 4)** and the **Framework DEMP** (to be prepared as part of the ES), such as the sequential start-up of plant and vehicles rather than all together and regular plant maintenance.

6.7.9 Appropriate routing of construction and decommissioning traffic on public roads and along access tracks will be detailed in the CTMP.

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

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

6.7.12 During operation, embedded mitigation includes plant section and design layout to minimise noise at receptors, with noise generating plant located at distance from sensitive receptors, such that noise emissions are less impactful. To maintain flexibility, the Applicant has made a commitment that noise at sensitive receptors will be no higher than the noise levels that will be presented in the ES.

6.8 Socio-Economics and Land Use

Baseline and Context

6.8.1 **Chapter 12: Socio-Economics and Land Use, PEI Report Volume 2** presents the findings of an assessment of the likely significant effects on socio-economics as a result of the Scheme.

6.8.2 The Scheme has the potential to have a range of effects, some of which would be temporary whilst others would be permanent. Due consideration is given to the Scheme in terms of effects on the following:

a. Employment generation;

b. Impacts on local services and facilities, comprising local accommodation facilities;

c. Gross Value Added (GVA);

d. Public Rights of Way (PRoW); and

e. Other private and community assets (including residential properties, business premises, community facilities, visitor attractions and development land).

6.8.3 Loss of agricultural land is considered within Chapter 15: Soils and Agricultural Land, PEI Report Volume 2, and is summarised in section 6.11.

Existing Site and Land Use

6.8.4 Within the Site Boundary and the immediately adjacent area, land is mostly used for agricultural purposes, characterised by large-scale regular arable fields across several land-holdings.

6.8.5 Other existing energy infrastructure within the surrounding area includes overhead powerlines carried by pylons which extend from Drax Power Station and cross the Grid Connection Corridor and Solar PV Areas 1a and 3a; and a gas transmission pipeline which crosses Solar PV Areas 2g and 3c.

Population and Employment

6.8.6 In 2020, the resident population of the economic Study Area (the 60-minute drive time radius) was 5,051,069, having increased 4.9% since 2011.

6.8.7 The November 2022 unemployment claimant count for residents as a proportion of residents aged 16-to-64 was 2.4% in East Riding and 2.2% in Selby which is below the rate for England (3.7%).

6.8.8 Gross value added (GVA) per head is slightly lower in East Riding of Yorkshire (£20,533) compared to the average for Selby (£23,752), Yorkshire and the Humber (£21,250) and for England (£27,717).

6.8.9 The highest levels of employment in the Study Area are recorded in Health, Manufacturing and Education.

Public Rights of Way (PRoW)

6.8.10 There are no national trails or national cycle routes within the Solar PV Site or Interconnecting Cable Corridor. However, the circular recreational route of the ‘Howden 20’ (a 20-mile named ‘challenge walk’) passes along PRoW through the Solar PV Site and the Interconnecting Cable Corridor at various locations, as shown on **Figure 4** and **Figure 5.** National Cycle Route 65 intersects the Grid Connection Corridor to the north of the River Ouse crossing point, but will not be impacted as this section of cable will be installed via HDD.

6.8.11 PRoW local to the Site are shown on **Figure 5** of this NTS. There are 10 PRoW that are located entirely within the Solar PV Site or pass through the Solar PV Site and continue outside of it; and 12 PRoW which are located along or abut the Solar PV Site boundary but do not traverse it.

6.8.12 Of the 10 PRoW located within the Site Boundary, there are seven PRoW which are within or intersect the Interconnecting Cable Corridor.

6.8.13 The Grid Connection Corridor intersects three PRoW and runs alongside sections of an additional two PRoW.

Local Receptors

6.8.14 There are no residential properties within the Site Boundary. The closest properties in Gribthorpe, Spaldington and Brind are approximately 20 m from the boundary of the Solar PV Site. Due to the provision of buffers and land for landscaping and habitat enhancement, the actual distance of separation between residences and solar PV infrastructure will be greater.

6.8.15 There are residential properties within 500 m of the Grid Connection Corridor at Wressle, Barmby on the Marsh and Babthorpe, and the closest properties are approximately 20 m from the Grid Connection Corridor in Babthorpe.

6.8.16 There are no business premises within the Site Boundary. There are approximately 25 businesses within 500 m of the Site Boundary.

6.8.17 There are no schools located within 500 m of the Site Boundary. The closest educational facility to the Scheme is The Read School, located approximately 1 km south of the Grid Connection Corridor in Drax Village.

6.8.18 There are a range of community and recreational facilities within 2 km of the Scheme. There are no police or fire stations within 2 km of the Site Boundary.

6.8.19 There are no visitor attractions within 500 m of the Site Boundary.

6.8.20 At the current time there are six proposed developments that have been identified which could coincide with the Site Boundary, which are included on the list of developments presented in **Chapter 17: Cumulative Effects and Interactions, PEI Report Volume 2**.

Assessment of Effects

Construction

6.8.21 The estimated construction period is expected to last a minimum of 24 months. Therefore, likely effects will be of a medium-term temporary nature. Although these jobs are temporary, they represent a positive economic effect for a substantial period. It is estimated that the Scheme will require a peak workforce of 400 full-time equivalent (FTE) staff per day, and create an average of 320 gross FTE jobs on-site per day during the construction period (assumed to be equivalent to 320 FTE jobs per annum). Of these construction jobs, 45% are expected to be taken up by people living within 60 minutes travel time of the Site. Taking this into account, the impact of construction employment generation in the Study Area has been assessed as temporary low beneficial, which when applied to a low sensitivity population, results in a short-term temporary **minor beneficial** effect. This is considered to be **not significant**.

6.8.22 Analysis of the hotel, bed and breakfast and inns accommodation sector has been undertaken to assess the likely capacity against the demand from the potential peak construction workforce. It indicates, considering existing seasonal demand and typical occupancy, that capacity is sufficient, and the workforce can be accommodated within existing provision within a 30-minute drive time radius of the Site. Given this, there would be **no effect** on

the hotel, bed and breakfast and inns accommodation sector arising from the Scheme.

6.8.23 The impact of direct GVA generation from the construction phase on the economy within the Study Area has been assessed as a temporary **minor beneficial** effect on both a local and regional scale. This is considered **not significant**.

6.8.24 Changes to journey times, local travel patterns, and certainty of routes for users could arise from any temporary diversions or impacts on PRoW. The Scheme has been designed so that the PRoW within the Solar PV Site remain open along their existing routes during the construction, operation and decommissioning phases of the Scheme. Along the Grid Connection Corridor, the PRoW associated with the crossing points of the Rivers Ouse and Derwent will be crossed via HDD and no temporary track crossing will be installed over these features; consequently there will be no impediment to the use of these PRoW at any stage of the Scheme. The same is true for where Featherbed Lane (PRoW EASTB17) is crossed by the Interconnecting Cables. Other PRoW within the Grid Connection and Interconnecting Cable Corridors are expected to remain open during construction (managed through traffic management measures).

6.8.25 Due to the limited scale of impacts upon PRoW, these effects are assessed to be very low adverse, which results in a **negligible** effect. This is considered to be **not significant**.

6.8.26 Taking into account the results of the air quality, noise, traffic and visual assessments, there are no residents, businesses or community facilities that would likely experience a significant effect on their amenity during construction from effects acting in combination. Roads bordering the Site may be used by construction traffic which could impact on travel between settlements and cause community severance. Overall magnitude of impact is assessed to be low, given no direct land take, no amenity impacts and some connectivity impacts. This results in a **minor adverse** effect, which is considered to be **not significant**.

Operation

6.8.27 The jobs created by the operational phase of the Scheme would offset the agricultural jobs lost as a result of the Scheme. Therefore, it has been assessed that there will be **no effect** with regard to operational employment associated with the Scheme.

6.8.28 Given that there are no expected closures or diversions of PRoW and that new Permissive Paths will be available, the impact on users of PRoW during the operational stage is assessed to be low beneficial, resulting in a **negligible beneficial** effect. This is considered **not significant**.

6.8.29 Taking into account the result of the air quality, noise, traffic and visual assessments, there are no residents, businesses or community facilities that would likely experience a significant effect on their amenity during operation from effects acting in combination. Predicted operational traffic levels are so low that they have been scoped out of assessment, as agreed by the Planning Inspectorate. There is therefore expected to be no effect on

community connectivity. Overall it is assessed that there would be **no effect** on private and community assets during the operation phase.

Decommissioning

6.8.30 The estimated duration of the decommissioning period is expected to be less than or similar to that of the construction period and the number of construction staff required is assumed to be the same as for construction. The decommissioning effects are therefore assessed to be the same as those for construction phase.

Mitigation Measures

6.8.31 Mitigation measures are embedded within the Scheme to reduce other construction and operational effects (relating to noise, air quality, transport and landscape), which in turn will mitigate the effects on the local community and existing facilities from a Socio-Economic and Land Use perspective. The relevant mitigation measures are set out in the respective sections of this NTS.

6.8.32 The Scheme has been designed so that the PRoW within the Solar PV Site remain open along their existing routes during the construction, operation and decommissioning phases of the Scheme. The PRoW will also be buffered from the perimeter fencing, with fencing being installed a minimum distance of 20 m either side of the centre of the PRoW where solar infrastructure lies to both sides (creating a 40 m wide corridor between the fence lines), or 15 m if solar infrastructure is to one side only. There will be no impacts to the PRoW associated with the crossing points of the Rivers Derwent and Ouse, and along Featherbed Lane due to the use of HDD.

6.8.33 The Scheme proposes two permissive paths reinforcing the existing PRoW network in the local area. These paths, which may also include bridleway, will increase local accessibility and connectivity and provide circular routes for local walkers and horse riders to use. These have been included as embedded mitigation (but are not essential mitigation) and their potential routing is shown on **Figure 5** of this NTS.

6.9 Transport and Access

Baseline and Context

6.9.1 **Chapter 13: Transport and Access, PEI Report Volume 2** reports the findings of an assessment of the likely significant effects on traffic and transport as a result of the Scheme during construction and decommissioning. Operational impacts have been scoped out due to the low number of trips associated with the maintenance and operation of the Scheme.

Strategic Highway Network

6.9.2 The M62 is a dual carriageway road that has three lanes heading in each direction with hard shoulder separation, and connects Liverpool to Hull via Bradford, Leeds and Wakefield. The road is managed by National Highways and provides a link for onward strategic journeys. The M62 Junction 37 is the closest Junction to the Site.

6.9.3 The M62 becomes the A63 east of Junction 38, and whilst still managed by National Highways it becomes a two-lane dual carriageway, without a hard shoulder. The route then continues east towards Hull.

Local Highway Network

6.9.4 The A63 is a single carriageway road which links Hull to Leeds via Selby. To the west of the M62 Junction 37, the A63 is a single carriageway with a 40-mph speed limit applied.

6.9.5 The A614 is a single carriageway road running to the east of the Site Boundary. The road provides access to the A163, and Spaldington Lane.

6.9.6 The A645 runs from Crofton in the east to Airmyn Grange where it intersects with the A614, after passing Drax Power Station.

6.9.7 The B1228 runs from the north near York southwards to Howden and runs within the Site Boundary. The road is a single carriageway with a speed limit of predominantly 40 mph.

6.9.8 Wood Lane runs alongside Solar PV Areas 3a, 2c and 2b connecting Station Road in the west to Tottering Lane in the east and is a singular lane (around 3 metres wide.

6.9.9 Tottering Lane provides access to Solar PV Areas 1a, 1b, 1c, 1d and 1e travelling from Willitoft Road and Wood Lane to Bell Lane for 3 km. The road is a single lane, around 4 m wide. It is noted that the roadside verges of Tottering Lane are a Local Wildlife Site, which is further discussed in **Chapter 8: Ecology, PEI Report Volume 2**

6.9.10 Ings Lane is a single carriageway no through road that travels through the village of Spaldington and is approximately 6 m wide. Following the last residential house to the east of the settlement, the road becomes single carriageway (3 m wide) with grass verges.

6.9.11 Willitoft Road forms a junction with the B1228 in the north traveling southeast to the Tottering Lane/Wood Lane junction for 2.8 km. The road is a single lane (3.5 m wide).

6.9.12 Spaldington Lane runs in between Solar PV Areas 2e and 2f, travelling from the B1228 to the A614 in the east for approximately 4 km. The road is a single carriageway.

6.9.13 Brind Lane travels for 3 km from Wood Lane to the B1228 (also named Wood Lane) in the west, providing access to the Site. The road is the width of a single lane (3 m wide) with verges on either side.

6.9.14 Rowlandhall Lane is a single lane that runs north from Wood Lane for a distance of approximately 2 km to Newsholme Road in the south and is approximately 3 m wide. The road runs within the Site Boundary and provides access to Solar PV Areas 3a, 3b and 3c.

6.9.15 Bell Lane is accessed from the A163 and heads southbound for approximately 700 m to become Tottering Lane. The road runs through Foggathorpe residential area, where the road is two-way (around 6 m

wide). Outside of Foggathorpe, the road becomes a single lane road (around 4.5 m wide) with grass verges on either side.

6.9.16 Newsholme Road will provide potential access to the Site from the south via the A63. The road is residential and is approximately 5 m wide, with on street parking observed.

6.9.17 New Road provides access to Drax Power Station from the A645. The road is a single carriageway route approximately 6.7 m wide.

6.9.18 Main Street runs south from the A63 into the village of Hemingbrough. The road is a single carriageway with footways either side, with cars parking along the road near to residential properties.

Walking Facilities

6.9.19 Due to the rural location of the Site, there is limited footway provision in the surrounding area. Footways are limited to the settlements that are within the vicinity of the Scheme, including Spaldington, Foggathorpe and Hemingbrough.

6.9.20 There are a number of PRoW and existing permissive routes in the area crossing fields and running alongside roads and rivers. Some of these PRoW interact with the Site Boundary, as show in **Figure 5,** and discussed in section 6.8.

Cycling Facilities

6.9.21 National Cycle Route 65 passes through Howden to the south of the Solar PV Site and cuts through the Grid Connection Corridor on the northern bank of the River Ouse (noting that this route will be unaffected by construction operations due to the use of HDD). The route continues west towards and Selby, and heading east following the River Ouse towards Barmby on the Marsh, Brough and Hull beyond.

6.9.22 There are no other on- or off-carriageway dedicated/ marked cycling facilities within the immediate vicinity of the Site Boundary, but due to the rural nature of the local roads, it is possible that roads could be attractive to workers wishing to cycle to and from the Site.

Equestrian Facilities

6.9.23 There are some formal Bridleways in the vicinity of the Study Area (including EASTB14, EASTB17, and SPALB08) and some of the surrounding roads are generally lightly trafficked and could be used by equestrians on this basis.

Public Transport Facilities

6.9.24 The closest bus stops to the Site Boundary are located along the A163, A63 and in the village of Hemingbrough. These stops are serviced by the 1, 3, 4a, 18, 55 and 358 routes, but services are not frequent. This low frequency means that the Scheme is not considered accessible by bus. In addition, workers are expected to be travelling to the site before 07:00 and leaving the site after 19:00, when there are very few services.

6.9.25 The nearest railway stations to the Site are Howden Station, which is located approximately 750 m from Solar PV Area 3c to the south of the Solar PV Site, and Wressle Station which is located approximately 500 m from the Grid Connection Corridor at the closest point. The stations are at much greater distances from other parts of the Site (e.g. over 6 km from Solar PV Areas in the north of the Site. Additionally, usage would be fairly limited due to a lack of footways and other pedestrian facilities.

Assessment of Effects

6.9.26 The assessment shows that following the implementation of embedded mitigation, the construction phase adverse impacts in terms of Construction Traffic Increase, Severance, Pedestrian Amenity, and Fear & Intimidation, is considered to be moderate at the following locations:

a. Ings Lane – east of Spaldington;

b. Willitoft Road – north of Ings Lane junction;

c. B1228 – between B1230 and Brind Lane junctions.

6.9.27 Although the actual increase in traffic levels at these sites due to the Scheme is relatively small, as these routes currently experience low baseline traffic numbers, this results in high percentage increases and **significant** effects being determined.

6.9.28 All other sites assessed were determined to have a **not significant** effect in terms of Construction Traffic Increase, Severance, Pedestrian Amenity, and Fear & Intimidation.

Mitigation Measures

6.9.29 The embedded design mitigation measures referred to below have been incorporated into the Scheme design for the construction and decommissioning phases. These measures would be secured through the DCO, primarily by a detailed Construction Traffic Management Plan (CTMP) including:

a. Providing sufficient cycle parking spaces on-site to encourage construction staff to travel to/from the site by bicycle;

b. Implementing a shuttlebus service to transfer non-local staff to/ from local worker accommodation, to reduce vehicle trips on the surrounding highway network;

c. Encouraging local construction staff to car share to reduce single occupancy car trips, by promoting the benefits of car sharing such as reduced fuel costs and by providing dedicated parking spaces for those cars sharing nearer to the compounds;

d. To prevent nuisance and potential obstruction/restriction of free traffic flows caused by vehicles parked around the Site Boundary, limited (but sufficient) on-site car parking to accommodate the expected parking demand of construction staff using private vehicles to travel to and from Site (commuting) will be provided within the Site Boundary, and parking on public roads within a defined radius of the Site will not be permitted;

e. To reduce the potential impact of HGV deliveries, the arrival and departure times will be managed through a Delivery Management System as to minimise the number of HGVs travelling during the network peak hours. HGV movements will instead occur during specific times;

f. Implementation of a Travel Plan to reduce the volume of construction staff and employee trips to the Site;

g. Construction vehicles will be required to use only approved access routes to the Site;

h. Deliveries to the Site will be recorded. The source of the delivery, vehicle weight, registration number, date and time will be stored on the operator's system;

i. Restricting HGV movements to certain routes i.e. via the A614 and A63, and prevention of movements through Howden, as shown in **Figure 13-3, PEI Report Volume 3**;

j. The HGV routing plan would be distributed to all drivers during their induction;

k. Signage will be used at the main junctions to ensure that all HGV traffic relating to the Scheme travel in the appropriate directions;

l. In the interests of highway safety, wheel cleaning facilities will be installed on-site from the start of the construction phase. All HGVs leaving the Site will be required to wheel wash. The need for this measure would be periodically reviewed throughout the construction phase;

m. A 24-hour contact name and number will be displayed on a notice board at Site entrances, on the Applicant's website for members of the public to contact should they have any issues regarding construction traffic; and

n. Maintaining access to PRoWs during the construction phase, or otherwise providing temporary diversion routes if required (see Table 3 7: Socio-Economics and Land Use for further details);

o. Managing areas where the Interconnecting and Grid Connection Cable Corridors cross existing PRoW or local access roads, including by maximising visibility between construction vehicles and other users (pedestrians and road users), implementing traffic management e.g. advanced signage to advise other users of the works, as well as manned controls at each crossing point (marshals/ banksmen), with a default priority that construction traffic will give-way to other users.

6.9.30 The embedded design mitigation measures referred to below would be implemented during the operational phase. These measures will be secured through the DCO:

a. Providing suitable points of access for operational vehicles, including along the B1228, Spaldington Lane and Tottering Lane;

b. Converting the internal construction routes to maintenance routes, to allow operational vehicles to access all areas of the Site via the proposed access points during the operational phase;

c. Maintaining access to all existing PRoW within the Solar PV Site; and

d. Controlling areas where the internal maintenance route crosses any existing PRoW or local access roads (such as providing gates), permitting only operational traffic to utilise these internal routes within the Site. Operational traffic should give-way to other users (pedestrians and road users) when utilising the crossing points. Visibility will be maximised between operational vehicles and other users, with warning signage provided if required.

6.9.31 As the majority of mitigation that seeks to reduce the impact of vehicles will be embedded, it is unlikely that the residual effects can be mitigated further, however options will be considered post consultation where practicable. If it is considered that these options would not mitigate the effects beyond what has been secured by way of the embedded mitigation, these options would not be taken forward.

6.9.32 The residual effects therefore remain the same as stated in the preliminary assessment, with potentially significant adverse effects at Ings Lane – east of Spaldington, Willitoft Road – north of Ings Lane junction, and the B1228 – between B1230 and Brind Lane junctions, during construction and decommissioning, with no likely significant effects during operation.

6.10 Human Health

Baseline and Context

6.10.1 **Chapter 14: Human Health, PEI Report Volume 2** reports the findings of an assessment of the likely significant effects on human health and wellbeing as a result of the Scheme during construction, operation and decommissioning.

6.10.2 The Study Area was defined to include human health features likely to be at risk from possible direct and indirect impacts that might arise from the Scheme and comprises the following wards:

a. Howdenshire in East Riding of Yorkshire;

b. Howden in East Riding of Yorkshire;

c. Camblesforth and Carlton in the former Selby District; and

d. Derwent in the former Selby District.

6.10.3 As set out in **Chapter 1: Introduction, PEI Report Volume 2**, on 1 April 2023 North Yorkshire County Council and its six constituent District Councils, including Selby District Council, were merged to form the new Unitary Authority of North Yorkshire Council. The wards of Camblesforth and Carlton, and Derwent therefore now lie in the administrative area of North Yorkshire Council. These wards are still considered within the Study Area (and, where Local Authority-level data is presented in the baseline, data is still presented for Selby District, as the data sets were produced prior to this change occurring).

6.10.4 According to 2020 mid-year population estimates, the total population of the Study Area in 2020 was 32,441 (the population in Howden was 5,277; in Howdenshire was 15,283; in Camblesforth and Carlton was 6,172; and in Derwent was 5,709).

6.10.5 In 2020, the average proportion of residents of working age (16-to-64-year-olds) in the Study Area was 61.2%. This is lower than the regional average for Yorkshire and the Humber (62.1%) and England (62.3%).

6.10.6 The average proportion of residents aged 65 and over in the Study Area is 23.0%, which is higher than the rates recorded in Yorkshire and the Humber (18.9%) and England (18.5%). Local data projects that the over-85 age category is projected to increase at a faster rate in the Study Area than across England as a whole.

6.10.7 The economic activity rate (amongst 16-to-64-year-olds) is 80.0% in East Riding, above that in Selby (78.1%), Yorkshire and the Humber (77.3%) and England (78.8%).

6.10.8 East Riding of Yorkshire is the 217th most deprived local authority of 317 districts in England (where 1 is the most deprived). Selby is the 252nd most deprived local authority. Regarding the health deprivation domain, East Riding of Yorkshire is the 200th most deprived local authority and Selby is the 218th most deprived local authority.

6.10.9 Based on 2021 Census data for self-assessment of health, 4.4% of residents in the Study Area reported that they were living in ‘bad’ or ‘very bad’ health. This rate is lower than in Yorkshire and the Humber (5.8%) and England as a whole (5.2%).

6.10.10 The proportion of residents within the Study Area that experience limitations to their daily activities and has lasted at least 12 months (self-assessed) a little or a lot is 16.8%. This is slightly lower than the proportions in Yorkshire and the Humber (18.6%) and England as a whole (17.3%).

6.10.11 Average life expectancy at birth for males in the Study Area is 80.9 years, slightly higher than the average for Yorkshire and the Humber (78.4) and England (79.5). Average life expectancy at birth for females in the Study Area is 84.1 years, which is also higher than the averages for Yorkshire and the Humber (82.2) and England (83.2).

6.10.12 The nearest hospital (with an accident and emergency department) to the Site Boundary is York Hospital, which is approximately 21 km to the north-west of the Solar PV Site.

6.10.13 There are three schools located within 2 km of the Solar PV Site (Howden School, Howden Church of England Infant School and Howden Junior School) and two schools located within 2 km of the Grid Connection Corridor (Barmby on the Marsh County Primary School and the Read School in Drax).

6.10.14 There are no police or fire stations within 2 km of the Site Boundary. The nearest are Howden Police Station and Howden Fire Station, both located approximately 2.5 km south-east of the Solar PV Site.

Assessment of Effects

6.10.15 The Scheme has the potential to have a range of effects. For the purpose of **Chapter 14: Human Health, PEI Report Volume 2**, due consideration is given to the Scheme in terms of the following:

a. Effects on healthcare services/infrastructure;

b. Effects on other social infrastructure, including schools and community facilities;

c. Noise and vibration (see section 6.7);

d. Air pollution, dust and odours (see section 6.12);

e. Access to open space and active travel;

f. Access to employment and training; and

g. Social cohesion and neighbourhoods.

6.10.16 The assessment does not identify any significant impacts on access to healthcare services for any population group. The effect of extra demand on healthcare services from construction workers and increased traffic associated with the construction and decommissioning phases of the Scheme is assessed to be **minor adverse**. This is considered not significant. During operation, the effect is assessed to be **negligible**, which is also considered **not significant**.

6.10.17 The increase in traffic flows during the construction and decommissioning of the Scheme is assessed to be low, and therefore the potential impact on access to other social infrastructure is considered to be **minor adverse**, which is considered not significant. During operation this effect is considered to be **negligible**, which is considered **not significant**.

6.10.18 The likely effect on human health arising from impacts on air quality during the construction and decommissioning phases is assessed to be **negligible**. It is considered that there will likely be **no effect** on human health associated with air quality impacts during the operational phase of the Scheme. This is considered **not significant**.

6.10.19 Local noise and vibration impacts are likely to be minimal (section 6.7). Overall, the likely effects on human health arising from impacts on noise and vibration during the construction, operation and decommissioning phases are assessed to be **minor adverse**, which are considered **not significant.**

6.10.20 The Scheme has been designed to have minimal to no impact on PRoW. Overall, the likely effects on human health arising from impacts on access to open space and active travel during the construction and decommissioning phases are assessed to be **minor adverse**, which are considered **not significant**.

6.10.21 The provision of permissive paths and negligible additional traffic flows during the operation phase are expected to result in a **negligible beneficial** effect on access to open space and active travel during the operation of the Scheme, which is considered **not significant**.

6.10.22 Section 6.8 sets out the anticipated increases in employment during the construction phase, these are assessed as having a **minor beneficial** effect on access to employment and training, which is considered **not significant**.

6.10.23 Increased traffic flows and severance effects during the construction and decommissioning phases may inhibit local residents' ability to access employment and training. This results in a **minor adverse** effect, which is considered **not significant**.

6.10.24 During operation, the likely effect on human health arising from impacts on access to employment and training is assessed to be **negligible**, which is considered not significant.

6.10.25 Based on information relating the traffic flows and potential severance set out in section 6.9, the construction and decommissioning phases of the Scheme are assessed to have a **minor adverse** effect on social cohesion and neighbourhoods, which is considered **not significant**. During operation this effect is assessed to be **negligible**, which is also considered **not significant.**

6.10.26 The likely effect on human health related to flood risk during the construction, operation and decommissioning phases of the Scheme is assessed as **minor adverse**, which is considered **not significant**.

6.10.27 The likely effect on human health arising from impacts on landscape and visual amenity during the construction phase and operational phase of the Scheme is assessed to be **minor adverse**, which is considered **not significant**.

Mitigation Measures

6.10.28 No mitigation or enhancement measures are required with respect to human health effects arising from the Scheme, due to no significant adverse effects associated with human health being identified.

6.10.29 However, although not required to mitigate the effects of the Scheme, it is noted that Permissive Paths as shown on **Figure 4** will enhance and reinforce the current PRoW network. These routes have been approved by the PRoW team at East Riding of Yorkshire Council.

6.11 Soils and Agricultural Land

Baseline and Context

6.11.1 **Chapter 15: Soils and Agricultural Land, PEI Report Volume 2** presents the findings of an assessment of the likely significant effects on soils and agricultural land as a result of the Scheme. The assessment is based on information obtained to date and the current design for the PEI Report assessment (**Figure 4** of this NTS).

6.11.2 The land within the Site Boundary is mainly agricultural land primarily in arable production interspersed with areas of pasture, trees, hedgerows and farm access tracks. The woodlands, other 'green' land not in agricultural

use, and land which has been already developed, is considered to be non-agricultural.

6.11.3 Agricultural Land Classification (ALC) is the standard method for classifying agricultural land in England and Wales based on the type and level of agricultural production it can potentially support. The best quality agricultural land (Grades 1, 2 and Subgrade 3a) is known as Best and Most Versatile (BMV) and is given a greater level of protection in planning policy than lower quality, non-BMV, land (Subgrade 3b and Grades 4 and 5).

6.11.4 The baseline ALC and descriptions of soil types for the PEI Report were determined using a mixture of low density field survey and desk-based study. Further soil and ALC surveys will be undertaken during Spring/Summer 2023 to increase the accuracy of the data for the ES.

6.11.5 The land within the Site Boundary mainly comprises non-BMV agricultural land (76.1%) with 22.4% ha of BMV agricultural land. For the Solar PV Site alone, these figures are 78.8% non-BMV and 20.0% BMV. The remaining land is non-agricultural. The non-BMV land is all classed as Subgrade 3b (moderate quality) apart from a small area of Grade 4 (poor quality) land in Solar PV Area 1e.

6.11.6 The dominant soil association (covering 86.3% of the Site Boundary) is the Foggathorpe 2 association comprising seasonally wet clay soils which are considered to be of medium sensitivity. The remaining soils are a combination of clay, loamy and sandy soils often seasonally wet; the sensitivity of these soils ranges from medium to low. Within the Solar PV Site, the soil survey showed localised variation in soil type to occur where surface layers of fine sandy material occur over slowly permeable clay. These deposits can be identified (both in the field and on arial imagery) from the topography as they form ridges/rises. These were mainly recorded in the south of the survey area in Solar PV Areas 2g and 3c. The presence of these soil types is associated with the presence of better quality agricultural land.

6.11.7 The soil survey also identified a small discrete deposit of deep humified fen peat on floodplain land in Solar PV Area 1e adjoining the River Foulness (corresponding to the area of Grade 4 land). This ecologically valuable soil type is classified as very highly sensitive.

15.1.1 Grazing by sheep is the Applicant’s preferred option for the management of all suitable grassland within the operational Solar PV Site (including land beneath and between the solar PV panels, and areas of grassland habitat creation). This option is therefore being explored and there are no known reasons that would prevent such use. However, should grazing not be possible in some or all areas of the Solar PV Site, the Applicant has committed to the management of grassland by hay cropping using a mini-baler or similar where required. The land would therefore remain in productive agricultural use. Sheep grazing of solar farms (including sites utilising tracker panel technology) is commonly undertaken both in the UK and abroad. As grazing maintains the grass at a low level without the need for/cost of machinery, it is possible for solar farms to use less agriculturally productive breeds (such as heritage breeds) and to graze at a lower density

than might be required if the sole aim of grazing was a high level of agricultural productivity/revenue.

Assessment of Effects

6.11.8 The assessment considered the impacts to agricultural land in terms of the scale of loss of agricultural land and whether this loss is considered to be temporary or permanent, along with consideration of land quality (ALC grading).

6.11.9 The impacts to soil resources were assessed in terms of loss of soil functions/volumes and soil-related features such as water filtration, carbon storage and sequestration, and supporting biodiversity. The assessed impacts to soil resources therefore also reflect the ability of the soil to support ecosystem services.

6.11.10 Within the Grid Connection and Interconnecting Cable Corridors, the impacts upon soils and agricultural land during construction and operation will be temporary as industry standard practices for good soil and land management would be applied, and the land would be restored to its previous condition at the end of construction/maintenance works. It is noted that where possible the Grid Connection and Interconnecting Cables will be routed along roads and roadside to avoid impact to agricultural land. The impacts are assessed as **neutral to slight adverse** and the effects are **not significant.**

6.11.11 Across the majority of the Solar PV Site, the loss of agricultural land would be short-term temporary as the land would be restored to its previous ALC status after construction, and be returned to agricultural production, albeit changing from arable farming in some Solar PV Areas. The impacts are assessed as **neutral to slight adverse** and the effects are **not significant**.

6.11.12 For other elements within the Solar PV Site apart from the solar PV panels (such as the Field Stations, and access tracks) the loss of agricultural land will be long-term reversible for the operational life of the solar farm, as the land they occupy will be reinstated to agricultural use on decommissioning when the hard standing is removed, and the stored soils replaced. The good practice management of soils will ensure that there will be no reduction of soil functions or soil volumes that would restrict the quality of the agricultural land upon reinstatement. The long-term reversible losses of 0.5 ha of Grade 1/2 (BMV), 3.7 ha of Subgrade 3a (BMV) and 14.8 ha of Subgrade 3b (non-BMV) land were therefore assessed as sight adverse to neutral and **not significant**.

6.11.13 The removal of land within the Solar PV Site from agricultural use to create areas of wildlife habitat and landscaping, such as new scrub and woodland planting and the Wetland Wildlife Zone is considered to be permanent as although these areas may be returned to agricultural use after decommissioning, it is possible that they may be considered too ecologically valuable for that to happen. It is also noted that some or part of the Wetland Wildlife Zone may remain in agricultural use during operation, but as the management practices for this area are currently not known, permanent removal from agriculture is assumed. The criteria set out in the IEMA guidance result in any permanent loss of Grade 1 or Grade 2

agricultural land being classed as significant regardless of the scale of that loss. Therefore for land graded as Grade 2 (very good quality) the impacts were assessed as large adverse and the effects are **significant**. For the loss of Subgrade 3a (good quality) and Subgrade 3b (moderate quality) land, the impacts were assessed as large to moderate adverse and the effects are **significant**. For the Area of Grade 4 (poor quality) land the loss is assessed as slight adverse and **not significant**. The loss of agricultural land is balanced by the significant benefits to ecology which are predicted to occur as a result. Habitat enhancement measures will be further described within the ES.

6.11.14 As described in paragraph 4.4.3, the Grid Connection Substations may be retained after decommissioning, and therefore the loss of 3.2 ha of non-BMV (Subgrade 3b) land to the Grid Connection Substation compounds and their associated accesses is considered to be permanent. The loss was assessed as slight adverse and **not significant**.

6.11.15 Based upon the agreed design for the PEI Report and the available ALC data, the permanent loss of agricultural land (all grades) within the Solar PV Site to habitat creation and the Grid Connection Substations is predicted to be 85.7 ha, this equates to 0.04% of the total available agricultural land in the East Riding of Yorkshire and 0.03% of the total available agricultural land in the East Riding of Yorkshire and the former Selby District. The total loss of BMV land (40 ha) equates to 0.02% of the total available BMV land in the East Riding of Yorkshire and 0.02% of the total available BMV land in the East Riding of Yorkshire and the former Selby District.

6.11.16 The total long-term reversible loss of agricultural use due to above ground solar PV infrastructure requiring hardstanding is predicted to be 19.0 ha this equates to 0.008% of the total available agricultural land in the East Riding of Yorkshire and 0.006% of the total available agricultural land in the East Riding of Yorkshire and the former Selby District. The total loss of BMV land (4.2 ha) equates to 0.002% of the total available BMV land in the East Riding of Yorkshire and 0.002% of the total available agricultural land in the East Riding of Yorkshire and the former Selby District.

6.11.17 During construction of the Solar PV Site, the impacts to the seven medium to low sensitivity soils identified within the Site Boundary will be temporary as industry standard practices for good soil and management would be applied. The impacts are assessed as **neutral to slight adverse** and the effects are **not significant**. As no solar infrastructure will be located within the area of high sensitivity peat soils **no impacts** to these soils will occur.

6.11.18 During operation there is the potential for beneficial effects to soil resources within the Solar PV Site due to the conversion from arable farming to grassland. The effects include improvements to soil structure (and consequent increased permeability and increased resilience to erosion) and increases to soil carbon content. The impacts of the conversion are predicted to be at least **moderate beneficial**, resulting in a **significant beneficial effect**.

6.11.19 Impacts to both agricultural land and soil resources as a result of maintenance operations within the solar farm and to the Grid Connection

and Interconnecting Cables would be of short duration and highly localised. Impacts are therefore assessed as slight adverse to neutral and **not significant.**

6.11.20 On the basis that the decommissioning effects are expected to be similar to or of a lesser magnitude than the construction effects, it was agreed with the Planning Inspectorate (through Scoping) that decommissioning effects did not need to be assessed.

Mitigation Measures

6.11.21 Embedded mitigation measures include the use of standard industry good practice measures as identified in the Framework CEMP (**Appendix 2-1, PEI Report Volume 4**), these include measures such as ensuring soils are handled in appropriate weather conditions; no mixing of topsoil with subsoil, or of soil with other materials; and seeding of stockpiles anticipated to be in place for longer than six months. A Framework Soil Management Plan will also be submitted with the ES.

6.11.22 Additionally, the Scheme has been designed, as far as possible, to avoid and minimise impacts to BMV land through the initial site selection process and placement of above ground solar PV infrastructure (apart from solar PV panels) onto non-BMV agricultural land where possible. Where BMV land cannot be avoided, the use of ground screw (minimally invasive) foundations will be considered. The solar PV frames are directly driven into the ground, and therefore do not require foundations and result in a very small physical footprint on the soil.

6.11.23 Impacts to agricultural land will also be avoided by routing of the Grid Connection and Interconnecting Cables along the roadside verges where practicable. In agricultural land the cables will be routed at the edges of fields where possible to minimise impacts.

6.11.24 Whilst the permanent and long-term reversible loss of agricultural land to above ground solar PV infrastructure cannot be avoided or mitigated as this infrastructure is essential to the Scheme, further soil surveys planned for 2023 will accurately define the location of the different ALC grades within the Solar PV Site allowing future iterations of the design to further avoid BMV land where possible. This will further mitigate impacts to BMV land where possible, although therefore has the potential to increase the area of Subgrade 3b (non-BMV) agricultural land impacted.

6.11.25 No additional mitigation beyond the embedded measures are considered necessary as the loss of land to habitat enhancement is balanced by the beneficial effects to ecology.

6.12 Other Environmental Topics

6.12.1 **Chapter 16: Other Environmental Topics, PEI Report Volume 2** presents the findings of the preliminary impact assessment on the following topics which are covered in the sections below:

a. Air Quality;

b. Glint and Glare;

c. Ground Conditions;

d. Major Accidents or Disasters;

e. Telecommunications, Television Reception and Utilities;

f. Materials and Waste; and

g. Electromagnetic Fields.

Air Quality

6.12.2 This section considers the potential impacts and effects of the Scheme on air quality during construction, operation and decommissioning. The assessment relates to dust generation, and additional road traffic and plant emissions during the construction and decommissioning phases. The potential for operational impacts is also addressed.

6.12.3 The adoption of good site practice to control dust will be incorporated into the CEMP. A Framework CEMP is presented as **Appendix 2-1, PEI Report Volume 3.** The list of recommended mitigation measures is extensive, and includes measures such as visual dust inspections, ensuring plant are as far from receptors as possible, and management of traffic attending site. Dust generation during construction and decommissioning will be short-term and temporary and is not anticipated to create significant effects on local air quality with the mitigation measures in place. Air quality impacts are therefore expected to be negligible and **not significant**.

6.12.4 Emissions from Non-Road Mobile Machinery (NRMM) such as excavators will be temporary and localised and controlled through best-practice mitigation measures (such as prioritising electric plant where feasible and not leaving engines idling), and are expected to be **not significant**. The increase in traffic on the local road network associated with construction vehicles is anticipated to be below the threshold at which an air quality assessment is required.

6.12.5 Potential impacts on local air quality arising from the operation of the Scheme are considered to be negligible and **not significant**.

Glint and Glare

6.12.6 Glint and Glare are essentially the unwanted reflection of sunlight from reflective surfaces. Solar PV panels are designed to absorb as much light as possible and not to reflect it. However, Glint can be produced as a reflection of the sun from the surface of the solar PV panel causing a momentary flash of light; and Glare is the receipt of a bright light over an extended or continuous period of time.

6.12.7 Throughout and following statutory consultation, the Scheme design may be revised and the parameters for the PV arrays refined to respond to stakeholder comments. Therefore, a full assessment of Glint and Glare will be presented in the ES upon finalisation of the design for the DCO Application.

6.12.8 At this stage it is not expected that there would be any significant effects from Glint and Glare. This is because, if Glint and Glare effects are

identified during the design progresses, they can be relatively easily mitigated through a number of measures including for example adjusting the position of solar PV panels, or vegetation planting to remove the line of site and risk of Glint and Glare. Therefore, glint and glare effects are anticipated to be **not significant**.

Ground Conditions

6.12.9 A Preliminary Risk Assessment (PRA) (**Appendix 16-2, PEI Report Volume 4**) identifies and evaluates potential land quality risks and development constraints associated with the Scheme. The key risks have been identified in the offsite areas surrounding the former Breighton Airfield, historical landfill sites and current Drax Power Station.

6.12.10 Given the proposed Scheme, the sources identified, and the nature of the likely exposure to current and future human health receptors at the Site, the risk to human health is considered to be very low to moderate / low. Risks to controlled waters have been identified as up to moderate, considering the presence of a former airfield and historical landfill sites adjacent to the Site.

6.12.11 A number of embedded environmental design and management measures will be employed as standard best practice to minimise impacts to both human health and controlled waters during the construction and decommissioning phases of the Scheme. These are described in Framework CEMP included as **Appendix 2-1, PEI Report Volume 4** and include measures such as preparation of an Emergency Spillage Action Plan and staff awareness of how to implement these.

6.12.12 The PRA also recommends additional mitigation measures, including limited intrusive site investigation and Generic Quantitative Risk Assessment to confirm the findings of the assessment.

6.12.13 After mitigation (embedded and additional), it is expected that the risk to human health and controlled waters will be **not significant**.

Major Accidents or Disasters

6.12.14 This section provides a description of the potential effects of the Scheme on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the Scheme. “Accidents” are an occurrence resulting from uncontrolled developments in the course of construction, operation and decommissioning (e.g. a major emission, fire or explosion). “Disasters” are naturally occurring extreme weather events or ground related hazard events (e.g. subsidence, landslide, earthquake).

6.12.15 An initial exercise was undertaken to identify all possible major accidents or disasters that could be relevant to the Scheme, including floods, fire, road accidents, utilities failure and plant disease. Major accidents or disasters with little relevance in the UK, such as volcanic eruptions, were not included.

6.12.16 By their very nature, major accidents and disasters have the potential to lead to moderate or major adverse effects, irrespective of the Scheme. Therefore, the focus is on prevention and response planning to reduce any additional risk or effect of this happening which may arise as a result of the Scheme. This exercise is underway and will remain on-going through design development and consultation with relevant statutory consultees. However, at this stage, it is not expected that there is a significant risk of major accidents and disasters occurring during construction, operation or decommissioning as a result of the Scheme.

Telecommunications, Television Reception and Utilities

6.12.17 This section summarises the effects of the Scheme on telecommunication, infrastructure, television reception and existing utilities.

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

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

6.12.20 The potential exists for utilities to be affected during the construction of the Scheme through inadvertent damage caused as a result of excavation and engineering operations. This will be addressed through a number of embedded mitigation measures such as locating the Scheme outside of utilities protected zones, using ground penetrating radar before excavation to identify any unknown utilities, and ensuring adequate clearances are in place when plant and equipment is being moved beneath the overhead lines. With embedded mitigation in place, it is not expected that there will be any adverse effects. The application of embedded mitigation would reduce the likelihood of effects on utilities during construction. Therefore, no adverse effects are expected during construction. Additionally, the embedded mitigation measures used during construction would also apply during decommissioning. Therefore, no adverse effects are predicted during decommissioning.

6.12.21 No effects on utilities are predicted as a result of the operational phase of the Scheme because no below-ground works will be required during operation, and embedded mitigation measures in relation to safe working beneath overhead lines will be in place.

Materials and Waste

6.12.22 Construction materials required to construct the Scheme are unlikely to be required in large quantities and are anticipated to be small in the context of regional and national construction material availability. Therefore, **no significant** effects are anticipated.

6.12.23 All management of waste will be in accordance with the relevant regulations. Waste will be transported by licensed waste carriers to waste

management sites which hold the necessary regulatory authorisation and/or permits for those wastes consigned to them.

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

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

6.12.26 The construction of the Scheme will be subject to measures and procedures defined within a detailed CEMP. The CEMP will include the implementation of industry standard practice and control measures for environmental impacts arising during construction, such as the control of dust and the approach to material and waste management on site. A Framework CEMP is presented at **Appendix 2-1, PEI Report Volume 4** and a Framework Site Waste Management Plan (SWMP) will be included alongside the ES.

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

6.12.28 Waste arising from the day-to-day operation of the Scheme would include welfare facility waste and general waste (paper, cardboard, wood, etc). These wastes are expected to be minimal.. Therefore, **no significant** effects are expected during the operation of the Scheme.

6.12.29 At the end of the Scheme's operational life, it will be decommissioned. As this is expected to be at least 40 years in the future, it is not possible to identify at this stage either the waste management routes or specific facilities that would be used, as these are liable to change over such a timescale. The waste types generated and effects of decommissioning are likely to be similar to or of a lesser magnitude than the construction effects.

6.12.30 A Framework DEMP will accompany the ES and will set out the general principles to be followed in the decommissioning of the Scheme. A final DEMP based on the Framework DEMP will be prepared and agreed with the relevant authorities at that time of decommissioning, in advance of the commencement of decommissioning works. This will be secured through a DCO requirement.

6.12.31 The effects of decommissioning are usually similar to, or of a lesser magnitude than, construction effects, and therefore such effects are considered **not significant** in relation to the Scheme.

Electric and Electro-Magnetic Fields

6.12.32 This section summarises the effects of the Scheme on Electric and Electro-magnetic Fields.

6.12.33 No overhead electricity cables will be used or constructed as part of the Scheme. Underground cables eliminate the electric field altogether as it is screened out by the sheath around the cable, and therefore the assessment only considered electro-magnetic fields.

6.12.34 The cabling between the solar PV panels and the Field Stations has a relatively low voltage and therefore would not significantly contribute to any increase in electro-magnetic fields should it overlap with other infrastructure. The assessment therefore only considered the 33 kV Interconnecting Cables and the 132 kV Grid Connection Cables.

6.12.35 Underground cables at voltages up to and including 132 kV are considered not capable of exceeding the International Commission on Non-Ionizing Radiation Protection's (ICNIRP) 'reference levels' for electro-magnetic fields (100 microteslas). All cabling used in the Scheme will be at or below this voltage. However, there is potential for exceedances of the reference levels to occur where infrastructure overlaps. This is considered pertinent as the Scheme plans to route sections of the Grid Connection and Interconnecting Cables in the road or roadside, thereby potentially increasing the likelihood of the cables encountering other buried electricity infrastructure within these 'services corridors'. The assessment is therefore an assessment of the potential cumulative effects of the Scheme and other electricity infrastructure.

6.12.36 Using National Grid's maximum known levels of electro-magnetic field generation for 400 KV cables, the assessment considered that as a worse case a residential receptor would need to be within 5 m of the centreline of an Interconnecting Cable or Grid Connection Cable, and for the cable to be overlapped by other electricity infrastructure for the ICNIRP 'reference levels' to be approached and for potentially significant effects to occur.

6.12.37 There are no residential properties within the Site Boundary. The nearest properties to the Site Boundary are at least 5 m away and it is unlikely cables will be installed that close to any property. Therefore, **no significant effects** to residential receptors are predicted to occur.

6.12.38 The effects of electro-magnetic fields on workers for the Scheme will be controlled and mitigated to acceptable levels in accordance with the legislative framework and were not considered further within the assessment.

6.12.39 The Site is not within an aviation safeguarding zone and given the distances of separation between potential aviation receptors and the underground cables and the Grid Connection Substations, the levels of electro-magnetic fields experienced by potential aviation receptors are considered to be negligible. Therefore, aviation receptors were not included in the assessment.

6.12.40 The draft National Policy Statement for Electricity Networks (EN-5) recognises that there is little evidence that exposure of crops, farm animals and natural ecosystems to electro-magnetic fields has any agriculturally significant consequences. Consequently, consideration of the impacts to agriculture and natural ecosystems was not included within the assessment.

6.12.41 Some PRoW do cross over the proposed Interconnecting and Grid Connection Cable Corridors, and may also pass over the Interconnecting and Grid Connection Cables where they are routed within the Solar PV Site. The presence of the public either directly above or adjacent to underground cables associated with the Scheme would be transient, with the individuals using the PRoW exposed to electro-magnetic fields from the cables for only very short periods of time. It is considered that the level of exposure to users of PRoW would be similar to that associated with general household appliances (and noticeably less than associated with the exposure when using a vacuum cleaner, which is 800 microteslas, reducing to two microteslas at 1 m away). Therefore, **no significant effects** to users of PRoW are predicted to occur.

6.13 Cumulative Effects and Interactions

6.13.1 Cumulative effects have the potential to occur where two (or more) proposed schemes are within close enough proximity for them to both have environmental effects on the same receptor.

6.13.2 The assessment of cumulative effects arising from the Scheme in combination with other proposed schemes is based upon a review of current submitted planning and DCO applications as well as a study of planning policy documents.

6.13.3 To date, a list of proposed schemes that overlap the Site Boundary or are located close enough to the Scheme that they have the potential to generate significant cumulative effects have been identified. The list of proposed schemes has been shared with East Riding of Yorkshire Council and North Yorkshire Council for comment.

6.13.4 At the ES stage, the list of proposed schemes will be further refined in consultation with East Riding of Yorkshire Council and North Yorkshire Council, and information relating to these projects will be gathered to enable the assessment and identification of potentially significant cumulative effects in combination with the Scheme. The ES will report the results of the assessment.

6.13.5 Effect Interactions are the combined effect of individual impacts from the Scheme, which have been identified as part of the assessments described in sections 6.2 to 6.12 above, that are considered likely to result in a new or different likely significant effect, or an effect of greater significance, than any one of the impacts on their own. For example, this can happen during construction if a receptor is subjected to noise, and visual impacts associated with site works.

6.13.6 The assessments are at a preliminary stage and therefore the likelihood of effect interactions resulting in significant environmental effects will be reported in the ES, following completion of the individual environmental topic assessments.

7. Summary and Conclusions

7.1.1 The PEI Report explains the interim findings of the EIA process that has been undertaken for the Scheme.

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

7.1.3 Feedback from the formal (statutory) consultation process will be taken into account when preparing the DCO Application and in undertaking the EIA process. The PEI Report will be revised and further developed to prepare an ES that will accompany the DCO Application. The ES will present the final findings conclusions associated with the EIA process, based on the proposed layout and design.

8. Figures

(Overleaf)

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LEGEND
Site Boundary

NOTES

ISSUE PURPOSE
Non-Technical Summary

PROJECT NUMBER
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FIGURE TITLE
The Site

FIGURE NUMBER
Figure 1

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LEGEND

- Site Boundary
- Solar PV Site (xx = Solar PV Area)

NOTES

ISSUE PURPOSE

Non-Technical Summary

PROJECT NUMBER

60683115

FIGURE TITLE

Site Boundary Plan

FIGURE NUMBER

Figure 2

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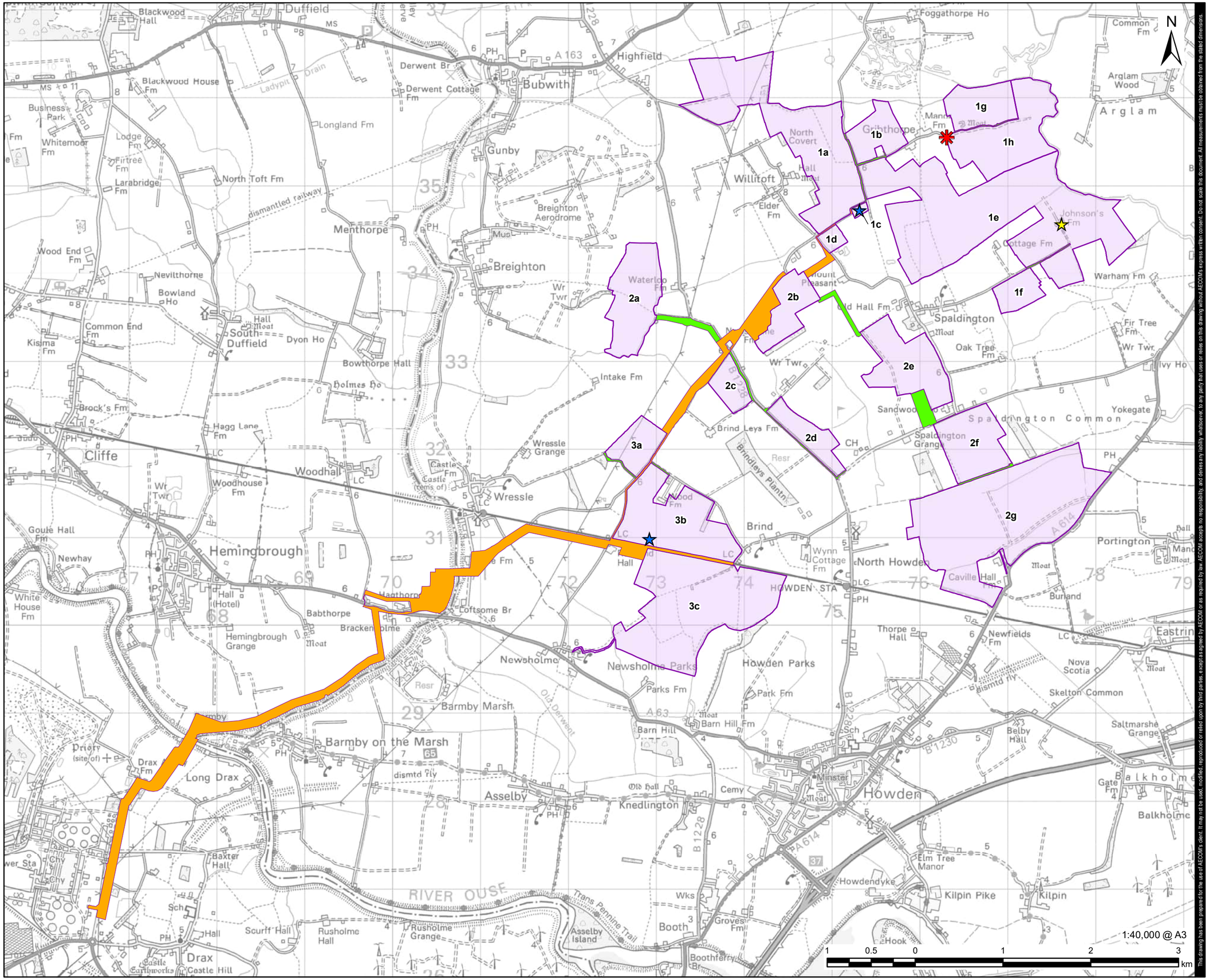

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LEGEND

- Solar PV Site (xx = Solar PV Area)
- Grid Connection Corridor
- Interconnecting Cable Corridor
- 33kV/132kV Grid Connection Substation
- Existing Agricultural Buildings to Be Used for Storage
- Location of Operations and Maintenance Base (Johnson's Farm)

NOTES

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FIGURE TITLE

Elements of the Site

FIGURE NUMBER

Figure 3

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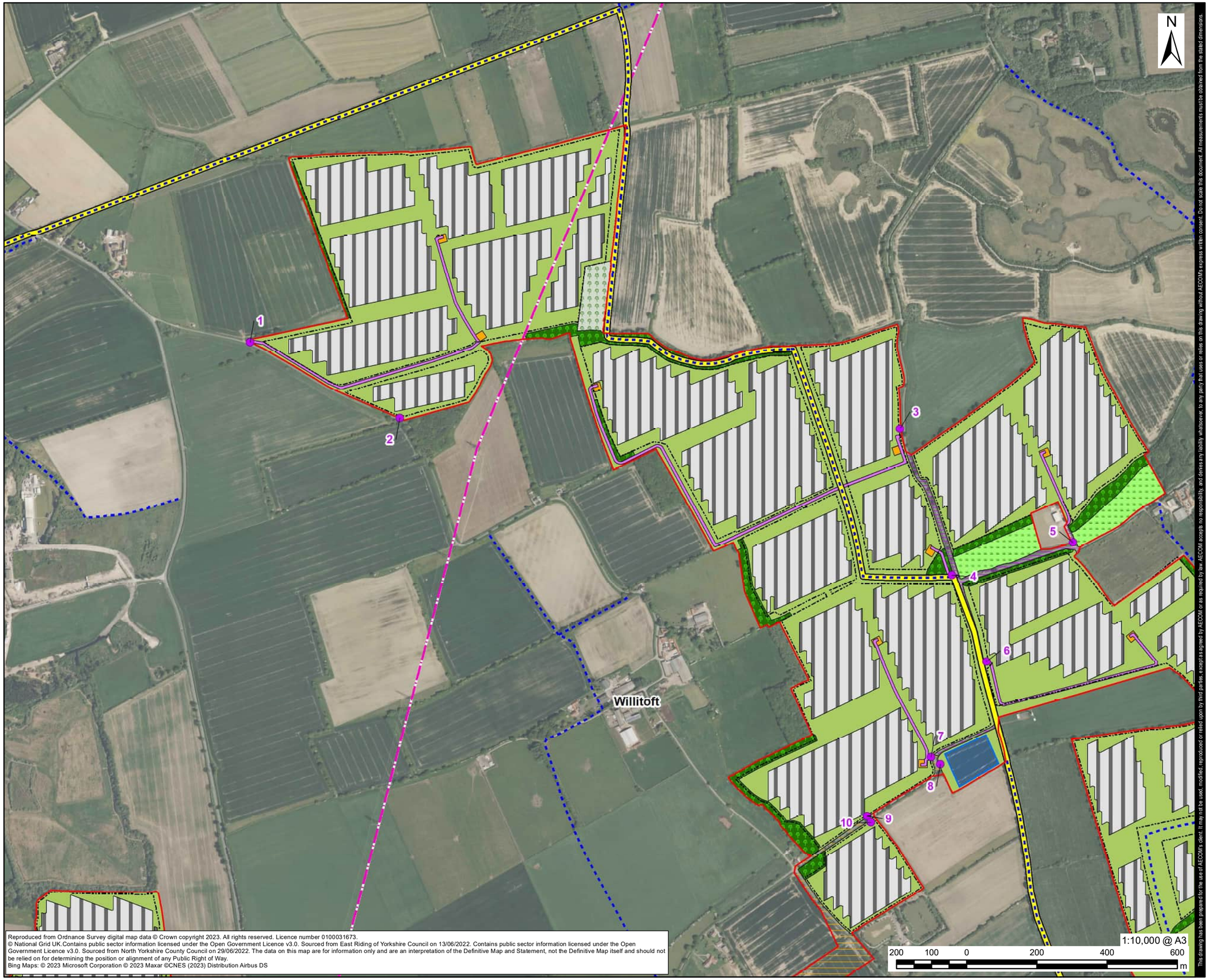

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LEGEND

- Site Boundary
- 132kV Cable Corridor
- 33kV Cable Corridor
- Existing Agricultural Buildings to Be Used for Storage
- Location of Potential Bird Hide
- Access Point
- Hull to Selby Railway Line
- Existing Overhead Line
- Public Right of Way
- Indicative Route of Proposed Permissive Path

Howden 20 Route

- Permissive Footpath
- Public Right of Way

Scheme Element

- New Fenceline
- Existing Hardstanding
- Existing Grassland
- Proposed Grassland
- Existing Woodland Habitat Area and Screening
- Proposed Woodland Habitat Area and Screening
- Proposed Easement (Grassland)
- Proposed Infill Grassland
- 33kV/132kV Grid Connection Substation
- Field Station
- Indicative Location of Temporary Storage Area (During Cable Construction Only)
- Internal Track
- Location of Operations and Maintenance Base (Johnson's Farm)
- Solar Panels (Land Beneath and Surrounding Panels to be Grassed)
- Wetland Wildlife Zone

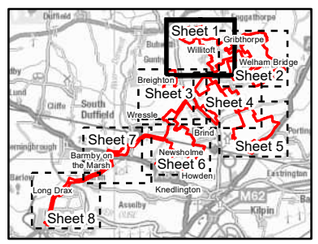

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FIGURE TITLE

Indicative Site Layout (Version 2.8)
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FIGURE NUMBER

Figure 4

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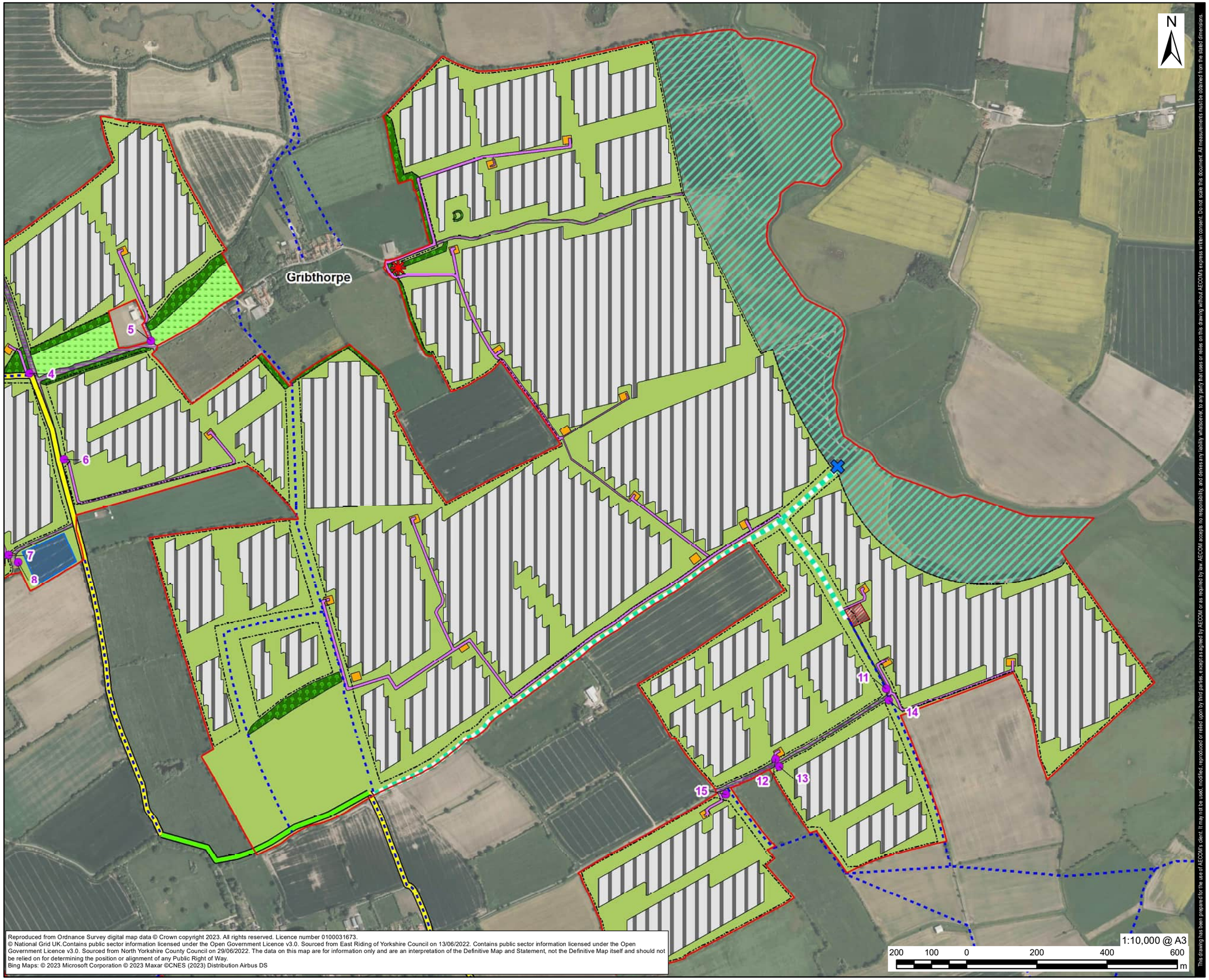

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LEGEND

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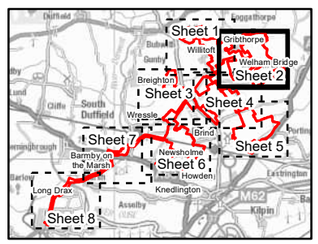

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FIGURE TITLE

Indicative Site Layout (Version 2.8)
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LEGEND

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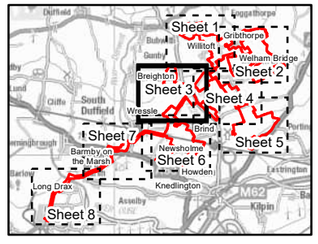

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FIGURE TITLE

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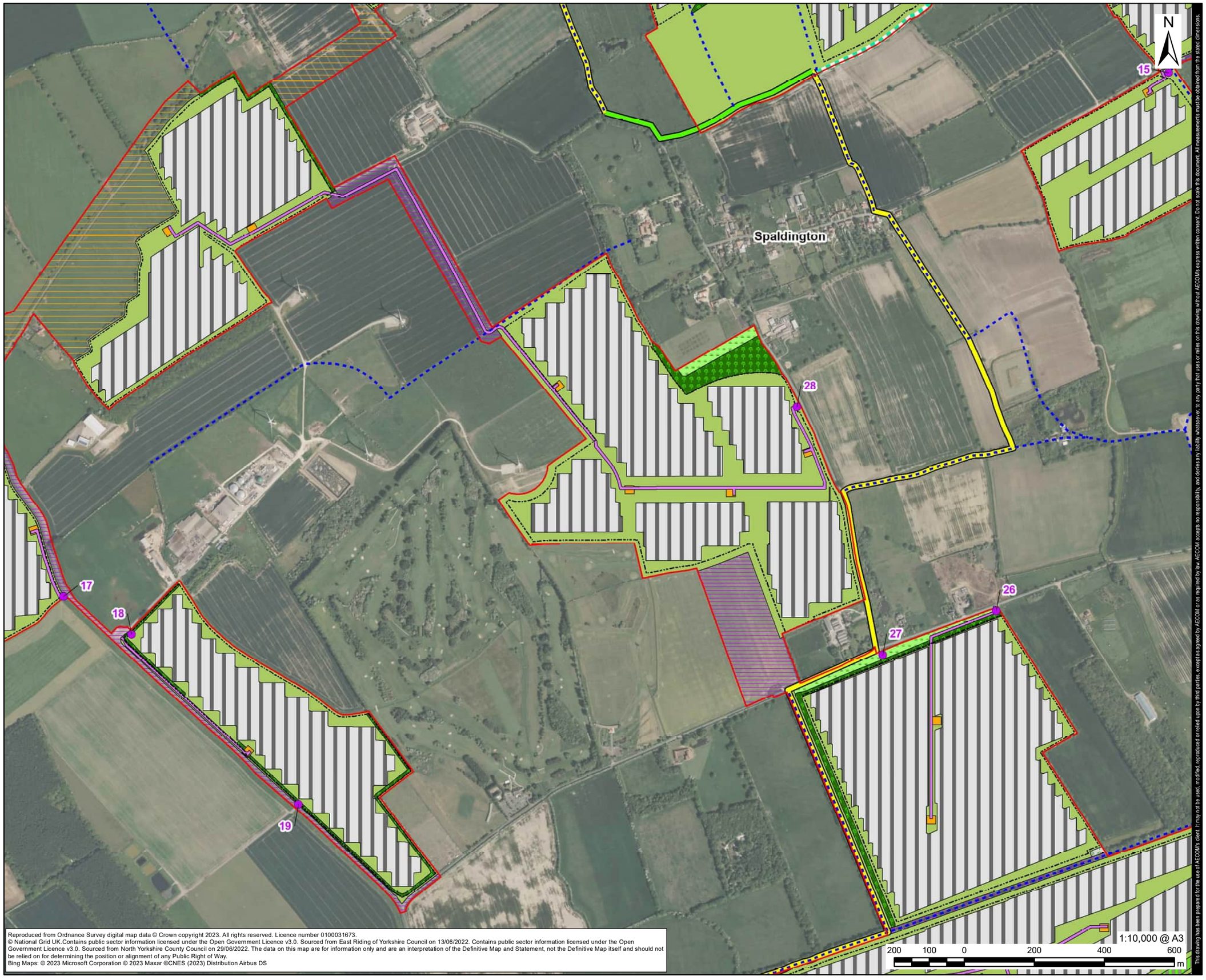

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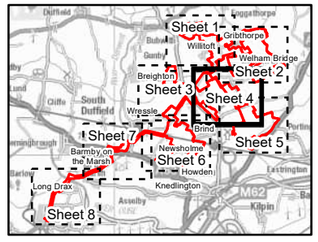

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FIGURE TITLE

Indicative Site Layout (Version 2.8)
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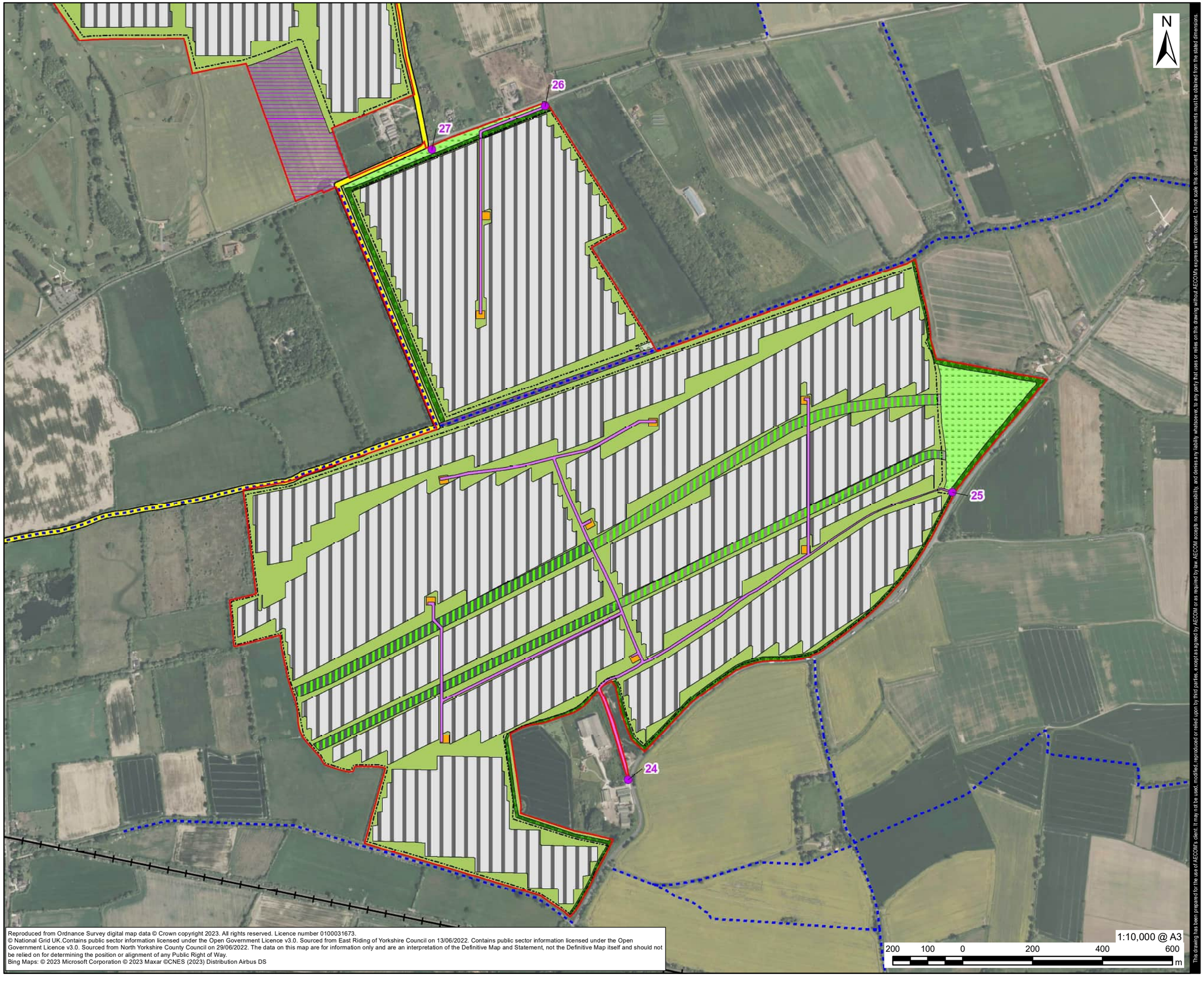

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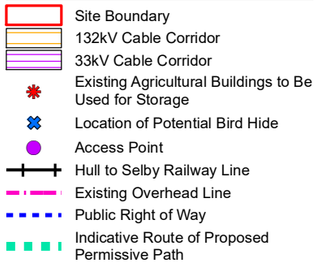

ISSUE PURPOSE

Non-Technical Summary

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FIGURE TITLE

Indicative Site Layout (Version 2.8)
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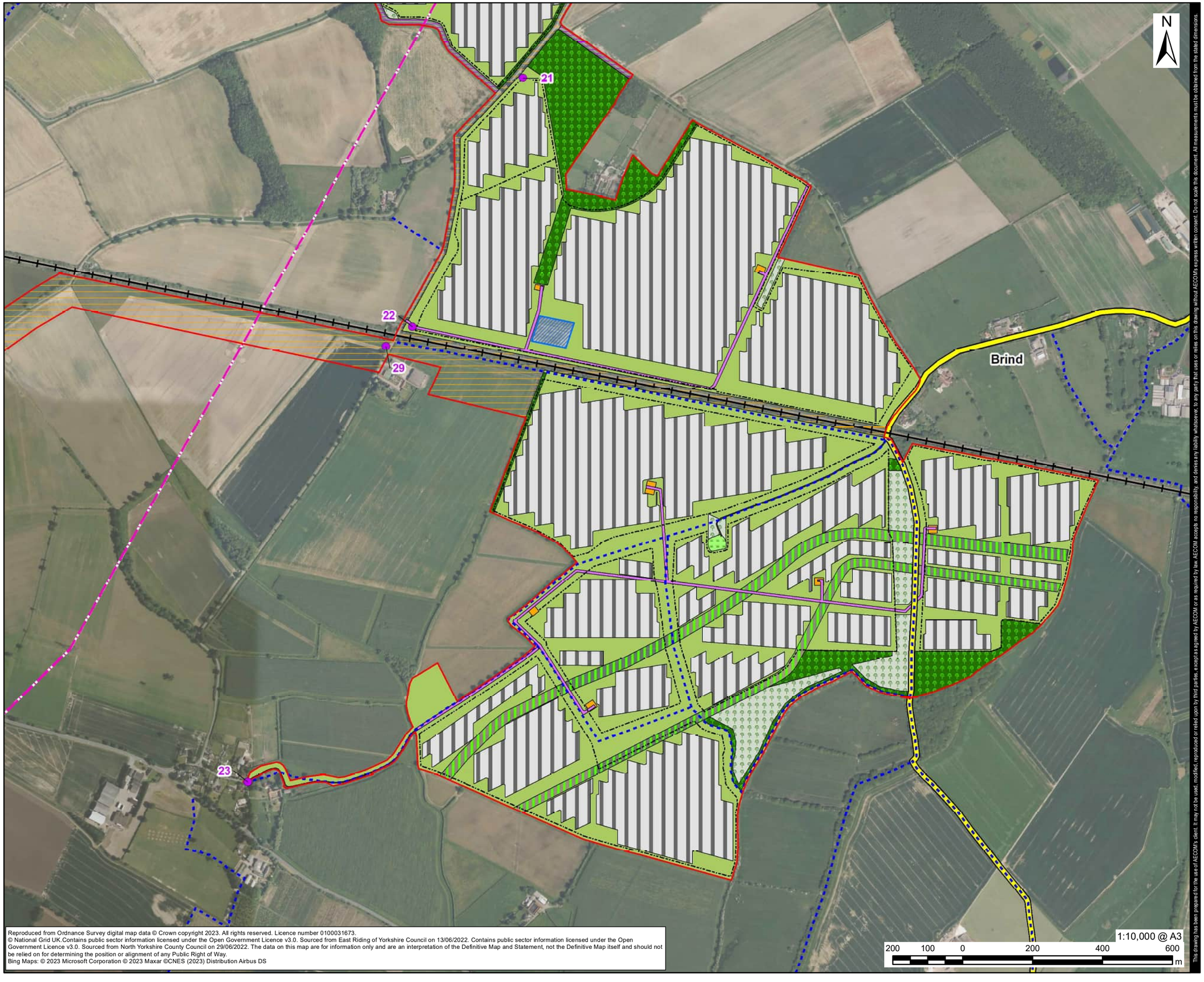

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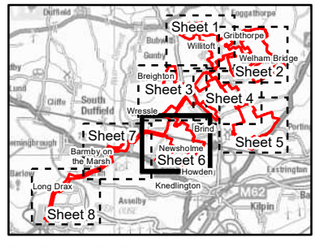

ISSUE PURPOSE

Non-Technical Summary

PROJECT NUMBER

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FIGURE TITLE

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Sheet 6 of 8

FIGURE NUMBER

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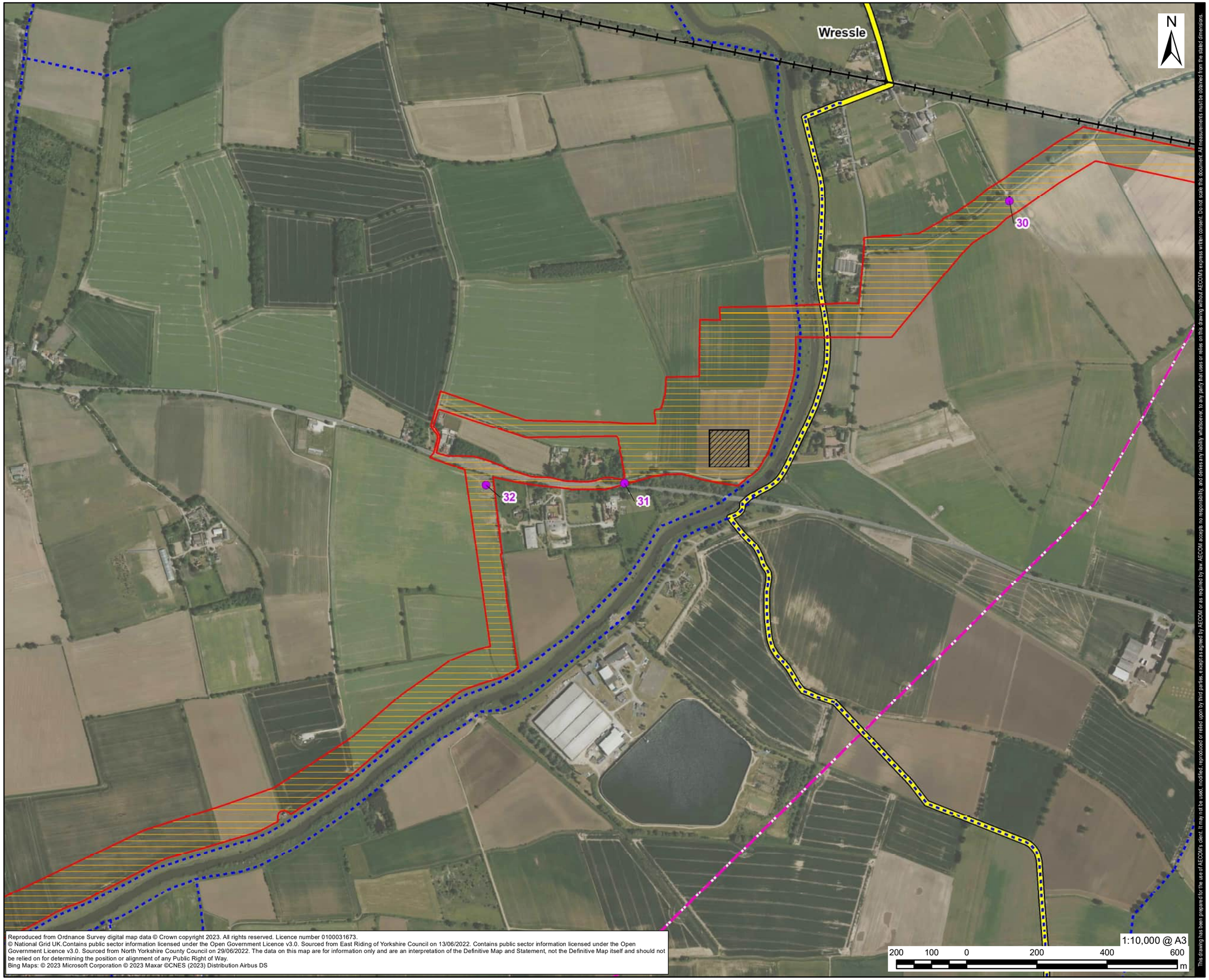

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LEGEND

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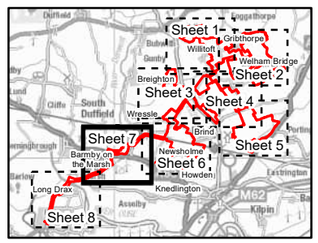
- Proposed Grassland
- Existing Woodland Habitat Area and Screening
- Proposed Woodland Habitat Area and Screening
- Proposed Easement (Grassland)
- Proposed Infill Grassland
- 33kV/132kV Grid Connection Substation
- Field Station
- Indicative Location of Temporary Storage Area (During Cable Construction Only)
- Internal Track
- Location of Operations and Maintenance Base (Johnson's Farm)
- Solar Panels (Land Beneath and Surrounding Panels to be Grassed)
- Wetland Wildlife Zone



ISSUE PURPOSE

Non-Technical Summary

PROJECT NUMBER

60683115

FIGURE TITLE

Indicative Site Layout (Version 2.8)
Sheet 7 of 8

FIGURE NUMBER

Figure 4

Revision: 0 Drawn: LP Checked: JW Approved: HS Date: 2023-04-24

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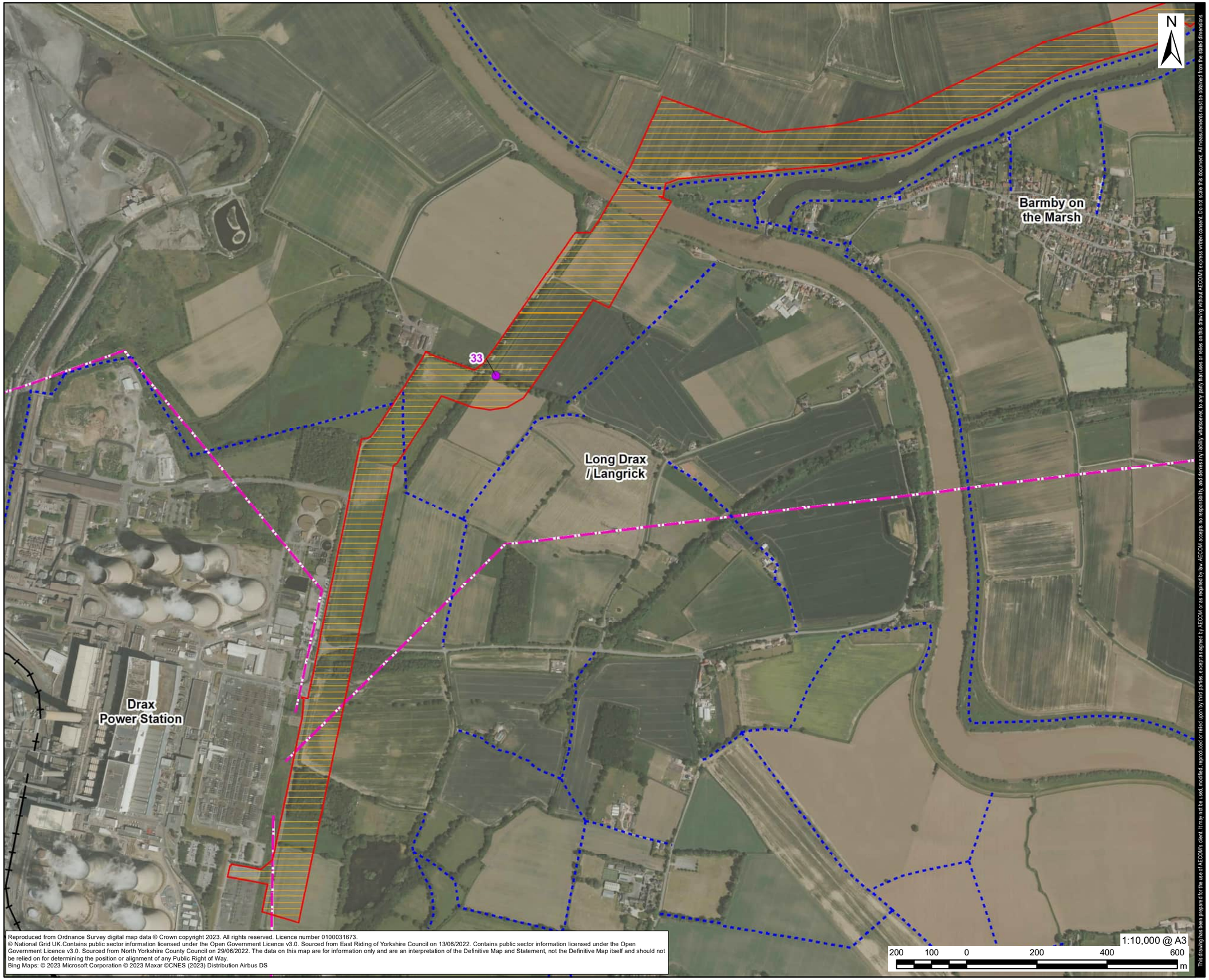

1:10,000 @ A3

200 100 0 200 400 600 m

AECOM

PROJECT

East Yorkshire Solar Farm

CLIENT

East Yorkshire Solar Farm Limited

CONSULTANT

AECOM Limited
Midpoint,
Alencon Link
Basingstoke, RG21 7PP
www.aecom.com

LEGEND

- Site Boundary
- 132kV Cable Corridor
- 33kV Cable Corridor
- Existing Agricultural Buildings to Be Used for Storage
- Location of Potential Bird Hide
- Access Point
- Hull to Selby Railway Line
- Existing Overhead Line
- Public Right of Way
- Indicative Route of Proposed Permissive Path

Howden 20 Route

- Permissive Footpath
- Public Right of Way

Scheme Element

- New Fenceline
- Existing Hardstanding
- Existing Grassland
- Proposed Grassland
- Existing Woodland Habitat Area and Screening
- Proposed Woodland Habitat Area and Screening
- Proposed Easement (Grassland)
- Proposed Infill Grassland
- 33kV/132kV Grid Connection Substation
- Field Station
- Indicative Location of Temporary Storage Area (During Cable Construction Only)
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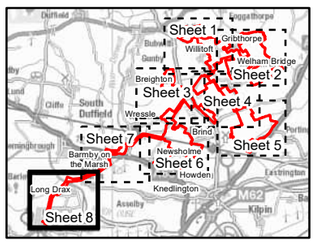
- Solar Panels (Land Beneath and Surrounding Panels to be Grassed)
- Wetland Wildlife Zone



ISSUE PURPOSE

Non-Technical Summary

PROJECT NUMBER

60683115

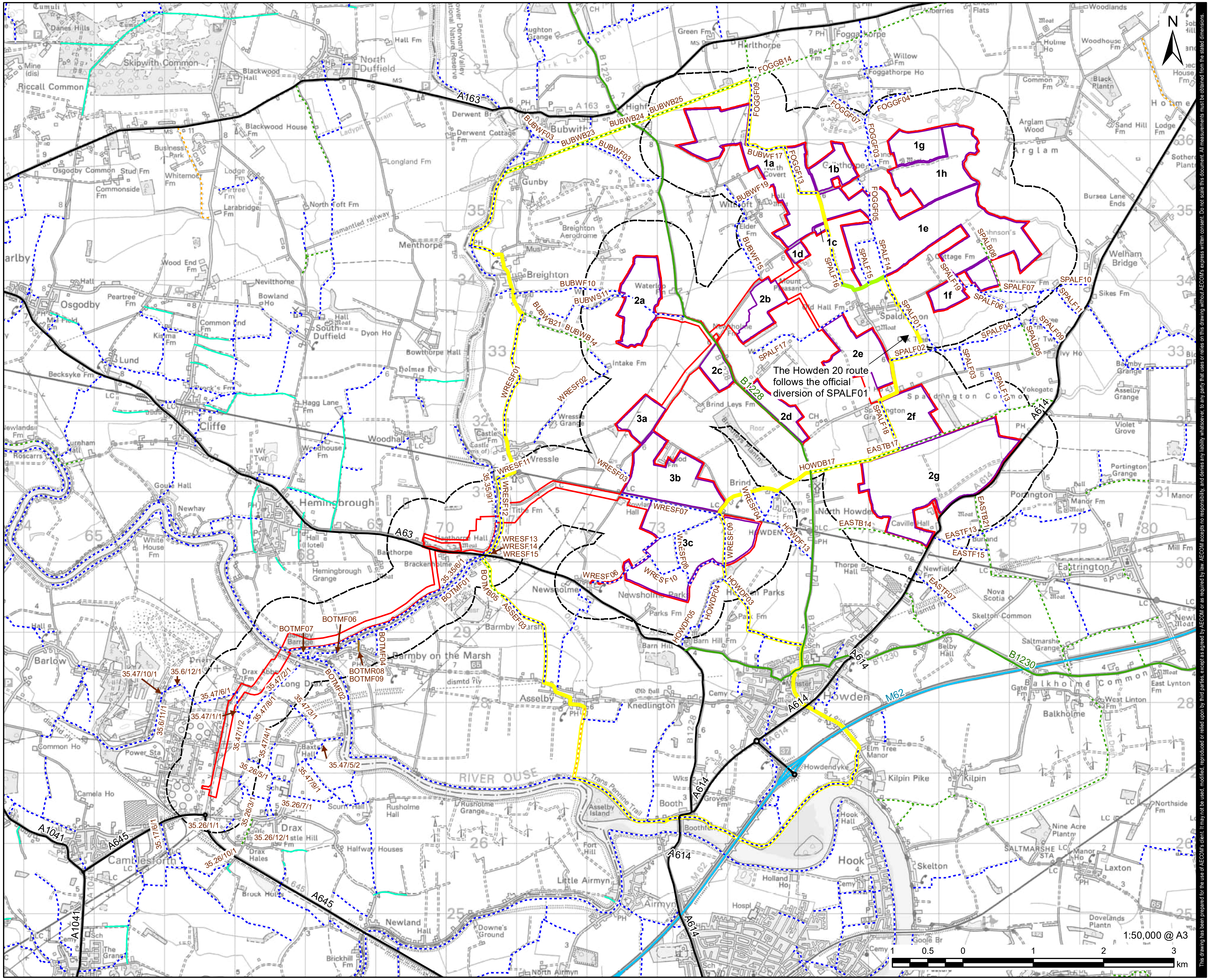
FIGURE TITLE

Indicative Site Layout (Version 2.8)
Sheet 8 of 8

FIGURE NUMBER

Figure 4

Revision: 0 Drawn: JW Checked: CA Approved: HS Date: 2023-04-24



AECOM

PROJECT

East Yorkshire Solar Farm

CLIENT

East Yorkshire Solar Farm Limited

CONSULTANT

AECOM Limited
Midpoint,
Alencon Link
Basingstoke, RG21 7PP
www.aecom.com

LEGEND

- Site Boundary
- Solar PV Site (xx = Solar PV Area)
- 500m Buffer of the Site Boundary
- A Road
- B Road
- Motorway

Howden 20 Route

- Permissive Footpath
- Public Right of Way

Public Rights of Way

- Bridleway
- Byway Open to All Traffic (BOAT)
- Footpath
- Restricted Byways
- Unsurfaced Unclassified Road

NOTES

The data on this map are for information only and are an interpretation of the Definitive Map and Statement, not the Definitive Map itself and should not be relied on for determining the position or alignment of any Public Right of Way.

ISSUE PURPOSE

Non-Technical Summary

PROJECT NUMBER

60683115

FIGURE TITLE

Public Rights of Way

FIGURE NUMBER

Figure 5

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OUR PROPOSAL.

East Yorkshire Solar Farm Limited (a Boom Power company) is proposing a new solar farm with energy storage, known as East Yorkshire Solar Farm, situated between the villages of Gribthorpe, Spaldington, Wressle, and the town of Howden (the Scheme).

The Scheme will generate approximately 400 megawatts of low-carbon electricity, enough to power around 100,000 homes and contributing to the government's targets of reaching net-zero by the year 2050 and 70 gigawatts of solar generated electricity by 2035.

The Scheme comprises solar photovoltaic panels; batteries to store some of the energy generated so that it can be released to meet peaks in demand; underground cabling between the areas of panels and the National Grid's substation at Drax; areas of landscaping and biodiversity enhancement; and associated infrastructure. The land required for the Scheme (including the cable routes) covers an area of approximately 1,445 hectares (3,570 acres), the land within the operational solar farm would total 1,275 hectares (3,150 acres).

We introduced our initial proposals during a non-statutory consultation held from 3 October 2022 to 30 October 2022, and are holding a second consultation, a statutory consultation, from **9 May 2023 to 20 June 2023.**

LOCATION.

The site map illustrates all the land that may form East Yorkshire Solar Farm covering a total proposed land area of 1,445 hectares (3,570 acres).

Not all land within the boundary will be developed. Some will be set aside as buffer zones from the field edge to the nearest panels. Some areas will be set aside for environmental mitigation, including planting and creation of wildlife habitats. Existing public rights of way will be preserved, with spaces of at least 15 m between the centre of the paths and the solar farm fences. Solar panels will be located a further 5 m from the fence into the fields. Existing trees and hedgerows will be used to provide visual screening and maintain ecological habitats. This will be further improved by allowing hedgerows to grow taller and by planting new hedgerows, shrubs and trees.

A derelict building at Johnson's Farm will be redeveloped so that it can provide an operations and maintenance office. The existing barns in this area will be kept and used as stores for maintenance operations throughout the lifetime of the solar farm.

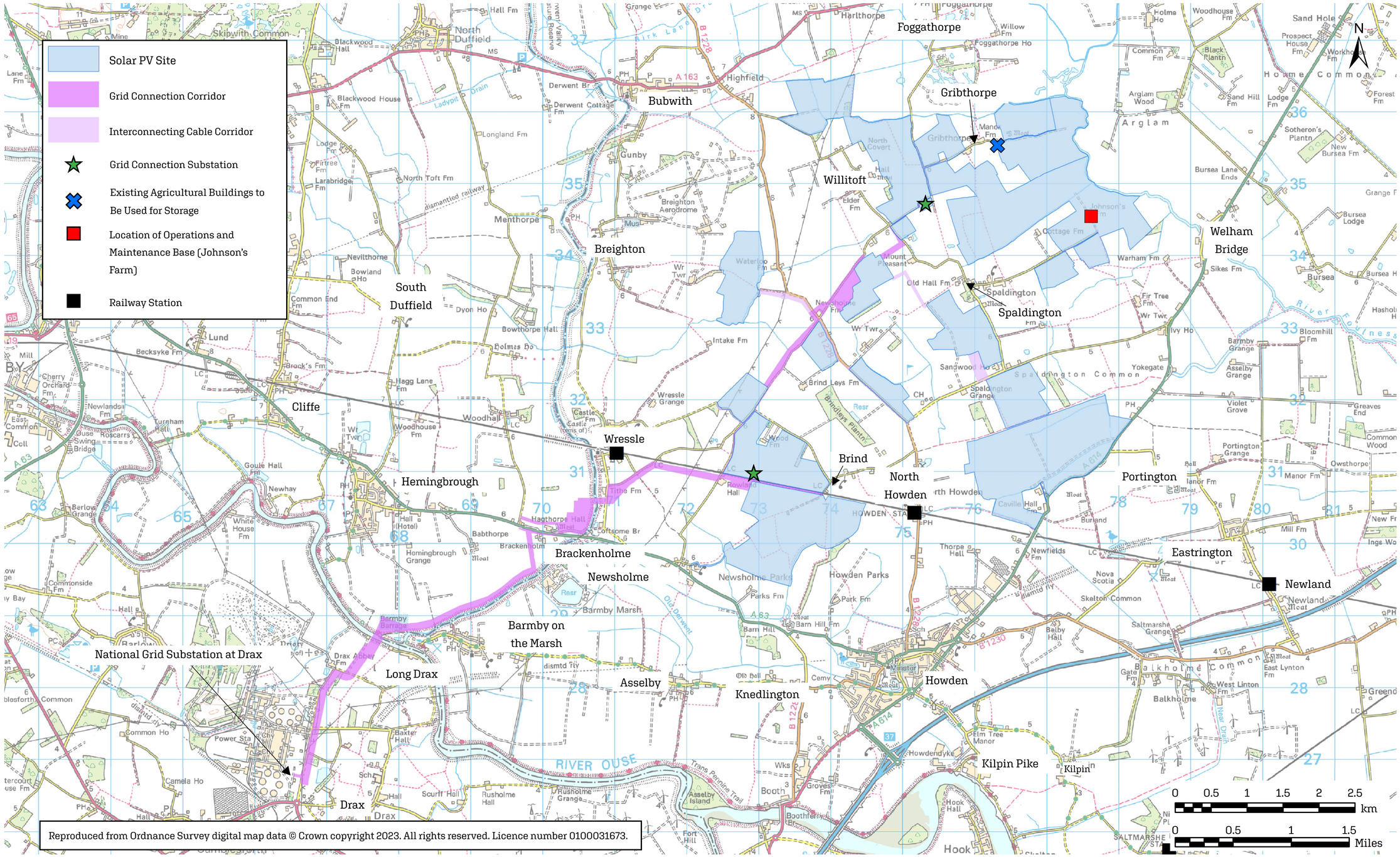
1,445
HECTARES OF LAND

ADDITIONAL TREES & HEDGEROWS PLANTED

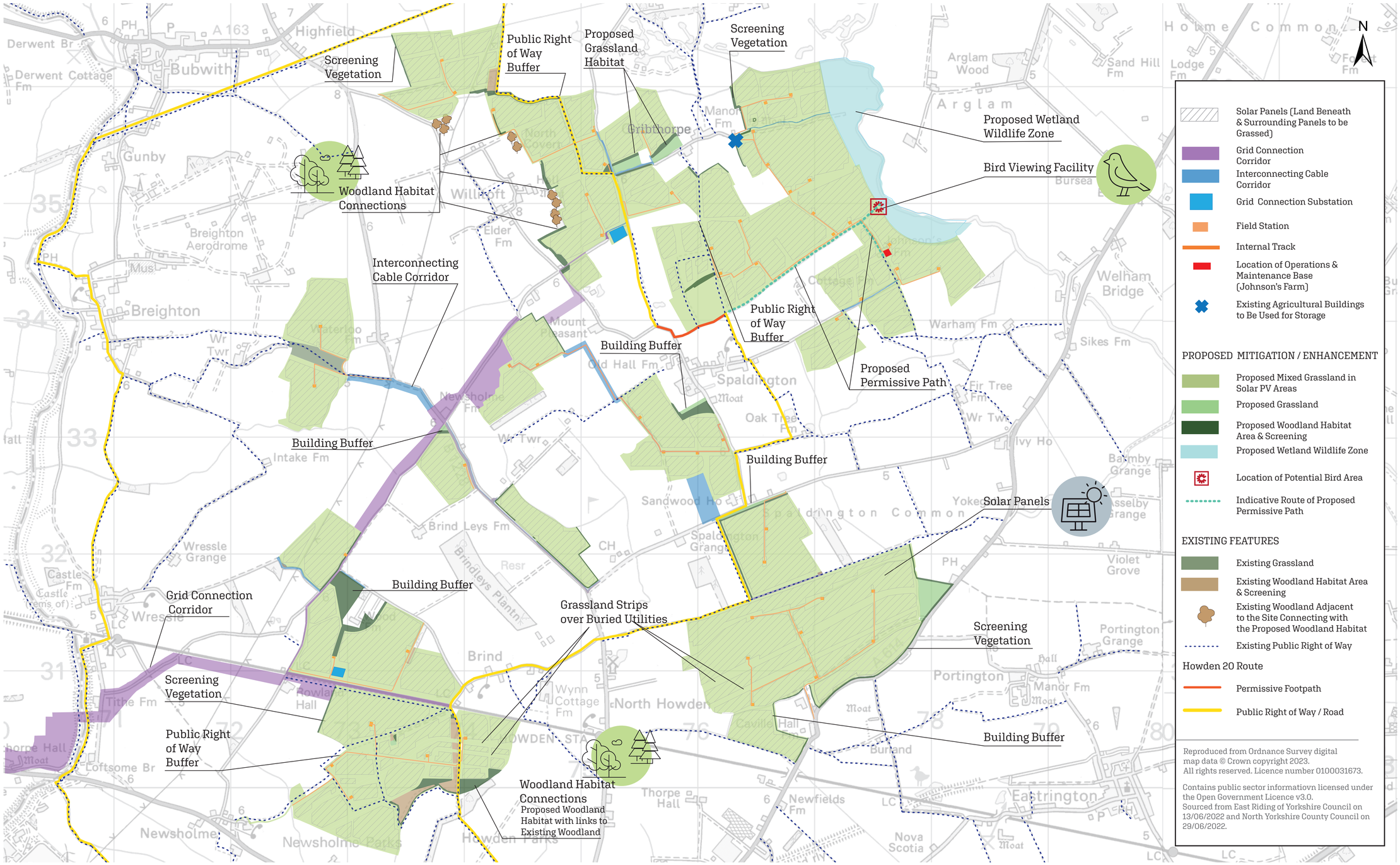
CREATION OF WILDLIFE HABITATS

PUBLIC RIGHTS OF WAY PRESERVED

PROPOSED SITE MAP.



SITE MASTERPLAN.



THE SOLAR FARM.

The photovoltaic panels will be mounted on tables that will tilt through the day from east to west as they track the sun. This means that the panels will always be in the most efficient position. At their maximum tilt (at sunrise and sunset), the panels will briefly be up to 3.5 m high – although for most of the day they will be lower than this. The panels will lie flat overnight or in extreme weather at a height of approximately 2.3 m. There will be a space between each row of panels in the fields which will be sufficient to allow access for cleaning and maintenance. The vast majority of existing tree lines and hedgerows will remain and be improved. We will plant additional trees and hedgerows to further screen the solar farm from view. Deer-proof fencing will be erected around the solar PV areas at a height of up to 2.2 m. There will be a minimum of a 5 m buffer between the field boundary and the fence line.

WHAT GOES INTO A SOLAR FARM?

SOLAR PHOTOVOLTAIC (PV) PANELS.

Solar PV panels are made up of multiple PV cells which convert sunlight into Direct Current (DC) electricity. The PV panels are mounted on motorised tables (trackers) that will move through the day from east to west in order to catch the most sunlight at all points of the day. DC is the kind of electricity found in batteries or trains on the London Underground.

INVERTERS.

Inverters are used to convert the DC electricity generated from the solar PV panels into Alternating Current (AC) – the type of electricity we use in our homes. AC is used for the transmission and distribution networks across the UK.

TRANSFORMERS.

Transformers change the voltage of the electricity generated which makes it more efficient to move over longer distances. The transformers ensure that the voltage of the energy generated is matched to the voltage of the national grid for transmission and distribution around the UK.

SWITCHGEAR.

The switchgear allows the site to connect to or be isolated from the grid during routine maintenance.

BATTERIES.

Battery Energy Storage Systems (BESS) are an industry standard system for storing excess electricity generated by the solar farm. Stored electricity can be released to meet peak energy demands. BESS units are typically stored in shipping container-style units. The batteries will be distributed throughout the solar farm and located within the field stations rather than being contained within a single compound.

FIELD STATIONS.

Around 80 to 100 field stations will be distributed around the solar farm amongst the panels and at a distance of at least 250 m from residential properties. These will contain electrical equipment such as inverters, switchgear and a transformer. They will typically be housed in shipping containers and will be painted green in keeping with the surrounding environment.

GRID CONNECTION SUBSTATIONS.

Substations are used to safely collect, transform and transmit the energy exported from the site to the National Grid.

GRID CONNECTION AND CABLE ROUTE.

To get the electricity generated at the solar farm to homes and businesses, we need to connect to the National Grid transmission network. The solar farm will connect to the National Grid substation at Drax where it joins the National Grid transmission network. This connection will be via an underground cable, which will be installed within the corridor shown on the site map.

Smaller cables between the field stations and the grid connection substations will be buried up to 1.4 m deep in a trench that will be of varying widths depending upon how many circuits are in it; typically starting at 0.8 m wide. The cables, which will go from the grid connection substations to the National Grid substation at Drax, will be approximately 1.4 m deep, depending on other utilities in the area, and in a trench approximately 1.5 m wide. Horizontal directional drilling will be used to place cable ducts under the River Derwent, the River Ouse and the Hull to Selby Railway so that the cable can pass under these without any need for overhead pylons. The routes of some public rights of way may be slightly altered for a short time while we install cables across their paths, with the exception of Featherbed Lane which will have the cable installed under it using horizontal directional drilling so that it does not need to be closed. The public rights of way along the rivers Ouse and Derwent will also be unaffected.

WHAT IS HORIZONTAL DIRECTIONAL DRILLING?

First used in the 1920s, this is a method of installing cables underground by drilling beneath obstacles. This is used routinely in construction to avoid features such as rivers, busy roads or buried infrastructure. We will use this method for installing the cables under the rivers, railway and Featherbed Lane. A drill will go to into the earth and bend the line it takes so that it passes completely under the obstacle and come out the other side. A duct is then installed which will be used for the cables.

WHY HERE?

SUNLIGHT AND TOPOGRAPHY

East Yorkshire is an optimal area within the UK to locate large scale solar development due to its good levels of sunlight and large areas of flat open land. East Yorkshire enjoys a climate with many days that are cool and clear, making it ideal for a solar farm that will make efficient use of that sunlight for generating electricity. Large scale solar development is ideal on flat land as this allows for easy construction and helps to reduce visual intrusion. Flat land also limits the shading between solar PV panels.

AVAILABLE GRID CONNECTION

Yorkshire's history of coal power stations, such as those at Drax, Eggborough and Ferrybridge, means that the National Grid is well developed in the area and has capacity for new energy generation facilities. By connecting the solar farm to the National Grid substation at Drax, the electricity generated and stored at our site will be available and can be distributed wherever it is needed to satisfy demand.

LAND AVAILABILITY

Local landowners have expressed an interest in leasing sections of their land to Boom Power for use in the solar farm.

LAND QUALITY

Most of the agricultural land within the East Riding of Yorkshire and the former District of Selby is classed as higher quality land known as best and most versatile (BMV). However, we have located the solar farm on land which is mostly (more than three-quarters) lower quality agricultural land known as non-BMV.

ACCESSIBILITY

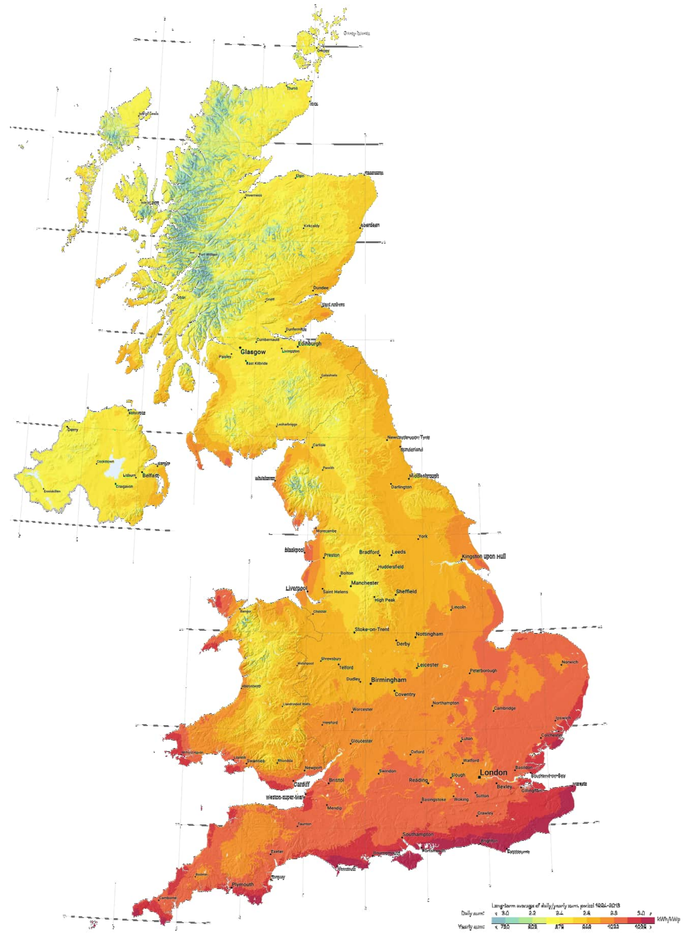
Suitable access for heavy goods vehicles is preferred for construction of large-scale solar development. Construction personnel and large equipment will need to access the site. The area has good access to the major road network with the M62 to the south and a number of A-roads in close proximity.

ENVIRONMENTAL AND LAND USE CONSIDERATIONS

The land selected for the solar PV areas avoids directly impacting nationally protected landscape, ecology and heritage areas such as scheduled monuments, Areas of Outstanding Natural Beauty or Sites of Special Scientific Interest.

CONTINUING AGRICULTURAL USE

We recognise that the solar farm will be located on agricultural land. We are exploring the option to keep this land in agricultural use by farming sheep in the fields beneath the panels. Sheep grazing on solar farms has been successful elsewhere in the UK and has been shown to have benefits for soil health and natural biodiversity. Sheep can move safely between and under the panels and can use them to rest in the shade or shelter from rain. The grass beneath solar panels also grows well enough to contain all the nutrients that the sheep need from grazing on it. We will use a number of grass seed varieties. This will grow rich and diverse grassland which will in turn support a wide variety of animal life. In areas where sheep farming is not possible, the grass will be mown.

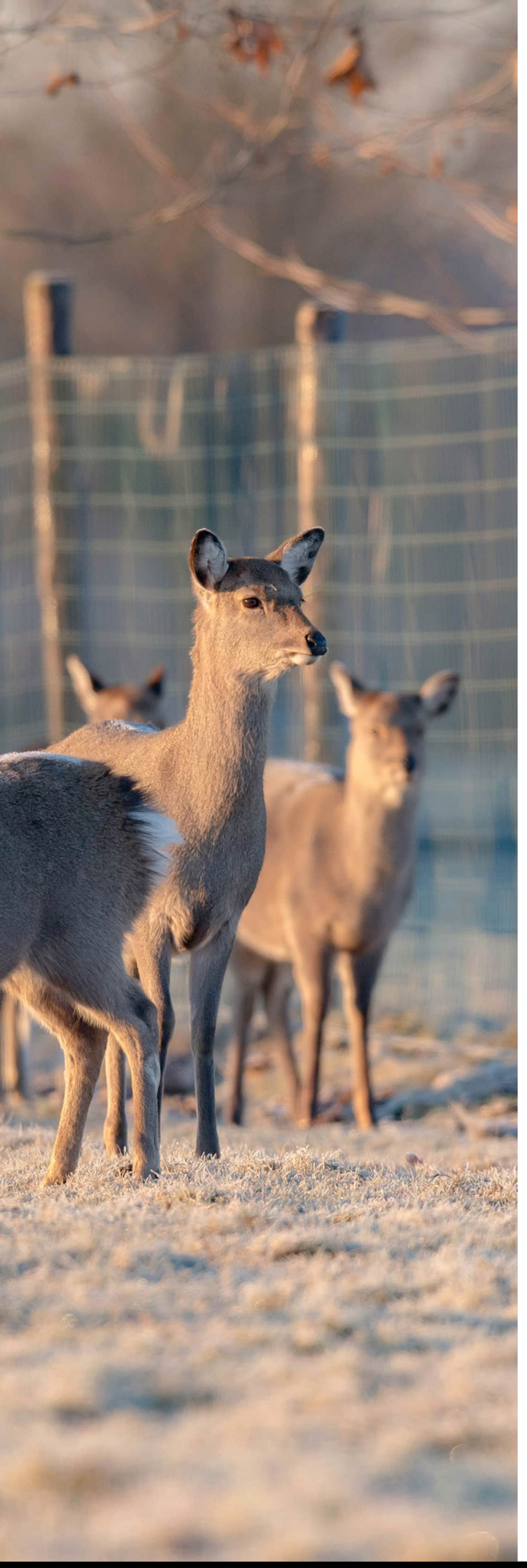


PHOTOVOLTAIC POWER POTENTIAL

UNITED KINGDOM

This solar resource map of the United Kingdom provides a summary of estimated solar photovoltaic (PV) power generation potential. It represents the average daily / yearly totals of electricity production from a 1 kW-peak grid-connected solar PV power plant, calculated for a period of 25 years (1994-2018).

Reference: The World Bank Group using data from the Global Solar Atlas (GSA).



YOU SAID. WE DID.

NON-STATUTORY CONSULTATION RESPONSE

In October 2022 we introduced our scheme and asked for feedback from local residents, businesses and stakeholders as part of our non-statutory consultation.

NON-STATUTORY CONSULTATION:

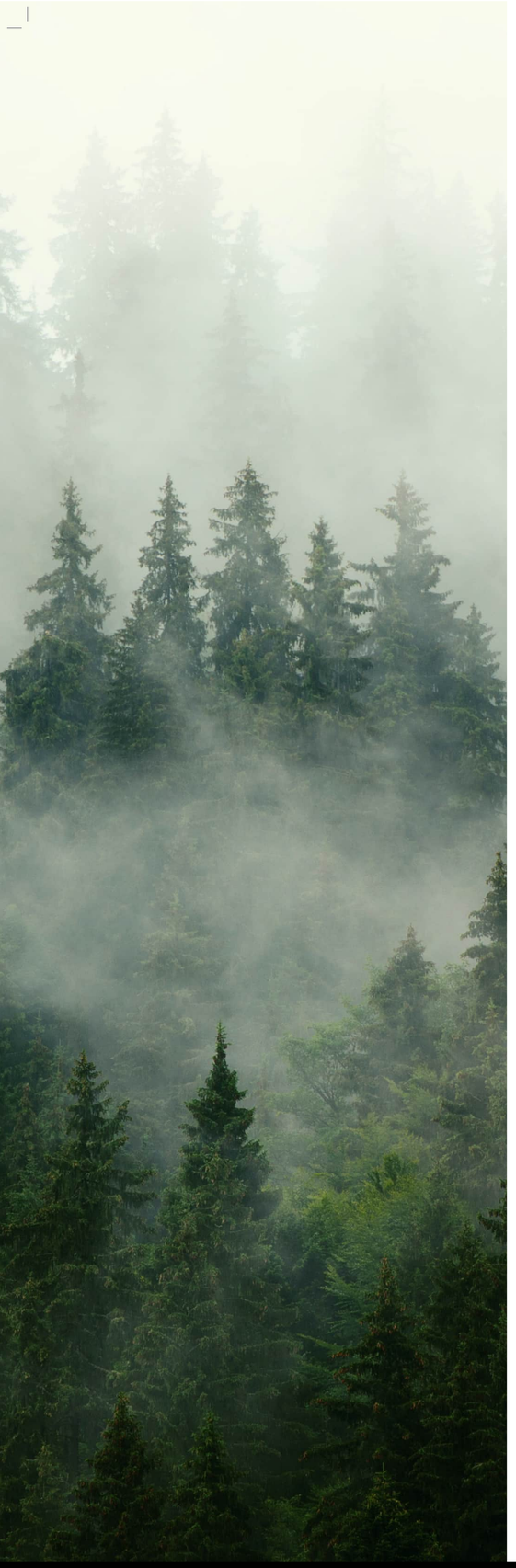
- Four weeks from 3 October 2022 to 30 October 2022
- Over 1,200 brochures distributed
- Two in person events
- Two webinars
- 194 consultation responses received.

Members of the local community were generous with their time, sharing detailed feedback on our initial proposals. We have taken this feedback and used it to help refine and develop our proposals.

You said.	We did.
The Scheme is too large and not appropriate for the area.	A total land area of 1,445 hectares (3,570 acres) has been identified for the Scheme, however not all the land will be used for solar PV panels and associated equipment. Whilst the total land area has increased since our first consultation, this increase has allowed us to sensitively design the buffer zones to include environmental mitigation in the form of separation buffers, planting and screening to retain and enhance the rural nature and the views of local area. The increase in land area also gives us flexibility to address through design any flood risk and archaeological issues that we might encounter, and which are still being investigated.
The Scheme is too close to residential properties, and will destroy residents' view.	Buffer zones and screening planting have been integrated into the site layout to provide separation between the nearest properties and the solar farm. Existing hedgerows will be retained to act as site boundaries, and where appropriate additional environmental screening will be provided through planting of native shrubs and trees.
The fencing will be too high and will create a sense of being trapped.	Deer-proof fencing will be erected at a height of up to 2.2 m to the perimeter of the solar panels fields. The fencing is a mesh style fence with wooden posts and will have minimal disruption on views across the landscape. In addition, the fencing will not impede access for smaller wildlife.
Solar panels will be too high, blocking views of the local landscape.	In our non-statutory consultation, we stated that panels could be up to 4.8 m in height as that was the height of the largest solar PV panel array in production at the time. Our design has evolved, and we have chosen to use tracker PV panels, which move to follow the sun through the day and therefore are more effective as they capture as much sunlight as possible. At maximum tilt, the top of the tracker panel will be 3.5 m high, and only reach this height for a short time each day (first thing in the morning and last thing in the evening). For the majority of the day, they will be lower than 3.5 m in height. At night, the panels are stored horizontally, at a height of approximately 2.3 m.

You said.	We did.
Proximity of the site to public rights of way and footpaths will cut off access, and ruin the views from the paths.	We have designed the solar farm so there will be a minimum buffer zone of at least 20 m between the centreline of the public rights of way and the boundary fencing where the panels are both sides of the public right of way, and 15 m where the panels are on one side. Any fencing installed along public rights of way will be a clear mesh, maintaining uninterrupted views. Our proposal includes the creation of new permissive paths which will increase access options, enhancing connectivity and maintaining views of the local landscape.
The Scheme is taking valuable agricultural land out of production.	Agricultural Land Classification (ALC) is a system used to grade the quality of land for agricultural farming, with grade 1 being the very best through to grade 5 being very poor agricultural land. The majority of the land in this area as mapped by the Department for Environment, Food & Rural Affairs (Defra) is grade 4 (poor quality), with a few smaller areas falling into grades 2 (very good quality) and 3 (good to moderate quality). Mapping by Defra shows the provisional land classification, however we have employed industry specialists to carry out soil sampling throughout the identified land and map the ALC grade distribution throughout the solar PV site more accurately. Based on the results, we have refined our proposals to avoid placing any 'hard-standing' or fixed structures on higher grade land where possible.
Wildlife will be unable to roam freely, with habitats and breeding grounds lost.	We have designed the solar farm to protect habitats and minimise the environmental impact. Specifically, our design introduces three types of wildlife habitats: • Grassland habitat zones – sensitive planting of native grasses will enhance existing grasslands, protecting and enhancing habitats for animals, insects and birds. • Woodland habitat zones – sensitive planting of native trees and shrubs will be used to complement existing woodland, enhance existing hedgerows and provide screening. • A zone in the eastern part of the proposed site adjacent to the River Foulness will be designated as a new Wetland Wildlife Zone. There will be no solar panels on this area, rather it will be planted to create a wetland habitat for ground nesting birds and other species. New permissive paths up to the Wetland Wildlife Zone will allow walkers to observe birds at a distance without disturbing their nesting, and subject to DCO consent a dedicated bird watching spot will be set up
The Scheme will increase flood risk in the area.	Just over half of the land identified will be used for the solar PV areas and associated equipment. This provides us with flexibility in our design to address any flood risk that we might encounter during construction. The presence of the solar farm will not increase the local flood risk. Drainage will be designed to mimic the natural drainage conditions within the site and thereby avoid impact on the flow in receiving surface water features.

We are committed to being a good neighbour, therefore our proposed design aims to minimise the impact on the landscape, wildlife, the local community and all who enjoy this beautiful corner of East Yorkshire.



ENVIRONMENTAL IMPACTS AND MITIGATION.

Environmental Impact Assessment (EIA) is a process to systematically analyse the potential environmental effects of the Scheme and develop effective mitigation measures. Our preliminary findings and mitigation proposals are detailed in the Preliminary Environmental Information (PEI) Report which forms part of this statutory consultation. Key topics where we identified the potential for significant effects, and mitigation measures are shown in the table to the right. You can find more information on the environmental impacts and proposed mitigations in the PEI Report Non-Technical Summary or the specific chapters of the PEI Report.

NET ZERO BY 2050.

Topic	Proposed measures to reduce effects
Climate Change	The overall impact of the solar farm is expected to be significantly beneficial as it will produce low-carbon electricity, helping the UK achieve its target of net zero by 2050 by removing dependency on gas fired power stations. Greenhouse gas emissions resulting from constructing the solar farm due to material mining, energy and fuel use, and transport, are small compared to the benefits the solar farm will bring. Future climate conditions will be taken into account when developing the detailed design of the solar farm.
Ecology	For the past year we have been and are continuing to carry out field surveys and desktop studies to understand the local ecology and design the solar farm with the aim to protect and enhance biodiversity. Protective buffers around the natural features like hedgerows, individual trees, woodland, ponds, and watercourses have been incorporated into the site design. Any disturbance of protected species and off-site biodiversity will be managed and prevented through various measures included within a Landscape and Ecology Management Plan, as well as through environmental management plans for each stage of the solar farm's life. Due to the combination of factors such as converting the land from arable agriculture into grassland under the solar panels, enhancement planting and setting aside buffers and a Wetland Wildlife Zone, the solar farm will result in a biodiversity net gain which will likely be far greater than the statutory minimum of 10%. Other solar farms have achieved over 70% biodiversity net gain, for example.
Landscape and views	Additional planting will complement the existing hedgerows and trees to screen the PV panels and electrical equipment from view. Buffers have been set aside along the public rights of way and areas where it is important to preserve the sense of the openness of the landscape. During the construction and the first few years of operation there will be significant effects on visual amenity at several viewpoints, until the proposed planting and screening measures are fully established. Glint and glare will be minimised by using anti-reflective coating on the PV panels. Together with the screening planting, glint and glare impacts are unlikely.

Topic	Proposed measures to reduce effects
Agricultural land	The site for the solar farm has been selected and designed to minimise the impacts on land classified as the Best and Most Versatile (BMV) agricultural land. Research and field surveys confirm that the majority of the land is non-BMV. The soil beneath the solar panels does not need to be lifted to install the panels so the soil profile will not be disturbed. The physical footprint of the solar farm components which require foundations or hardstanding, such as field stations, grid connection substations and access tracks, makes up a small proportion of the solar farm area, which means the soil disturbance will be minimal. The change from arable agriculture to grassland is temporary as the land can be returned to arable farming upon decommissioning of the solar farm. The temporary shift from arable to grassland is predicted to result in positive changes to soil structure and soil carbon content. The change of agricultural land into wildlife habitat is likely to lead to significant benefits to ecology. The land within cable corridors will be reinstated after construction and will return to its original condition and use.
Traffic, access to open space and active travel	The main impact on traffic and transport is likely to be from staff vehicles and HGVs during construction. To address this, the routes to be used and timings for deliveries and staff will be defined in a Construction Traffic Management Plan before construction begins, and this will be a requirement for construction staff. Public Right of Ways will remain open during construction. We are proposing new permissive paths will further enhance the existing Public Rights of Way during the operation of the solar farm. As the operational solar farm requires little maintenance there will be limited traffic during operation.

Topic	Proposed measures to reduce effects
Noise and vibration	Measures like careful positioning of noisy machinery away from residential properties, regular noise monitoring, notifying local residents of any noisy works and adhering to the agreed working hours will help reduce the noise effects on the local residents during construction. Noise modelling results suggest that the operational solar farm will not significantly change the noise baseline for the local residential receptors. This is achieved by locating the electrical equipment such as grid connection substations and field stations away from receptors.
Cultural heritage	The location and the layout of the solar farm avoids significant impacts on designated cultural heritage assets and their settings, such as scheduled monuments, listed buildings and conservation areas, and on non-designated assets, such as historic buildings and landscape, and archaeological remains. Archaeological surveys are ongoing. The results of field surveys will identify the location of buried archaeological remains and allow the solar farm to be designed around them. Where avoiding archaeology is not possible, appropriate archaeological mitigation, such as excavation, will be undertaken to ensure remains are fully understood and recorded.
Flood risk	The design of the solar farm will take account of the flood risk in the area. No solar farm infrastructure will be placed in the areas of highest flood risk, and the heights of PV panels and equipment foundations will be enough to avoid them being affected by flooding. The solar farm itself will not alter the drainage and will not worsen the flood risk in the area

CONSTRUCTION AND OPERATION.

HOW LONG WILL THE SOLAR FARM TAKE TO BUILD?

We anticipate that construction of the solar farm will take approximately 24 months, although this could take longer due to unanticipated circumstances. The construction will be phased across the site, so we will not work in all areas at once during this period.

HOW WILL THE SOLAR FARM BE BUILT?

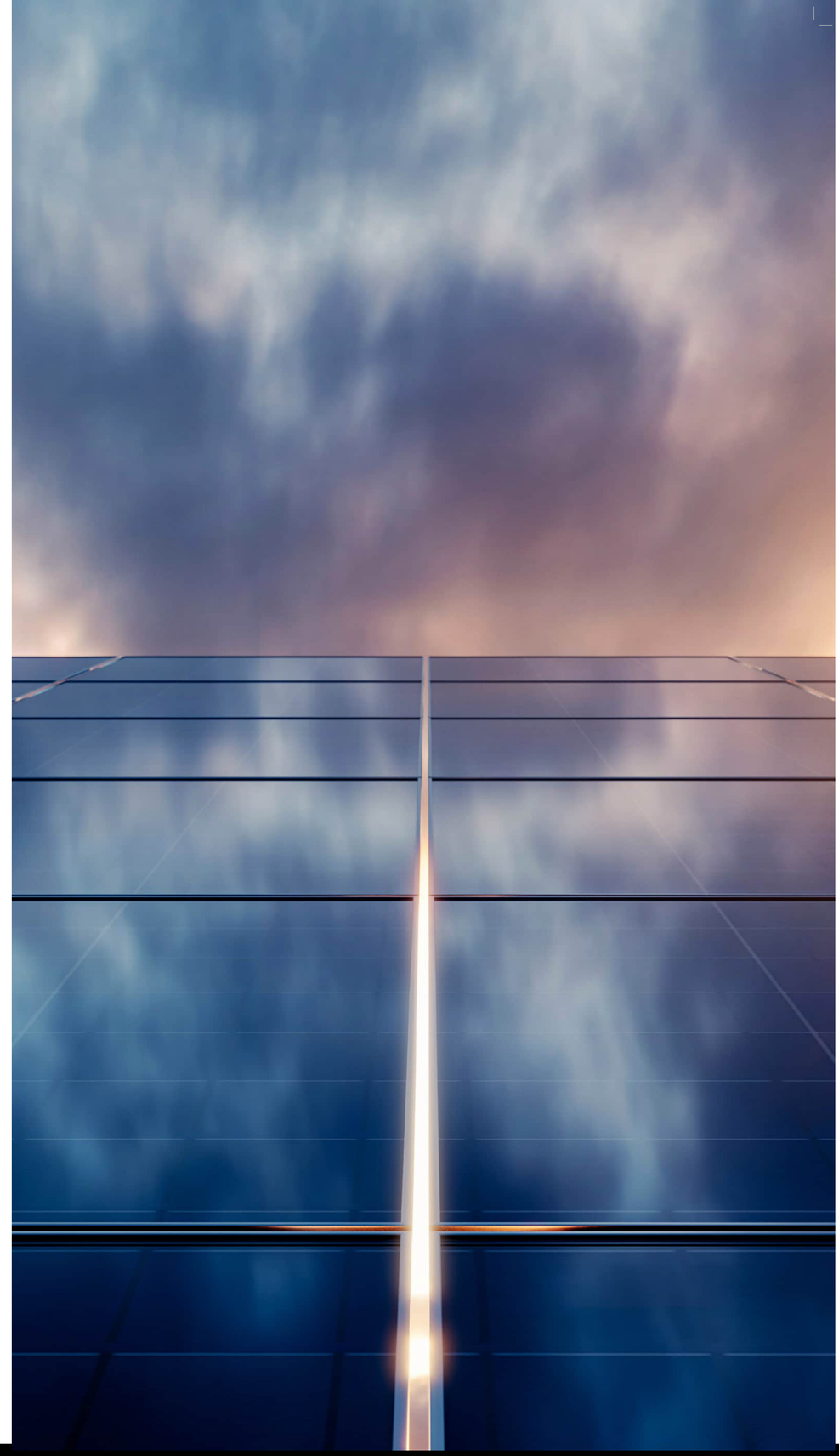
Most of the construction work will consist of putting up a simple galvanised steel frame to which the PV panels will be attached. A site will be first fenced off, then galvanised steel poles will be driven into the ground to create a foundation. The galvanised steel frame will be attached to the piles, and the PV panels will be attached to the frame. Inverters could be installed next to or at the end of rows of panels to create the electrical connection to the cables, or they could be centrally located within the field stations. Separately to the installation of the PV panels, we will install the cable, field stations and substations. Once these are all connected, electricity will be generated by the PV panels and will flow into the National Grid.

WHAT ONGOING MAINTENANCE WILL BE NEEDED?

Once constructed, the operational phase will begin. In general, this will involve a monthly visit to inspect and monitor fences and the operational equipment. The solar farm will be monitored remotely, with anything unusual investigated. CCTV will be mounted on perimeter fences, which will face along the fence and inwards only. This will also be monitored remotely, with maintenance visits to replace any components that need replacing where necessary. The dirt and dust that builds up on the panels of the solar farm is mostly self-cleaning, with rain and the motion of the tilting panels. Where additional cleaning is needed this will be done with a large water brush, similar to the kind found in many car washes.

HOW WILL EVERYTHING BE TRANSPORTED DURING CONSTRUCTION?

Heavy Goods Vehicles (HGVs) will bring most construction materials to the construction compound. There will be a maximum of three Abnormal Indivisible Loads for delivery of the substation transformers. From the compound, tractors and trailers will be used to cross fields rather than roads to distribute these materials to their specific site. Different stages of construction will need different numbers of HGV deliveries. The routes to be used and timings for deliveries and staff will be set out in a Construction Traffic Management Plan. The Framework Construction Traffic Management Plan will be submitted with the DCO application. A road condition survey will be carried out on local roads identified ahead of construction starting. Where necessary, these roads will be repaired to the same or better standard once the solar farm is complete. The survey will also show if and where passing places are needed so that existing traffic can continue to move freely. Where new passing places are installed, they will be left in place for the long-term benefit of the community.



WHAT WILL HAPPEN IN THE FUTURE?

At the end of the solar farm's life, equipment will be removed, and the field can return to arable agricultural use. The PV panels will be recycled, and the poles pulled out of the ground, returning the land to the same state as it is currently. The land will retain greenfield status which will protect it from other forms of development.

A Decommissioning Environmental Management Plan will be created before the decommissioning process begins. We estimate that the decommissioning period will take between 12 and 24 months. We are committed to recycling everything than can be recycled. At the current time, we estimate at least 95% of all the material used in the solar farm can be recycled.

PLANNING AND CONSULTATION PROCESS.

East Yorkshire Solar Farm will generate approximately 400 megawatts (MW) of electricity. As the electricity generating capacity is greater than 50 MW, it is classed as a Nationally Significant Infrastructure Project (NSIP). NSIPs are large infrastructure developments which are considered important to the entire country and require consent by way of a Development Consent Order (DCO) for them to be built.

Unlike local planning applications, which are considered by local authorities, DCO applications are made to the Secretary of State and handled by the Planning Inspectorate. In the case of a solar farm, the final decision on a DCO application is made by the Secretary of State for Energy Security and Net Zero. The post-submission timeline is shown to the right.

Local Authorities are among the many bodies invited to consult on the DCO application, along with environmental and heritage bodies and most importantly the local community and stakeholders. Feedback from this consultation will be documented in the Consultation Report, which will be submitted with our DCO application. We plan to submit our DCO application later in 2023, following consideration of all responses to this consultation.

If our DCO application is accepted, you can register directly with the Planning Inspectorate to become an Interested Party. During examination the Planning Inspectorate will keep Interested Parties informed about the progress of our application, and how they can contribute to the DCO process.

More information is available at the Planning Inspectorate's website, you can take note of the web address below or scan the QR code:
www.infrastructure.planninginspectorate.gov.uk/application-process/the-process/

28 Days

ACCEPTANCE

Planning Inspectorate appointed on behalf of the Secretary of State to consider whether or not the application meets the standards required to be accepted for examination.

3-4 Months (variable)

PRE-EXAMINATION

The public will be able to register to become an Interested Party by making a Relevant Representation. The Planning Inspectorate will also appoint an Examining Authority who will invite all Interested Parties to attend a Preliminary Meeting.

6 Months

EXAMINATION

The Examining Authority has up to six months to carry out the examination. During this stage Interested Parties who have registered are invited to provide more details of their views in writing or as part of public hearings that may be held.

3 Months

RECOMMENDATION

Examining Authority to prepare recommendation to the Secretary of State.

3 Months

DECISION

Secretary of State to decide if DCO application is granted or refused.

BENEFITS.

We are exploring an option to use the land under the solar panels for sheep grazing and have designed the solar farm to make this possible. Sheep grazing can help to maintain the land in agricultural use and help to diversify farming in the area adding much needed security for farmers during challenging economic times.

Compared to arable farming, solar farms can result in a biodiversity net gain by providing an overall increase in natural habitat and ecological features. Whilst there is an initial change to the countryside, the operational solar farm will fast become a haven for wildlife. In addition to woodland and species diverse grassland, we are proposing a Wetland Wildlife Zone with a bird viewing facility.

The Scheme proposes two permissive paths reinforcing the existing public rights of way in the local area. These paths, which may also include bridleway, will increase local accessibility and connectivity and provide circular routes for local walkers and horse riders to use. Existing rights of way within the solar farm will be retained with large buffers to separate users from solar infrastructure.

The construction of the solar farm will present opportunities for local employment and will indirectly support local businesses such as shops, petrol stations and hotels.

COMMUNITY BENEFIT PACKAGE.

We want local people to share in the benefits that the solar farm can bring. We are exploring the use of a community benefit package. Money would be set aside for a project or projects that make a positive difference to the local community. We are asking, as part of the consultation feedback form, to help identify the types of projects the community would like to see included.

SHARE YOUR VIEWS.

Your opinion matters, and every response to this consultation will be considered, evaluated, and used to develop our final design. The consultation report will be published on our website and submitted as part of our application for a Development Consent Order.

You can share your thoughts by:

- Completing a feedback form online at **www.boom-power.co.uk/east-yorkshire**
- Emailing your views to us **eastyorkshiresolarfarm@boom-power.co.uk**
- Posting a copy of the paper form to **'FREEPOST EAST YORKSHIRE SOLAR FARM'**
- Give it to one of our event staff if you have a completed form with you today

HOW TO CONTACT US.

If you have any questions or would like to request copies of information (including in accessible formats if needed) please contact us using the below details. Please note that phone lines will be open between 9am and 5pm Monday to Friday.

01964 782219

BOOM-POWER.CO.UK/EAST-YORKSHIRE

EASTYORKSHIRESOLARFARM@BOOM-POWER.CO.UK

ILLUSTRATIVE PHOTOMONTAGE.

MITIGATION PLANTING AT VIEWPOINT 6

Location: Willitoft Road, Spaldington

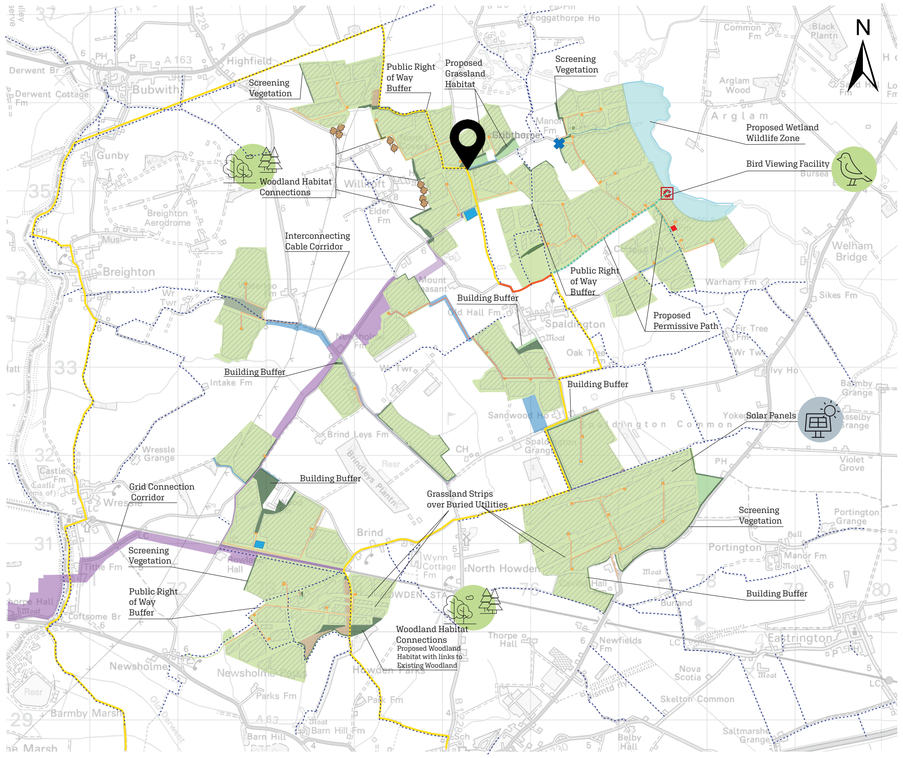
Direction of view: West

ILLUSTRATIVE PHOTOMONTAGE.

MITIGATION PLANTING AT VIEWPOINT 10

Location: Tottering Lane junction, Gribthorpe

Direction of view: North East

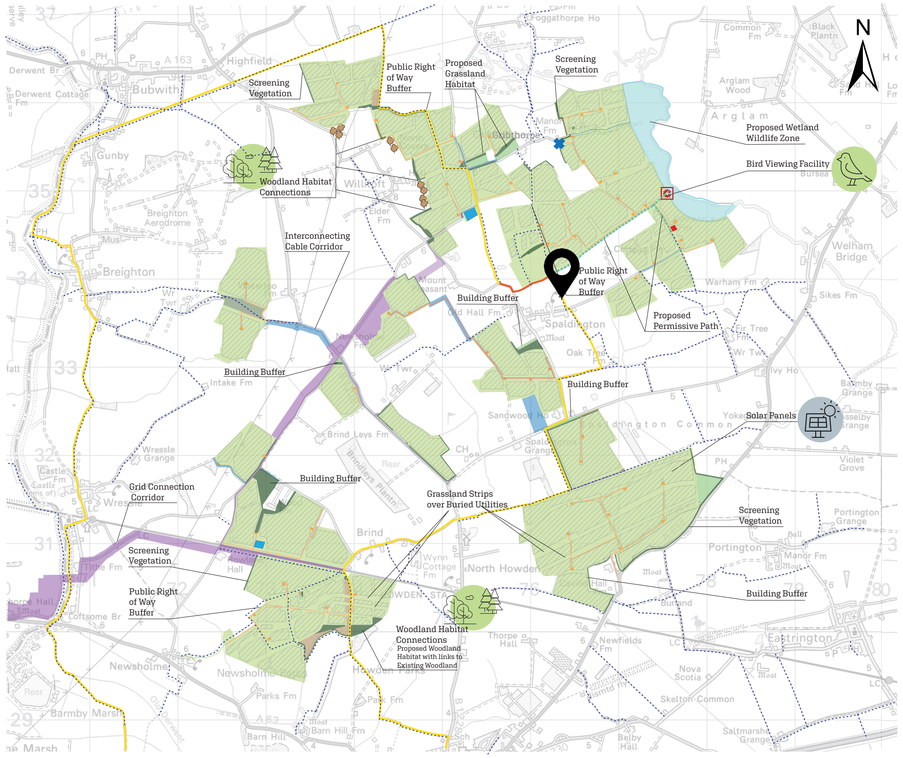


ILLUSTRATIVE PHOTOMONTAGE.

MITIGATION PLANTING AT VIEWPOINT 11

Location: Public Right of Way, Howden 20 Walking Route, Spaldington

Direction of view: North



EXISTING

YEAR 1

YEAR 15

ILLUSTRATIVE PHOTOMONTAGE.

MITIGATION PLANTING AT VIEWPOINT 12

Location: Manor Farm, Gribthorpe

Direction of view: East

EXISTING

YEAR 1

YEAR 15