

Heckington Fen Solar Park

EN010123

Appendix 15 Statutory Consultation – All Consultation Materials including Statement of Community Consultation (SoCC)

Applicant: Ecotricity (Heck Fen Solar) Limited

Document Reference: 5.1.15

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

February 2023



**CONSULTATION REPORT – APPENDIX 15 – STATUTORY
CONSULTATION – ALL CONSULTATION MATERIALS
INCLUDING STATEMENT OF COMMUNITY
CONSULTATION (SOCC)_PART 1**

Document Properties		
Regulation Reference	Regulation 5(2)(q)	
Planning Inspectorate Scheme Reference	EN010123	
Application Document Reference	5.1.15	
Title	Consultation Report Appendix 15 – Statutory Consultation – All Consultation Materials including Statement of Community Consultation (SoCC)_Part 1	
Prepared By	Heckington Fen Energy Park Project Team (Copper Consultancy)	
Version History		
Version	Date	Version Status
Rev 1	February 2023	Application Version

Appendix 15 Statutory Consultation – All Consultation Materials including Statement of Community Consultation (SoCC) Part 1

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15.1 Consultation booklet



Heckington Fen Solar Park

Affordable Green Energy for Lincolnshire

Consultation Booklet

30 June to 1 September 2022





Rows of fixed racking solar panels in a field

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Introduction



Fixed racking solar panels in a field

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Introduction

We're consulting on our proposed solar park between 30 June and 1 September 2022.

This booklet tells you what you need to know to take part in the consultation.

Please share your views with us – so we can develop the proposals with you in mind.

Email: heckington@solar.ecotricity.co.uk

Freephone: 0800 151 0784

Post: FREEPOST ECOTRICITY SOLAR PARK



Need for the Project



With the potential to generate enough affordable green electricity to power over 100,000 homes, Heckington Fen Solar Park will play an important part in preventing the worst effects of climate change, while helping to support the UK's future energy security. Find out how the numbers are calculated on our project website.



As we get more light in the summer and more wind in the winter, solar can help the UK to balance its electricity supply across the seasons. It's a key part of the Government's strategy for fulfilling ambitious net zero commitments.



Our project will clean up our air – it will remove more than 75,000 tonnes of harmful CO₂ emissions per year. The same as taking 50,000 cars off the road.



How will we deliver it?

We build projects that local people can be proud of. We've been working with communities for more than twenty years to ensure our renewable energy projects benefit them environmentally, socially and economically.

Your views can influence our proposals and help us achieve the park's full potential – for your community, nature conservation, and our planet.

We reached out to your community last year to make sure you could provide comments on our proposals at an early stage of the Project's development.

We developed our site plans based on your community's views, issues, concerns, and various conversations.

Only now are we formally required to consult on them as required by the Planning Act 2008.

Our team previously consulted on plans to build 22 wind turbines on this land and reserved planning permission in 2013. However, they were unable to satisfy the Ministry of Defence's radar concerns. Therefore, we are now consulting on our new proposals for Heckington Fen Solar Park.

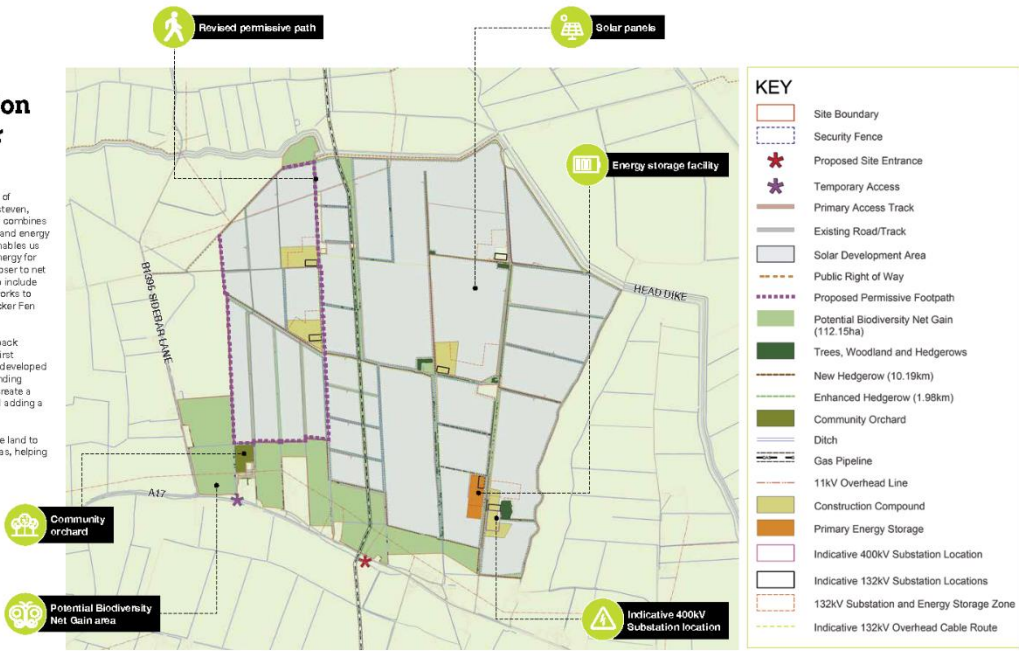
We need you to make your voice heard to help us deliver the best possible project.

What is Heckington Fen Solar Park?

Located near the village of Heckington in North Kesteven, Lincolnshire, our project combines a large-scale solar park and energy storage facility, which enables us to store excess green energy for later use – moving us closer to net zero. The proposals also include a grid connection and works to extend National Grid Bicker Fen Substation.

In response to the feedback we received during the first consultation period, we developed a new Site Layout, extending our permissive path to create a longer circular route and adding a community orchard.

We will set the rest of the land to biodiversity net gain areas, helping pollinators to flourish.



Who is Ecotricity?

Founded by Dale Vince OBE in 1996, Ecotricity became the world's first green electricity company the following year, kick-starting the global green electricity movement.

Ecotricity is a green energy company specialising in the development and supply of renewable energy, principally the development of wind and solar power and, more recently, green gas. Since 1996 Ecotricity has been building new sources of green energy and now supply around 200,000 businesses and homes.

Ecotricity is committed to minimising climate change through the development of renewable energy generation. This helps reduce the nation's reliance on fossil fuels for electricity generation and minimise the release of carbon dioxide (CO₂) into the atmosphere.

Ecotricity was the first energy company to offer its customers green electricity, starting with one windmill in Gloucestershire and continuing to build new projects around Britain. Whenever a home or business switches to Ecotricity for their electricity, they stop using fossil fuel to power their home and start using green energy.

Other energy companies have followed this lead, and today around 35% of the energy used in the UK comes from green sources. But there's still a long way to go, and there are still fossil fuel power stations across the country, coughing CO₂ into the air. Ecotricity want to stop that by continuing to build wind and solar parks and exploring other ways of sustainably producing electricity.

“ The proposed solar park at Heckington Fen is an exciting opportunity to fight the climate emergency. ”

Dale Vince
Founder of Ecotricity





Our Vision for Heckington Fen



Our Solar Park will contribute towards the UK's ambition to achieve net zero by:

- Generating enough affordable green electricity to power over 100,000 homes – reducing our dependence on imported fossil fuels
- Storing energy – providing additional flexibility to support the growth of renewable energy
- Removing more than 75,000 tonnes of harmful CO₂ emissions per year



The Project will enhance the local environment. We will:

- Create additional wildlife habitat
- Plant and manage new hedgerows
- Reinforce boundary planting
- Establish habitat corridors, helping birds thrive
- Offer a new permissive path over 4 kilometres that links to the existing footpath in the area



Heckington Fen will support the local economy by:

- Creating jobs and supply chain opportunities
- Giving farmers an additional source of income, protecting the agricultural industry for future generations
- Adding business rates of over £1m per year to North Kesteven District Council

We need you to have your say to deliver these benefits – for Lincolnshire and the UK.

How to have your say

You can take part in the consultation in the following ways:

Attend a public exhibition

Come and meet the project team at one of our face-to-face exhibitions in July.

- **Heckington Village Hall**
9-11 High St, Heckington NG34 6RA
13:00 – 20:00, Thursday 7 July 2022
- **Bicker Village Hall**
Cemetery Road, Bicker PE20 3BT
12:30 – 20:30, Friday 8 July 2022
- **Heckington Show Hall Grounds**
Heckington, Sleaford NG34 6JF
08:00 – 17:00, Saturday 30 and
Sunday 31 July 2022

Attend a webinar

Register to join one of our online webinars on our **project website**, via email, or over the phone.

- **Online**
Tuesday 5 July 2022 – 12:00-13:30
- **Online**
Saturday 23 July 2022 – 11:00-12:30
- **Online**
Wednesday 3 August 2022 – 18:00-20:30

Web site: <https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park>
Email: heckingtonfensolar@ecotricity.co.uk
Freephone: 0800 151 0784

Complete a feedback form

Find this at <https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park> or complete a paper copy

To receive a paper copy, please get in touch via email, over the phone, or by post.

Email: heckingtonfensolar@ecotricity.co.uk
Freephone: 0800 151 0784
Post: **FREEPOST ECOTRICITY SOLAR PARK**

The deadline for comments is 23:59 on 1 September 2022.

“ We want to thank all of those who took part in our first consultations on the solar park – we’re grateful for the generally positive feedback we’ve received to date, and look forward to continuing our conversations with the local community as our plans progress. ”

Dale Vince
Founder of Ecotricity

Alternatively, you can collect a paper copy of the feedback form at our consultation events or from the following public information points:

North Kesteven District Council
Kesteven Street, Sleaford, Lincolnshire, NG34 7EF
Opening hours:
08:00 – 17:00 Monday to Wednesday by appointment (01629 414166)

Lincolnshire County Council
County Offices, Newland, Lincoln, LN1 1YL
Opening hours:
08:30 – 17:00 Monday to Thursday
08:30 – 18:30 Friday

Boston Borough Council
Municipal Buildings, West Street, Boston, Lincolnshire, PE21 8QR
Opening hours:
08:45 – 17:15 Monday to Thursday
08:45 – 18:45 Friday

Heckington Community Hub
Council Chambers, St Andrew’s Street, Heckington, Sleaford, Lincolnshire, NG34 6RE
Opening hours:
10:00 – 12:00 Monday to Saturday

Boston Library
County Hall, Boston, Lincolnshire, PE21 6DY
Opening hours:
08:00 – 17:00 Monday to Wednesday
08:00 – 18:00 Thursday
08:00 – 17:00 Friday
08:00 – 18:00 Saturday

Sleaford Library
13 – 15 Market Place, Sleaford NG34 7SR
Opening hours:
08:00 – 17:00 Monday to Wednesday
08:00 – 18:00 Thursday
08:00 – 17:00 Friday
08:00 – 13:00 Saturday

You can send these forms via email (heckingtonfensolar@ecotricity.co.uk) or by post (to **Freepost ECOTRICITY SOLAR PARK**).

Our team will consider all feedback and use it to develop the proposals, ensuring we have due regard to the issues and concerns that you raise.



Our proposals



Overview

The Project is made up of a number of different components, the main part being the solar park itself – shown on the map on pages 8-9. Below we provide further detail on the key components within the site, as well as the national grid connection and associated works at Bicker Fen Substation.

A number of factors have contributed to the current layout of the solar panels. These include ensuring solar panels and associated equipment is set back from neighbouring properties and existing watercourses and utilities, feedback from the early phase of engagement and through consultation with the landowner, drainage board and known utility asset owners.

Solar panels convert light into direct current (DC) electricity through a process known as the photovoltaic effect. Photovoltaic cells are predominately made up of glass and aluminium, and two layers of a semi-conducting material, typically silicon. When light hits the silicon molecules in both layers, the electrons start to move. The metallic strips along the panels collect the electrons. The electricity is converted from DC to alternating current (AC) by inverters.



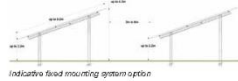


Solar PV panels

Individual modules/panels are typically 2-2.5 metres long and 1-1.5 metres wide and consist of a series of poly-crystalline cells which make up each panel. The module frame is typically built from anodised aluminium. Several panels can be installed in either the landscape or portrait orientation on the racking.

The number of modules required will be dependent upon the final design layout and the type of panels used. Currently, two panel options are being considered:

1. Fixed racking - panels fixed in one position (facing south)
2. Solar trackers - panels that rotate to track the sun throughout the day.



Indicative fixed mounting system option



Indicative tracking mounting system option

Each row of panels will be mounted on a rack supported by steel poles driven into the ground. Various mounting structures are available however, driven poles are currently expected to be the most likely foundation solution. Between each row of panels there could be an average separation distance of approximately 3.5 metres to maximise generation and allow sufficient access for maintenance, however other distances have been considered e.g. 0-6 metres for fixed panels, and 2-4 metres for trackers.

The assessments within the Preliminary Environmental Information Report (PEIR) have assumed that the panel modules are mounted on structures with a clearance of a maximum of 2.2 metres and an upper height of a maximum of 4.5 metres. This upper height is subject to ongoing modelling for flood heights on the Site and may be reduced. Typical panels will be situated at least 1 metre off the ground. The trackers would pivot them, meaning they may come within 0.1 metres of the ground.

Inverters, Transformers and Switchgear

Inverters

Inverters are required to convert direct current (DC) electricity generated by the solar panels into alternating current (AC) which allows the electricity to be exported to the national grid. Inverters are sized to deal with the level of voltage which is created by the rows of panels.

Based on the current layout we have anticipated a maximum of 127 inverters will be distributed throughout the site. The unit itself tends to be contained within associated control and switchgear equipment within a 10 metres x 4 metres x 4 metres container.

Transformers

Transformers are required to control the voltage of the electricity generated across the energy park and efficiently transmit the power to the development substation. A main 400kV step-down transformer will be required at the main on-site substation and, in order to connect the inverters throughout the site, up to six distribution step-down transformers may be installed. For distribution power transformers, the dimensions will be approximately 10 metres x 10 metres x 10 metres. For sub-distribution power transformers, the dimensions will be approximately 7 metres x 4 metres x 4 metres.

Switchgear

Switchgear is required to control, protect and isolate electrical equipment. It is composed of electrical disconnect switches, fuses or circuit breakers. Switchgear is proposed across the site, likely within the compounds for the 120kV substations. The maximum dimensions are proposed to be 15 metres x 10 metres x 5 metres.





Energy Storage

An energy storage facility will form part of the proposed development. The primary energy storage area is proposed to be located in the south-eastern section of the site, either in a series of individual containers or housed within a larger building(s). It is estimated at this time that the storage capacity of this site would be approximately 200-400MWh. Further areas of land for energy storage are being assessed within other parts of the Site. Each of these areas are near to a substation location. A maximum of 2.8 hectares is set aside for this element with the energy storage units having a maximum height of 8 metres.

The final design for the energy storage system has not yet been finalised, but will likely include batteries, inverters and system controllers. Any system installed will be strenuously tested during the factory and pre-commissioning testing regime before being given the final sign off to energise.

Onsite cabling

Our current proposals contain options for a mixture of below ground and above ground cabling for the solar park. Any above ground cabling will be attached to poles which would traverse the site. The maximum height of these poles could be 30 metres.

As the design of the Site develops further it will be determined if any above ground cabling is required. All below ground cabling will be laid into trenches and then the soil will be re-laid. The process will follow a soil management plan to ensure that the soil structure and quality are not degraded as part of the construction process.

The cabling will transfer the energy from the solar panels to the nearest of the onsite distribution substations. Energy from these substations will be taken to the 400kV substation before leaving the Site to enter the grid at the National Grid Electricity Transmission 400kV Bicker Fen substation.



Onsite substations

Our current design includes up to six onsite substations and one 400kV substation within the Site. This is a design difference from the information presented within previous consultation which indicated a single substation area on the Site. Since then, further design work has taken place and has determined that a series of substations may be required. These substations will have dimensions of around 60 metres x 40 metres x 10 metres. The main 400kV substation could be 135 metres x 80 metres with some of the equipment being a maximum height of 15 metres.

The main 400kV substation will include a control building which will include office space and welfare facilities as well as operational monitoring and maintenance equipment. The dimensions of this control building are dependent on further assessment work. A worst-case scenario is expected to be approximately 20 metres x 10 metres x 3 metres.

Customer Switchgear

Switchgear is proposed around the site, likely within a control building alongside the substations and energy storage.



Fencing, Security and Lighting

A fence will enclose the operational areas of the Site. The fence is likely to be a metal mesh fence of approximately 3 metres in height. A pole mounted closed circuit television (CCTV) system will be installed around the perimeter of the Site, and will face towards the Energy Park and away from any land outside of the Site. These cameras will be mounted on poles of 3.5 metres height located within the perimeter fence.

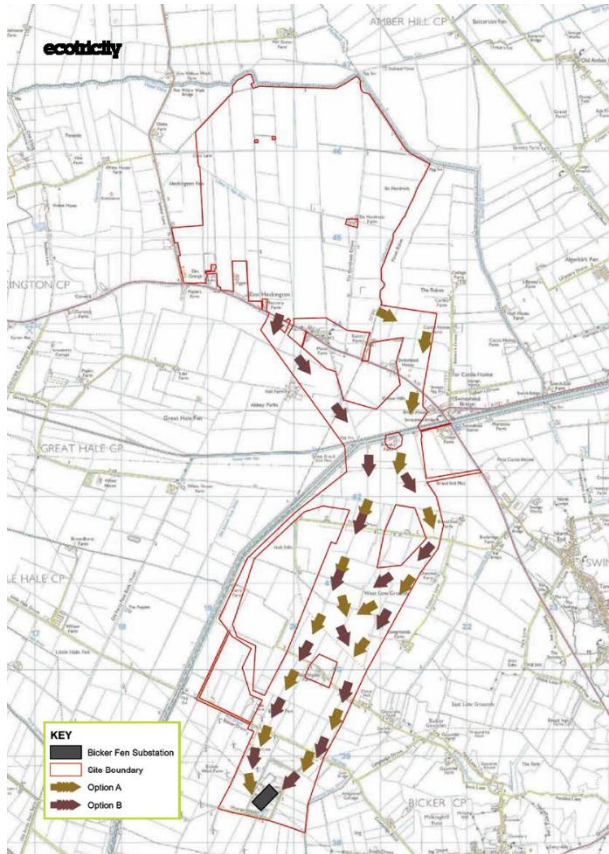
It is likely that lighting on sensors will be installed around the energy storage area and potentially at any other pieces of critical infrastructure for security purposes. No areas of the development are proposed to be continuously lit during operation. Security cameras typically use infrared lighting.

Site Access and Access Tracks

Currently there are a number of proposed access points into the Site from the A17. It is proposed to use the existing access point near Elm Grange for the very initial stages of construction. The initial phase of construction will include the construction of a new point of access onto the Site from the A17, which will take approximately eight weeks to construct. This new access point was previously approved for the wind farm application and will require the creation of a new T-junction.

Once on site the access track will continue northwards and from this point minor internal access tracks will connect the rest of the site.





Offsite cabling

The proposed connection point is the National Grid Bicker Fen Substation. This is an existing 400kV substation that is located approximately 5.5 kilometres south of the Site as the crow flies. The exact route for the cable route to connect the solar park to this substation is still being determined, but we have designed the following two indicative route options:

Option A: Eastern Route
Option B: 60-60 Route

These names are derived from their position in relation to the South Forty Foot Drain (one of the main features the cable route would pass).

The Eastern Route (Option A) would leave the Solar Park on the eastern boundary of the Site, cross the Viking Link and Triton Knoll connections, cross the A17, and head south towards Bicker Fen Substation. Once this route option passes south of the Forty Foot Drain, the cables could be located anywhere within the red line boundary. The Option A arrows on the map (left) are indicative of where the cables could be positioned.

The 60-60 Route (Option B – named as it covers elements of The Eastern Route, and a now discounted Western Route) would leave the Solar Park at the site entrance, on the eastern side of a high-pressure gas pipe, and head south towards Bicker Fen Substation. Similar to Option A, once this route option passes south of the Forty Foot Drain, the cables could be located anywhere within the red line boundary. The Option B arrows on the map (left) are indicative of where the cables could be positioned.

Option A is the shortest route option and would be the easiest for our construction vehicles to access. Although it would require more drilled sections than Option B, these sections would be shorter (in terms of distance).

ecotricity

Option B is slightly closer to properties near the site entrance and its drilled sections would be longer (in terms of distance) but there would be less of them.

All the new offsite cabling will be laid underground. At certain points along the route, it will be necessary to drill under 'obstacles' such as roads, watercourses and utilities.

There will be no new above ground power lines for the offsite cabling.

Bicker Fen Substation Works

The electricity generated is expected to be exported via a connection from the Site to the existing National Grid Bicker Fen Substation.

This will require an extension to the existing structures at Bicker Fen Substation. The location of this extension has not yet been confirmed by National Grid, however ongoing discussions indicate the likely location of the extension will be on land to the immediate south-west of the existing substation. This area of land is currently an area of rough grassland bounded by woodland. The area of land required for this extension is approximately 146 metres x 46 metres.

This extension will include new equipment which will look similar to the units already installed at the Bicker Fen Substation, and will likely be approximately 65 metres x 30 metres. It is expected that the maximum height of this new unit will be 15 metres, which is similar to the units already installed at Bicker Fen. A perimeter road is proposed within the wider design area which will be approximately 4.5 metres wide.

Environmental Impact Assessment (EIA)

Overview of EIA process

EIA is a process to identify the potential effects that a proposed development may have on the environment, people and local communities. This process involves consultation with affected communities and other stakeholders to ensure that the EIA has identified the relevant effects of the Project. These effects can be positive or negative.

Through the design evolution process, we are working to reduce the negative effects of the Project and provide enhancements where possible.

What information are we providing for this consultation?

The preliminary EIA findings for Heckington Fen Solar Park are reported within the Preliminary Environmental Information Report (PEIR). The PEIR has been prepared for the purposes of statutory consultation.

It helps members of the public, consultation bodies and other stakeholders to develop an informed view of the likely significant effects of the Project, as identified at this stage, and comment on particular areas of interest.

This consultation is taking place before we finalise our design as part of our application for development consent. Alongside this application, we will provide a full Environmental Statement, which will report the outcome of the EIA process.

How can I access this information?

The full suite of PEIR documentation can be found on our website. To allow you to read information on impacts and topic areas that are important to you, we have divided the PEIR into the following topic areas:

- Chapter 1 Introduction
- Chapter 2 EIA Assessment Methodology
- Chapter 3 Site Description, Site Selection and Iterative Design
- Chapter 4 Proposed Development
- Chapter 5 Planning Policy
- Chapter 6 Landscape and Visual
- Chapter 7 Residential Amenity
- Chapter 8 Ecology and Ornithology
- Chapter 9 Hydrology, Hydrogeology, Flood Risk and Drainage
- Chapter 10 Cultural Heritage
- Chapter 11 Socio-economic
- Chapter 12 Noise and Vibration
- Chapter 13 Climate Change
- Chapter 14 Transport and Access
- Chapter 15 Air Quality
- Chapter 16 Land Use and Agriculture
- Chapter 17 Glint and Glare
- Chapter 18 Miscellaneous Issues
- Chapter 19 Summary
- Chapter 20 Glossary

The PEIR contains a series of appendices and technical plans, which can also be accessed on our website or viewed in person at one of our consultation events.

A non-technical summary (NTS) of the PEIR is also available to view on the project website, at consultation events or a hard copy can be sent on request.

Summary of effects

As part of the EIA process we have identified areas where there are potentially significant impacts. Where these have been identified to be adverse significant impacts, we set out proposed mitigation measures. These are summarised in the table below.

Area of assessment	Effects	Proposed mitigation
Landscape and visual impact	We have identified potential impacts on a number of viewpoints looking into the proposed site	We are proposing a range of measures, including: <ul style="list-style-type: none"> • Significant hedgerow planting • Designing the site to be less visible from certain locations • Additional landscaping and planting around the perimeter of the site
Land use and agriculture	Potential loss of agricultural land from cumulative solar farms	Determining if land is classed as Best and Most Versatile and allowing agricultural activities to continue on land for operational lifetime of solar schemes
Climate change	The climate change impacts of the proposed development would have a significant beneficial impact through the production of green energy for the UK	No mitigation needed
Socio-economic	The proposed development will generate a beneficial impact through the creation of local job opportunities and investment in the local economy over the lifetime of the Project	No mitigation needed

Prior to the implementation of the proposed mitigation measures, significant effects are not anticipated in relation to the following topics and these are therefore not discussed further in this chapter:

- Hydrology, Hydrogeology and Flood Risk and Drainage
- Cultural Heritage
- Air quality

In the next section, we set some of the findings from key areas of our assessments.



Landscape and Visual

The potential landscape and visual impacts have been considered as part of our EIA in Chapter 6 of the PEIR. The assessments we've carried out are based on the maximum parameters of the current site layout and proposed equipment, including solar panels, substation, overhead power cables and fencing as described above. Some elements of the proposal are not yet known and will be finalised for the Environmental Statement which will be submitted as part of our planning application.

During the construction and operational phases of the Project we have identified the potential for effects to those with a view of the proposed solar park site and Bicker Fen Substation. To ensure we mitigate any impacts as much as possible, we have developed the design of the site to reduce the area of land where solar panels will be located. This has been done to provide greater separation from nearby residential and commercial properties.

We have also considered existing landscape elements of the site when looking to locate certain features within the solar park. This includes the current location for the proposed 400KV substation which is currently in the south east corner of the solar park site to maximise visual screening provided by the existing blocks of woodland and tree lines.

Our design also ensures watercourses and proposed new vegetation can be accessed for maintenance when required. Existing hedgerows and lines of trees within the solar park would be protected and enhanced using appropriate species. New hedgerows would be established along the southern and western edges of the solar panels, and within the site.

As part of the solar park, a new community orchard is being proposed in the south western corner of the site. This would be located immediately to the north of the new school at Elm Grange. The orchard would be available for use by the new school at Elm Grange, parish councils and community groups by arrangement. The access arrangements are still being determined.

Ecotricity acknowledges that the proposed solar park will have visual impacts due to the nature of the proposals. We have, however, sought to limit any significant impacts through our proposed vegetation planting and screening, as well as designing the site to reduce impacts where possible.



Land use and agriculture

The potential land use and agricultural impacts have been considered as part of our EIA in Chapter 16 of the PEIR. We have looked at impacts during construction, operation and decommissioning.

The solar park and associated equipment will cover approximately 668 hectares (approximately 1460 acres). This area includes the solar panels, energy storage, biodiversity net gain areas and all associated infrastructure. The cable route is expected to be 7 - 9 kilometres long depending on the final route taken.

During construction, there will likely be impacts to areas required for access and areas where equipment will be located. Through careful design, any impacts will be minimised where possible. There will be normal ongoing agricultural grazing land uses and agricultural management of the grassland beneath the solar panels and the areas used for biodiversity net gain during operation.

These assessments through the PEIR have identified that there are no significant adverse effects on agricultural land quality that cannot be mitigated. Through a combination of careful mitigation, management and good practice measures, which would be implemented through the Construction Environmental Management Plan (CEMP), the agricultural land quality will not be significantly adversely affected. In addition, with careful planning and practice any localised effects on farm businesses can be avoided or mitigated, and measures will be secured within the CEMP.



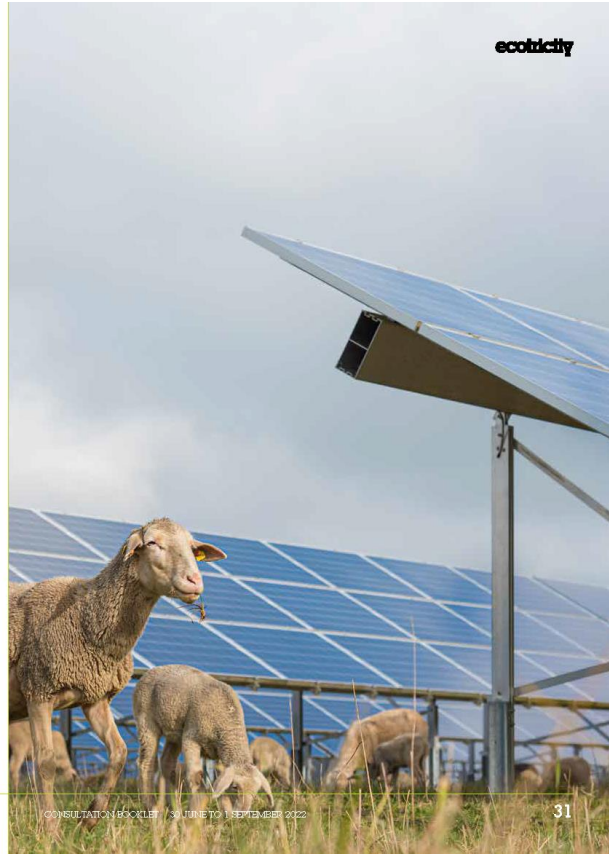
Noise and vibration

The potential noise and vibration impacts have been considered as part of our EIA in Chapter 12 of the PEIR. We have looked at impacts during construction, operation and decommissioning. This includes noise associated with construction traffic as well as noise associated with the day to day operations of the solar park.

We have identified that noise and vibration from construction activities may be heard or felt at times, but with the proposed mitigation in place the effects are likely to be classed as not significant or negligible. This mitigation includes working within fixed day time hours, including some restrictions on weekend working, as well as following good practice construction methods. Similarly, noise and vibration from traffic during construction is likely to have little or no effect.

During construction, we have identified potential significant noise effects if we needed to carry out construction of our cable trench to Bicker Fen through the night, if night time work was required we propose to manage any impacts through localised screening, as well as engaging directly with any local residents likely to be affected.

Any noise associated with the operation of the proposed development would be managed through careful design to minimise impact on nearby residents, along with screening and vegetation planting to reduce noise impacts.





Transport and access

The potential transport and access impacts have been considered as part of our EIA in Chapter 14 of the PEIR. We have looked at impacts during construction, operation and decommissioning.

Access to the solar park during the construction and operational phases is proposed via the A17 to the south of the site (see map on page 6). Whilst the proposed access is under construction, a temporary construction access will be provided via an existing junction with the A17, approximately 600 metres southeast of B1395 Sidsbar Lane junction.

The cable route will be accessed using existing junctions with the A17. At this stage, the exact point of access to the proposed connection point at Bicker Fen Substation is not confirmed. However, it is anticipated that access to the north of the railway line will be served via Parks Farm, if this route is progressed. The preferred access option to the south of the railway is via the existing Triton Knoll or National Grid access points at the A17 and the A52 Bicker Road respectively. However, the assessments have also considered access to the proposed connection point via Royalty Lane. Where possible, any access and routing options would seek to avoid Bicker village.

For traffic movements associated with the solar park, we are assuming an 18 month construction period and a six day working week.

During this time we predict around nine HGV deliveries per day on average (or up to 18 two way movements per day). This could be higher or lower at times depending on the stage of construction. In addition to the HGV movements, there will also be a small number of construction movements associated with smaller vehicles such as the collection of skips for waste management, the transport of construction workers and sub-contractors.

Once operational, it is anticipated that there will be around one to two visits to the solar park per day for equipment maintenance, cleaning, and tending to the sheep and biodiversity areas.

A Construction Traffic Management Plan (CTMP) will be implemented during the construction phase of the Project. A draft version of the CTMP has been prepared as part of the PEIR and is available on the project website or on request. The aim of the CTMP is to minimise the impact of the construction phase on local residents, businesses and the highway network. Construction traffic movements will be kept to agreed working hours where practicable and designed to minimise disruption to the highway network and local residents (including during the night-time).



Ecology and Ornithology

The potential ecology and ornithology impacts associated with Heckington Fen Solar Park have been considered as part of our EIA in Chapter 8 of the PEIR. The proposed development will be situated within an intensively farmed landscape.

We will produce an Outline Construction Environmental Management Plan (OCEMP) along with our DCO application, which will ensure there is no damage to any hedgerows, woodland or watercourses during construction. The implementation of this OCEMP will ensure there is no significant disturbance or risk of injury or death of breeding farmland birds, disturbance to wintering wetland birds, badgers or brown hares.

The proposed design will also ensure all panels and equipment will be set back from all watercourses by a minimum of 8 metres, this will help ensure protection of animals, including water vole if they re-colonise the site.

We are also proposing a significant amount of biodiversity enhancements are part of the design which is predicted to amount to over 200% net gain on the existing site. This includes:

- Converting 440 hectares (1,087 acres) of intensive arable farmland beneath the solar panels to low intensity sheep pasture.
- creation of 96 hectares (237 acres) of new grasslands
- a further 46 hectares (113 acres) of species rich grassland within the energy park will be managed to maximise the nature conservation value
- 1.8 hectares (4.4 acres) of community orchard which is managed specifically for nature conservation



Socio-economic

The potential socio-economic impacts associated with the proposed development have been considered as part of our EIA in Chapter 11 of the PEIR.

Our assessments indicates that the Project could deliver over 60 temporary jobs during the 18 month construction phase as well as wider investment in the local economy.

During operation, the Project could create an additional 13 full-time jobs for North Kesteven as well as tens of millions of pounds of investment in the local economy, including over £1m per year for North Kesteven in business rates for the 40 year lifespan of the Project.

Consultation and next steps

Overview of consultation

We're consulting on our proposed solar park and energy storage facility from 30 June to 1 September 2022.

We first consulted local residents and stakeholders between 22 October and 17 December 2021. We're now formally consulting you on the proposed application for the solar park, which includes the new site layout, that has been developed in response to the feedback we received during the first consultation period.

But the exact detailed design has not been determined yet we need your feedback to help us achieve the site's full potential.

This round of consultation gives you another (formal) opportunity to provide your views before we submit our application to the Planning Inspectorate next year.

After this consultation round, we will consider all your comments and use them to develop our proposals, ensuring we have due regard to the issues and concerns raised.

How to provide feedback

We want to hear your views on our proposals. Your feedback is important to us and can help to shape our final designs.

So, we want to make it as easy as possible for you to provide feedback.

There is an online version of the feedback form on our project website (<https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park>) and we would appreciate you taking the time to provide your comments there.

The deadline for comments is 23:59 on 1 September 2022.

If you would like a hard copy of this form, please let us know using the details below.

 heckingtonfensolar@ecotricity.co.uk

 0800 1 61 0784

 FREEPOST ECOTRICITY SOLAR PARK

Consenting timeline

As the proposed generation capacity exceeds 50 megawatts (MW), Heckington Fen Solar Park will be classified as a Nationally Significant Infrastructure Project (NSIP). The consenting regime for NSIPs comes under the Planning Act 2008 (the Act) and requires Ecoticity to apply for a Development Consent Order (DCO).

Ecoticity (Heck Fen Solar) Limited (the Applicant) intends to submit an application for a DCO under Section 37 of the Act to the Planning Inspectorate (PINS).

The Application would be examined by PINS – the independent body responsible for examining NSIPs – who would make a recommendation on the application to the Secretary of State (SoS). The SoS makes the final decision on a DCO application.

Before submitting the DCO application, the Act requires us to carry out consultation with people living in the vicinity of the land and prescribed stakeholders.

Early involvement of communities, local authorities and other stakeholders helps to ensure we listen to your views and identify valuable information about the potential effects of the Project. It further provides an opportunity for early feedback from stakeholders to help shape the Project's development.

Early involvement also ensures that potential mitigation measures can be considered and, where appropriate, built into our designs before we submit an application for development consent.

You can find out more about the DCO process at <https://infrastructure.planninginspectorate.gov.uk/>

PINS has also published guidance on the process for members of the public, which can be viewed online at <https://infrastructure.planninginspectorate.gov.uk/>

Community benefits

Community Benefit is not a planning consideration. However in addition to the new permissive path, community orchard and biodiversity enhancement, a community benefit fund is being explored and could be provided as a part of our development.

Any community benefit fund would need to be in line with our mission to end the use of fossil fuels and tackling the climate crisis. This focuses on three key areas of the economy that generate the most carbon emissions: energy, transport and food.



Where to find out more

You can find further information and details of the site's progress at www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park



Please scan the QR code to be directed to our website, where you can find a handy video explaining the site layout.

The Planning Inspectorate's advice notes can be accessed free of charge electronically at the National Infrastructure Planning Portal (under Heckington Fen Solar Park, s51 advice) <https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/heckington-fen-solar-park/>

Contact details

If you'd like to talk to us about Heckington Fen Solar Park or view a hard copy of any of our materials, please let us know using the following details:

✉ heckingtonfensolar@ecotricity.co.uk

☎ 0800 151 0784

✉ FREEPOST ECOTRICITY SOLAR PARK

Every effort has been made to ensure that the information here is accurate at the time of going to print. If you do not wish to be contacted in relation to Heckington Fen Solar Park, please email our team on heckingtonfensolar@ecotricity.co.uk

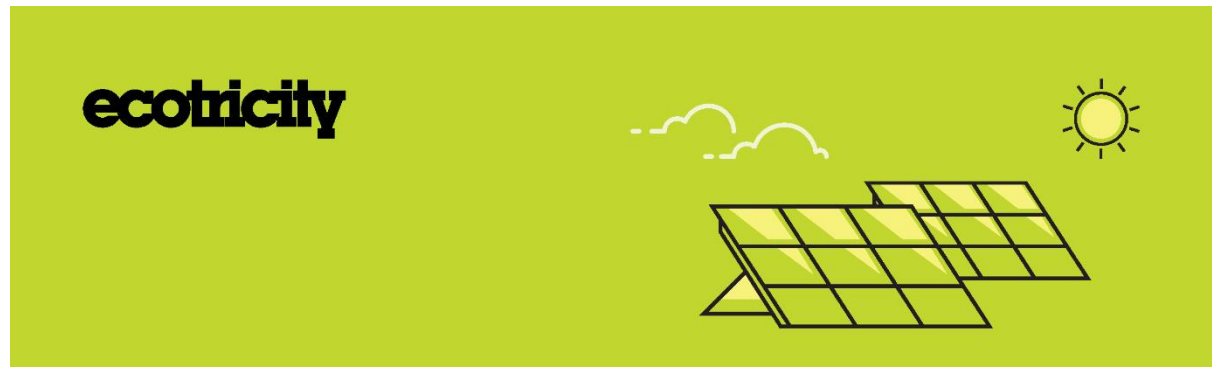
Images used in this document are indicative.



ecotricity



15.2 Feedback form



Heckington Fen Solar Park

Consultation Feedback Form

30 June to 1 September 2022





Please complete this feedback form to let us know your views on our proposals for the solar park, energy storage facility and associated infrastructure.

We are developing proposals for a solar park and energy storage facility which will be situated north of the A17 between Sleaford and Boston, near East Heckington.

Our proposal could generate enough affordable green electricity to power over 100,000 homes and save an estimated 75,000 tonnes of harmful CO₂ emissions every year – the equivalent of taking more than 30,000 cars off the road¹. It will contribute towards the Government's energy security strategy, which calls for an additional 56GW of solar electricity generation to be up and running by 2035.

In Autumn 2021 we asked for your views on our early-stage proposals during our non-statutory consultation. We have been developing our proposals carefully in response to the feedback received and our ongoing survey and design work.

We are now seeking your views as part of our statutory consultation where we are presenting more detailed proposals for Heckington Fen Solar Park. This statutory consultation is being undertaken under the requirements of the Planning Act 2008. It is likely to be our last consultation on the Project before we submit our Development Consent Order (DCO) application to the Planning Inspectorate.

We have prepared a Consultation Booklet, which includes a description of the project elements, information about the Environmental Impact Assessment (EIA), The Preliminary Environmental Information Report (PEIR) and details of how you can respond to the consultation.

Please refer to the Consultation Booklet for additional information to help you provide us with your feedback on our proposals. You may wish to refer to the PEIR, or to the shorter Non-Technical Summary (NTS) of the PEIR, for more detailed information.

Electronic copies of all the consultation documents, including this feedback form, can be found online on the project website (<https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park>). You can provide your feedback using this form, through our website, or contacting us by email or Freepost:

- Access our website at <https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park> where an online version of this form is available
- Email us your completed form, or feedback, at heckingtonfensolar@ecotricity.co.uk
- Return this feedback form free of charge by writing to FREEPOST ECOTRICITY SOLAR PARK (no stamp required)

You do not have to answer all of the questions in this feedback form, and if you wish to make any other comments on the Project there is space set aside at the end of this form.

The statutory consultation will run from **Thursday 30 June 2022** and **23:59 on Thursday 1 September 2022**. It is important you submit your feedback and comments to us before the closing date, so that we can consider them in our proposals.

¹To see how these numbers are calculated please visit our webpage:
<https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park>

Data privacy notice

We are committed to protecting your personal information. Whenever you provide such information, we are legally obliged to use it in line with all applicable laws concerning the protection of personal data, including the UK General Data Protection Regulation (GDPR).

How will Ecotricity use the information we collect about you?

We will use your personal data collected via this consultation for a number of purposes, including:

- To analyse feedback to the consultation;
- To produce a Consultation Report, based on our analysis of responses (individuals will not be identified in the Report);
- To write to you with updates about the results of the consultation and other developments; and
- To keep up-to-date records of our communications with individuals and organisations.

Any personal information you include in this form will be handled and used by (or made available to) the following recipients to record, analyse and report on the feedback we receive:

- Ecotricity
- The Planning Inspectorate (which will consider our application for permission to build the Heckington Fen Solar Park)
- The Secretary of State (who will take the decision on our application)
- Our legal advisers; and
- External consultants working on the Heckington Fen Solar Park Project.

What rights do I have over my personal data?

Under the terms of the UK GDPR, you have certain rights over how your personal data is retained and used by Ecotricity. For more information, see our full data privacy statement: www.ecotricity.co.uk/the-legal-stuff/privacy-policy

About you

Name

Organisation (if applicable)

Address

Postcode

Email address

Phone number

1. How would you describe your interest in our proposals?

Local resident
 Local representative
 Landowner
 Work locally
 Regularly visit the area
 Statutory body
 Local interest group (please name them)
 Other (please specify)

The need for the project

2. Please indicate whether you agree or disagree with the following statements:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Don't know
Climate change is an important issue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy security is an important issue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moving away from fossil fuel use is important	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The UK needs more renewable energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The UK needs more energy storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please let us know the reasons for your responses and any other comments you have:

3. Please tell us your views on solar energy:

- | | | |
|---|--|-------------------------------------|
| <input type="checkbox"/> Strongly support | <input type="checkbox"/> Support | <input type="checkbox"/> Neutral |
| <input type="checkbox"/> Oppose | <input type="checkbox"/> Strongly Oppose | <input type="checkbox"/> Don't know |

4. Do you support Ecotricity developing new renewable energy projects that will contribute towards the UK's ambition to achieve net zero by 2050 ('net zero' means the amount of greenhouse gases, like carbon dioxide, the UK adds to the atmosphere is no longer more than what it takes out)?

- | | | |
|---|--|-------------------------------------|
| <input type="checkbox"/> Strongly support | <input type="checkbox"/> Support | <input type="checkbox"/> Neutral |
| <input type="checkbox"/> Oppose | <input type="checkbox"/> Strongly Oppose | <input type="checkbox"/> Don't know |

5. Please let us know the reasons for your responses to questions 3 and 4 and any other comments you have:

Views on the project

Solar Park Site Layout

In response to the feedback we received during the first consultation period, we have developed a new Site Layout for our Heckington Fen Solar Park. Please refer to the Consultation Booklet for the new proposed Site Layout, including the 'Our proposals' chapter for details on the key components within the Site. Additional detail can be found in Chapter 4 of the PEIR and the NTS.

6. Do you have any comments on the new proposed Site Layout and components within it? Please specify any components you're commenting on.

Connecting to National Grid and the Bicker Fen Substation

In the Consultation Booklet we explain that the cable route to connect the solar park to the Bicker Fen Substation is still being determined, and set out two indicative cable route options: Option A and Option B. We also provide information on the works to extend the Bicker Fen Substation. Additional detail can be found in Chapter 3 of the PEIR and the NTS.

7. Of the two indicative cable route options to connect the solar park to the Bicker Fen Substation, do you prefer Option A or Option B?

- Option A Option B Neither No preference Don't know

Please let us know the reasons for your response and any other comments you have about the indicative cable route options to connect the solar park to the Bicker Fen Substation.

8. Do you have any comments regarding the Bicker Fen Substation works?**Access routes**

During construction, the cable route will be accessed using existing junctions with the A17. The exact point of access to the proposed connection point at Bicker Fen Substation is not confirmed. However, it is anticipated that access to the north of the railway line will be served via Parks Farm, if this route is progressed. The preferred access option to the south of the railway is via the existing Triton Knoll or National Grid access points at the A17 and the A52 Bicker Road respectively. Where possible, any access and routing options would seek to avoid Bicker village.

Additional detail can be found in the Consultation Booklet, Chapter 14 of the PEIR and the NTS.

9. Please let us know your views on suitable access for construction of the cable route south of the railway line (i.e. between the railway line and the Bicker Fen Substation)**10. Please let us know if you have any other comments on accesses more generally.**

11. Do you support our approach to mitigating visual impacts? (e.g. vegetation planting and screening and setting the panels back from properties)

- Strongly support Support Neutral
 Oppose Strongly Oppose Don't know

Please let us know the reasons for your response and any other comments or suggestions you have about mitigating the visual impacts.

Ecology and Biodiversity

We are proposing a significant amount of biodiversity enhancements, which is predicted to amount to over 200% net gain on the existing site. This includes:

- Converting 440 hectares of intensive arable farmland beneath the solar panels to low intensity sheep pasture
- Creation of 96 hectares of new grasslands
- A further 46 hectares of species rich grassland within the energy park will be managed to maximise the nature conservation value
- 1.8 hectares of community orchard which is managed specifically for nature conservation

12. Do you support our approach to ecological enhancement?

- Strongly support Support Neutral
 Oppose Strongly Oppose Don't know

Please let us know the reasons for your response and any other comments or suggestions you have about ecological connectivity enhancement and mitigation.

Public recreation

Our proposals include measures to provide further opportunities for recreation and community leisure on the site. This includes a new community orchard in the south west corner of the site, which will be available for use by the new school at Elm Grange, parish councils and community groups by arrangement. In addition, we propose to include a new path over 4 km that links to the existing footpath in the area.

13. Would you or your community group be interested in using the community orchard?

- Yes No Don't know

Please let us know the reasons for your response and any other comments you have on our proposals for the community orchard.

14. Do you support our proposals for a path to walk through the site?

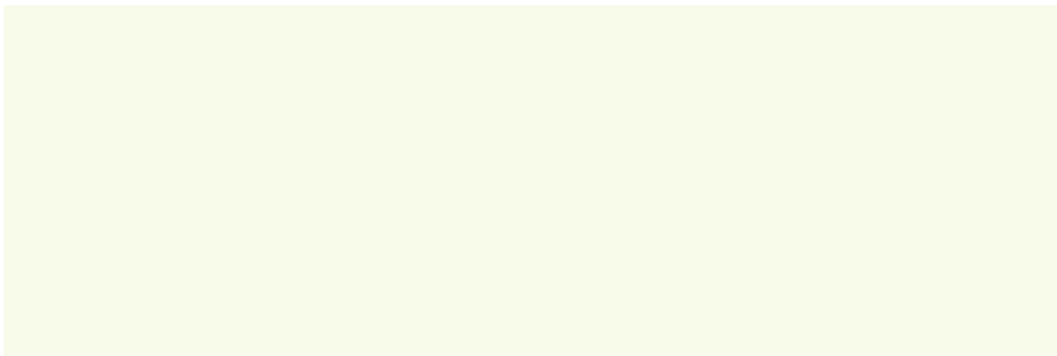
- Strongly support Support Neutral
 Oppose Strongly Oppose Don't know

Please let us know the reasons for your response and any other comments you have on our proposals for a path.

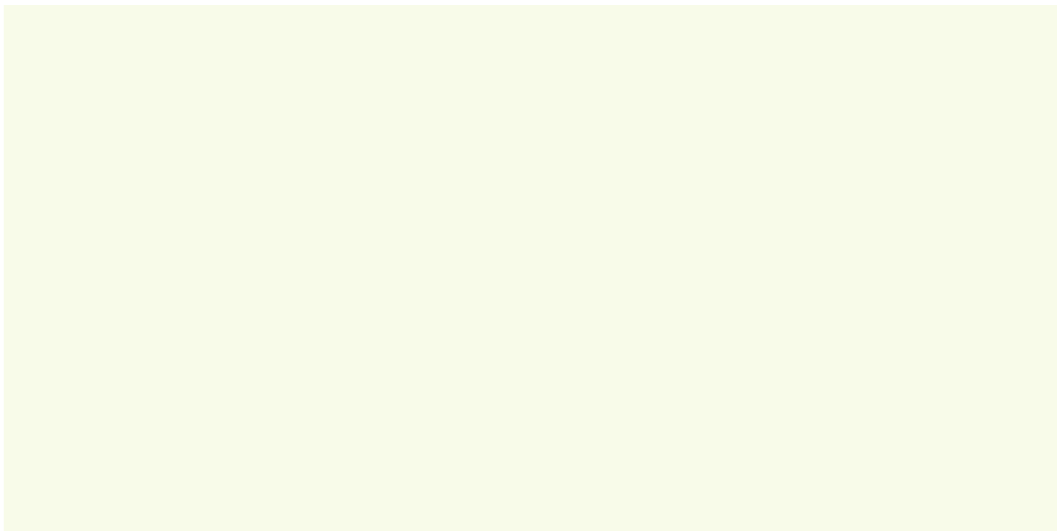
Preliminary Environmental Information Report (PEIR)

We've published our PEIR, along with a non-technical summary (NTS), setting out how we think our proposals would affect the local environment and communities. This includes any suitable mitigation measures to reduce any significant effects of the Project. Please refer to the PEIR, NTS and the Consultation Booklet to access information about the Environmental Impact Assessment carried out for the Heckington Fen Solar Park.

15. Do you have any comments on the environmental information and the suggested mitigation presented in our PEIR, NTS and Consultation Booklet? Please specify any environmental topic areas you are commenting on.



16. We would welcome any other comments you would like to make about the Heckington Fen Solar Park.



About the consultation

17. Please let us know how you heard about the consultation by ticking one or more of the following boxes:

- Received a newsletter Received a letter from Ecotricity
 Received an email from Ecotricity Received information from a local authority (please specify)

- Saw it advertised in a local newspaper
 Saw social media coverage Saw it on the project webpages
 Word of mouth Other (please specify)

18. Did you attend our face to face or online consultation events?

- Yes, both face to face and online Yes, only face to face
 Yes, only online No

19. How informative did you find our consultation events and/or our consultation materials?

- Very informative Quite informative
 Not informative No opinion

20. Please rate the information included as part of this consultation in terms of how clearly it was presented and how easy it was to understand:

- Very good Good Average
 Poor Very poor Don't know

21. Do you have any other further comments on the delivery of this consultation?

Equality and diversity

Ecotricity would be grateful if you could answer the following equality and diversity questions. We will use the information we receive to help us understand whether our consultation has been useful to people of different backgrounds and requirements. Data will be held in accordance with all data protection legislation. We may publish a summary of the results but no information about an individual will be revealed. The answers you provide to this question are defined as 'special category data'. If you agree to provide this information, you can withdraw your permission for us to use it at any time. To do that, please email heckingtonfensolar@ecotricity.co.uk

1. How would you define your gender?

- Male Female Transgender Other Prefer not to say

2. Age:

- Under 16 16-24 25-34 35-44 45-54
 55-64 65+ Prefer not to say

3. Please describe your ethnic background:

- White Mixed or multiple ethnic groups Asian or Asian British
 Black, Black British, Caribbean or African Other ethnic group
 Prefer not to say

4. Please let us know your current employment status:

- Employed full time Employed part-time Self-employed / freelancer
 Unemployed Studying Other
 Prefer not to say

Get in touch

You can find further information and details of the Project's progress at <https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park> or by getting in touch with the contact centre using the details below.

Email us: heckingtonfensolar@ecotricity.co.uk

Call us: **0800 151 0784**

Write to us: **FREEPOST ECOTRICITY SOLAR PARK**

Please note our Freephone line is open Monday to Friday 9:00am – 5:30pm; please leave a message outside of these times with a preferred time you'd like us to call you back.

15.3 Non-technical summary of the Preliminary Environmental Information Report (PEIR)



Development Consent Order Application for Ground Mounted Solar Panels, Energy Storage Facility, Below Ground Grid Connection to Bicker Fen Substation and All Associated Infrastructure Works at

Land at Six Hundreds Farm, Six Hundred Drove, East Heckington, Sleaford, Lincolnshire.

Preliminary Environmental Information Report
Non-Technical Summary

Ecotricity (Heck Fen Solar) Ltd.

Prepared by Pegasus Group | June 2022 | PINS REF: EN010123





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Quays Business Centre
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M1 2BN
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NOTE: THIS DOCUMENT IS DESIGNED TO BE VIEWED AS A4 DOUBLE SIDED



INTRODUCTION

1.1 Introduction

This document provides a Non Technical Summary (NTS) of the Preliminary Environmental Information Report (PEIR) which has been prepared on behalf of Ecotricity (Heck Fen Solar) Ltd (the “Applicant”) for the proposal of a ground mounted solar photovoltaic (PV) electricity generation and energy storage facility (hereafter referred to as “the Energy Park”) at Land at Six Hundreds Farm, Six Hundreds Drove, East Heckington, Sleaford, Lincolnshire.

The Applicant is planning to submit an application for a Development Consent Order (DCO) to the Secretary of State for Business, Energy, and Industrial Strategy for the construction, operation (including maintenance), and decommissioning of Heckington Fen Energy Park. The Heckington Fen Energy Park will comprise of the following three elements: the Energy Park, cable route to, and above ground works at, the National Grid Bicker Fen substation (hereafter referred to “the Proposed Development”).

Within the public consultation material, the scheme is referred to as Heckington Fen Solar Park, as the main infrastructure at the Proposed Development contains solar panels. Within the PEIR, the Proposed Development is assessed based on three elements as noted above, which includes the ‘Energy Park’, as within the main site, solar panel infrastructure and energy storage infrastructure have been technically assessed in the PEIR. The terms ‘Solar Park’ and ‘Energy Park’ have therefore been used interchangeably within some of the consultation documents. Where applicable, in the PEIR, descriptions are explicit when only referencing solar or energy infrastructure.

The Proposed Development site location is shown on **Figure 1**, and the boundary of the Energy Park is shown on **Figure 2**.



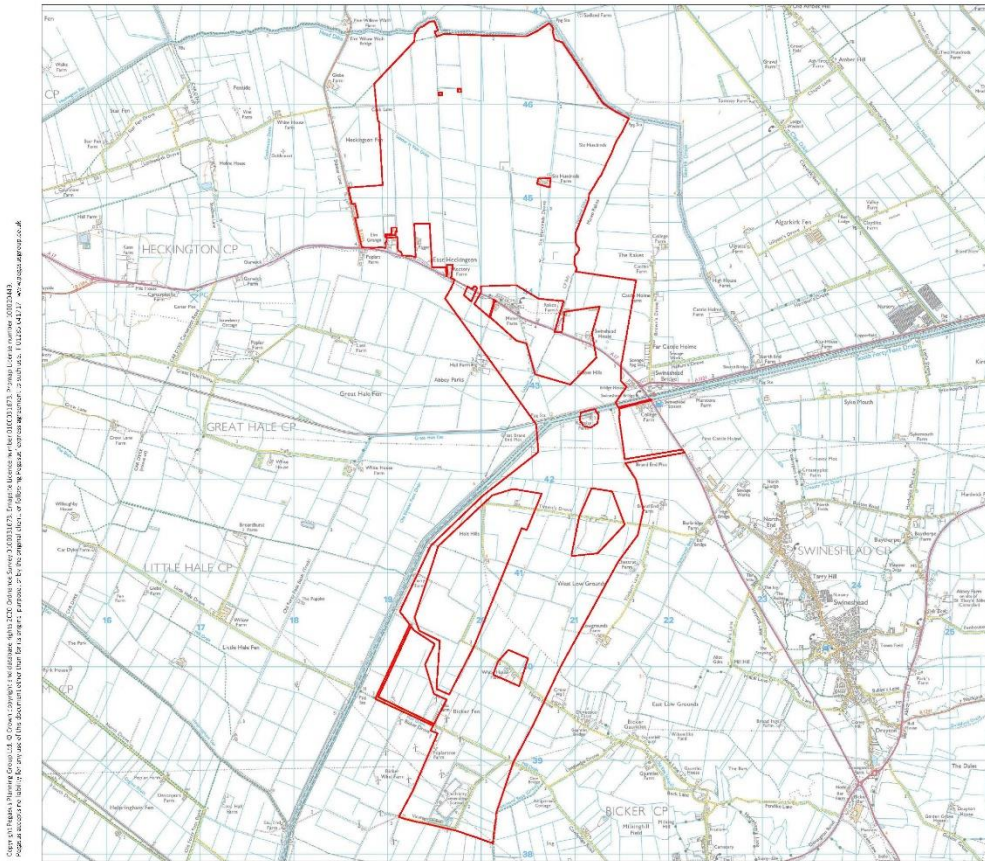


FIGURE 1: SITE LOCATION PLAN
 SITE OVERVIEW PLAN INCORPORATING CABLE
 ROUTE CORRIDORS TO BICKER FEN SUBSTATION



FIGURE 2: ENERGY PARK BOUNDARY
 AREA CONTAINING SOLAR PANELS, ENERGY STORAGE, ASSOCIATED INFRASTRUCTURE AND BIODIVERSITY NET GAIN



1.2 Overview of the Proposed Development

The Proposed Development includes the following key components:

- Solar PV panels;
- PV module mounting structures;
- Inverters;
- Transformers;
- Switchgear;
- Cabling (including high and low voltage) – mixture of above (on the energy park site only) and below ground (on the energy park site and the Grid Cable Route);
- One or more Battery Energy Storage Systems (BESS) (battery technology not determined at this time);
- Onsite substations including control buildings;
- Fencing and security measures;
- Internal access tracks;
- Community orchard;
- Permissive path;
- Construction of new access point onto highway (already consented);
- Landscaping including creation of new habitat areas;
- Construction of temporary construction areas and worker facilities;
- Digging of cable trench and laying cables for connection to the National Grid Bicker Fen Substation
- Installing above ground grid cable access points along the Grid Route; and
- Extension of Bicker Fen National Grid Substation and installation of above ground equipment.

Subject to obtaining the necessary consents, construction is anticipated to commence at the earliest in 2026, and to be completed ready for operation no earlier than 2027, with decommissioning no later than 40 years after the commencement of operation (assumed as 2067).

It is anticipated the Energy Park could create renewable energy to power 100,000 homes and would prevent 75,000 tonnes of carbon dioxide (CO₂) per year from entering the atmosphere. How these numbers are calculated can be found on <https://www.ecotricity.co.uk/our-green-energy/heckington-fen-solar-park>

1.3 The Applicant

Ecotricity (Heck Fen Solar) Limited, an Ecotricity company, has been formed to create and develop the Heckington Fen Energy Park.

Ecotricity was founded in 1995 as the world's first green energy company and now supplies customers across the UK from a growing portfolio of wind and sun parks, with all its electricity supply coming from 100% renewable energy. Ecotricity is a high technology business, developing cutting edge green technology and energy for a low carbon future.

1.4 The EIA Consultant Team

The team responsible for the production of the PEIR has been co-ordinated and managed by Pegasus Group. Pegasus Group is accredited under the Institute of Environmental Management and Assessment (IEMA) 'Quality Mark' scheme which is a mark of excellence in EIA co-ordination and management. Pegasus Group have extensive experience of undertaking EIA work across a range of projects and development types.





The consultants who have contributed to the preparation of this PEIR are set out in Table 1.1

TABLE 1.1: CONSULTANT TEAM

Topic	Consultant
EIA coordination and planning	Pegasus Group
Project Design and Buildability	Ecotricity
Landscape and Visual	Pegasus Group
Residential Amenity	Pegasus Group
Ecology and Ornithology	Ecotricity Kevin Shepherd- Consultant Ornithologist Neil Bostock- Consultant Ecologist
Hydrology, Hydrogeology, Flood Risk and Drainage	JBA Consulting
Cultural Heritage and Archaeology	Pegasus Group
Socio-Economic	Pegasus Group
Noise	Hoare Lea
Climate Change	Land Use Consultants (LUC)
Transport and Access	Pegasus Group
Air Quality	Hoare Lea
Land Use and Agriculture	Kernon Countryside Consultants Ltd Savills
Glint and Glare	Wardell Armstrong LLP
Miscellaneous Issues	Pegasus Group
Cumulative effects and inter-relationships	Assessment team



1.5 Purpose of the PEIR

The PEIR presents the preliminary findings of the EIA process in accordance with Regulation 12 of the The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended (hereafter referred to as the "EIA Regulations"). Regulation 12 requires an applicant to compile 'preliminary environmental information' that allows:

'consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)'.

This PEIR provides details of the Proposed Development, together with an overview of the alternatives considered to date. For each environmental topic, details of the approach to assessment, the existing and likely future environmental conditions, and the preliminary findings regarding the likely significant effects of the Proposed Development are set out, based on the information available at this time. Initial details of the measures proposed to avoid, prevent, reduce or offset significant adverse effects (known as mitigation measures) are also provided.

The EIA process is currently ongoing, with further work being carried out to enhance the understanding of existing environmental conditions and to provide further detail of the likely significant environmental effects. Feedback provided during the consultation process will be considered in refining the design of the Proposed Development, during the ongoing assessment work and during the development of further mitigation measures where necessary. The results of this further work will be set out within the Environmental Statement (ES) that will accompany the application for Development Consent.

The purpose of this NTS is to describe the Proposed Development and provide a summary in non-technical language of the key findings of the PEIR.

1.6 EIA Regulations and EIA Scoping

EIA is the process of identifying and assessing the significant effects (beneficial or adverse) likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions during/following the construction, operational and decommissioning phases of a development should it proceed.

For NSIPs in England, the legislative requirements for EIA are set by The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended (referred to in this report as the EIA Regulations).

EIA is not required for all developments. Schedule 1 of the EIA Regulations identifies development types that always require EIA. Schedule 2 identifies development types that require EIA if they are likely to lead to significant effects on the environment by virtue of factors such as their nature, size or location.

The Proposed Development would fall under Schedule 2, under Paragraph 3(a) of Schedule 2 of the EIA Regulations as it constitutes 'industrial installations for the production of electricity, steam and hot water'. Taking into account the nature and scale of the development proposed, an EIA is being undertaken for the Proposed Development.

The Applicant has notified the Secretary of State in a letter to the Planning Inspectorate dated 7th January 2022 under Regulation 8(1)(b) of the EIA Regulations that an ES will be provided with the DCO application for the Proposed Development. Therefore, in accordance with Regulation 6(2)(a) of the EIA Regulations, the proposed development is an EIA development.

EIA METHODOLOGY

2.1 General Assessment Approach

The PEIR provides the preliminary findings of the environmental assessment undertaken to date. It does not constitute a draft Environmental Statement (ES); an ES will be produced to support the Development Consent Order (DCO) application, but the PEIR follows the same EIA methodology approach. The general assessment approach of the PEIR is in line with the EIA Regulations.

The EIA considers impacts during the construction, operation and decommissioning of the project. The content of the PEIR is based on the following:

- Review of the baseline situation through existing information, including data, reports, site surveys and desktop studies;
- Consideration of the relevant local, regional and national planning policies, guidelines and legislation relevant to the EIA such as the National Policy Statements (EN1, EN3 and EN5), Draft National Policy Statements (EN1, EN3 and EN5), National Planning Policy Framework (NPPF) and accompanying 'live' document National Planning Practice Guidance (NPPG), and the statutory extant and emerging development plan policies;
- Consideration of potential sensitive receptors;
- Identification of likely significant environmental effects and an evaluation of their duration and magnitude;
- Expert opinion;
- Modelling and calculations;
- Use of relevant technical and good practice guidance; and
- Specific consultations with appropriate bodies.

Individual environmental topic chapters are generally set out in the following way:

Executive Summary – short overview summarising the key effects of the chapter;

Introduction – to introduce the topic under consideration, state the purpose of undertaking the assessment and set out those aspects of the Proposed Development material to the topic assessment;

Assessment Approach – to describe the method and scope of the assessment undertaken and responses to consultation in relation to method and scope in each case pertinent to the topic under consideration;

Baseline Conditions – a description of the baseline conditions pertinent to the topic under consideration including baseline survey information;

Assessment of Likely Significant Effects – identifying the likely effects, evaluation of those effects and assessment of their significance, considering construction, operational and decommissioning phases and direct and indirect effects;

Mitigation and Enhancement – describing the mitigation strategies for the significant effects identified and noting any residual effects of the proposals;

Cumulative and In-combination Effects – consideration of potential cumulative and in-combination effects with those of other developments; and

Summary – a non-technical summary of the chapter, including baseline conditions, likely significant effects, mitigation and conclusion.

To enable comparison between technical topics and to aid understanding of the PEIR findings, standard terms are used wherever possible

to describe the relative significance of effects throughout the PEIR (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 PEIR Volume 1: Main Text and Figures.

Each of the technical chapters within the PEIR 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.

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, proposed mitigation measures are identified to avoid or reduce the effect, or to reduce the likelihood of it happening. The use of such mitigation will be secured through the DCO, should it be granted.

As the design of the Proposed Development has evolved to date, the Applicant has worked with the environmental specialists to ensure the design avoids or reduces environmental effects on receptors where possible through the use of embedded mitigation by design measures (meaning measures that form part of the design or methods for construction or operation). These measures are taken into account in the EIA and assessment of the residual effects of the Proposed Development.

2.2 Cumulative Effects

Within EIA, cumulative effects are generally considered to arise from the combination of effects from the Proposed Development and from other proposed or permitted schemes in the vicinity, acting together to generate elevated levels of effects. The cumulative effects assessment will consider two types of relationships:

- 1) Intra-project effects: combined effect of individual development – for example, noise, dust and visual on one particular assessment; and
- 2) Inter-relationship: several developments with insignificant impacts individually but which together represent a significant cumulative effect.

A short-list of cumulative developments and the methodology is considered in detail in Chapter 2- EIA Methodology of the PEIR. A long-list and short-list will be kept under review and if further planning applications are submitted or further information becomes available prior to the submission of the DCO Application, this will be considered within the ES.

The location of these cumulative sites in relation to the Proposed Development can be seen on **Figure 3 – Cumulative Solar Sites.**

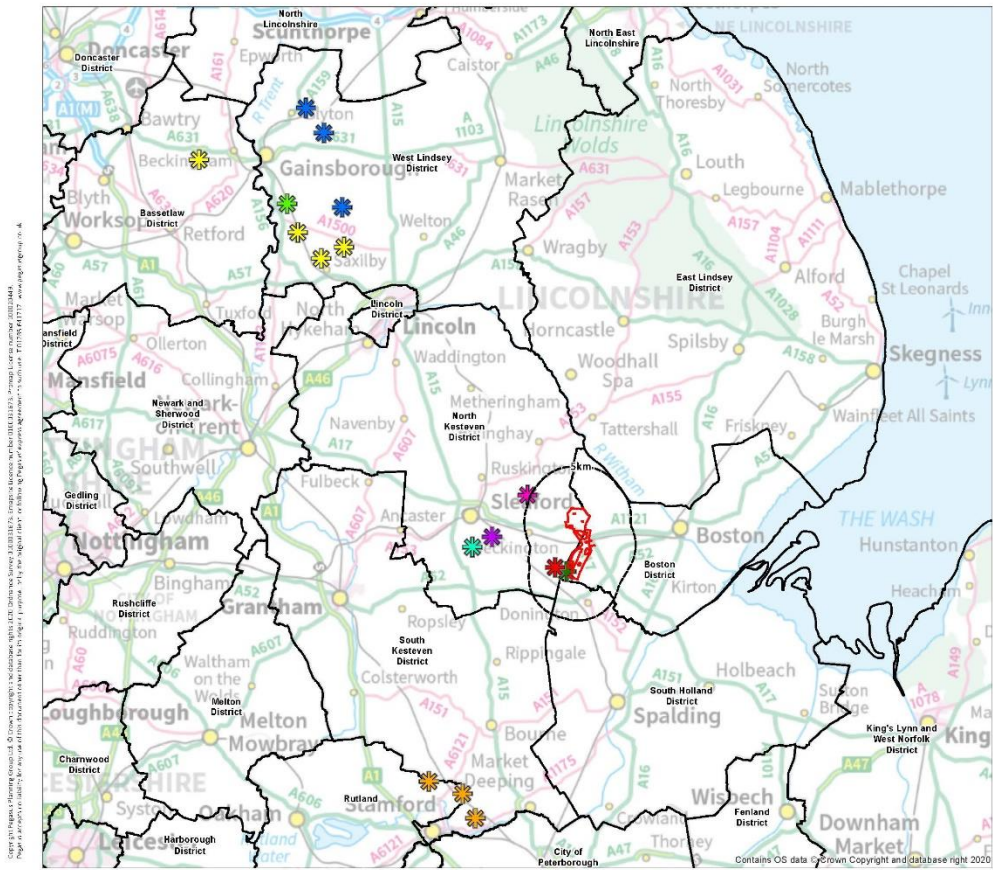


FIGURE 3: CUMULATIVE SITES

SITE DESCRIPTION, SITE SELECTION AND ITERATIVE DESIGN PROCESS

This section of the NTS includes the following sections:

- Site Description- a description of the existing conditions within the Proposed Development and the surrounding areas and the key receptors that will be assessed in detail within the technical topic chapters;
- Site Selection- an overview of the site selection process undertaken for the Proposed Development; and
- Iterative Design Process- a description of the iterative design process undertaken and a description of the main alternatives to the Proposed Development and the selection of the Energy Park as the preferred option.

3.1 Site Description

3.1.1 Energy Park

The Energy Park is located on an area of greenfield land within East Heckington, approximately 3.7km east of the village of Heckington and 8.9km west of the town of Boston, Lincolnshire. The closest major city is Lincoln approximately 32km north-west of the Site. The village of Heckington is separated from the Site by agricultural land within the surrounding fenland landscape. The Energy Park extends to approximately 586 hectares (ha). The Energy Park site lies wholly within the administrative district of North Kesteven, abutting Boston Borough Council administrative boundary along the eastern edge of the Site. The grid route connection predominately lies within Boston Borough Council, with a small section in North Kesteven closest to the proposed site entrance.

The Energy Park comprises arable, agricultural land subdivided into rectilinear parcels by long linear drainage ditches that lie principally north-south, connected east-west by shorter ditches

including Labour in Vain Drain. The ditches have an engineered profile, colonised in part by emerging aquatic plant species. The Energy Park is bounded by Head Dike to the north, a smaller watercourse to the east, the A17 Sleaford to Holbeach road to the south and B1395 Sidebar Lane and further agricultural land to the west.

Six Hundreds Farm lies in the eastern third of the Energy Park site, with vehicular access gained from Six Hundreds Drove via the A17. Vehicular access is also provided via two other points further west of the A17 frontage at Rectory Farm and at Elm Grange, with tracks connecting to Crab Lane toward the northwest corner of the Energy Park site, and then to Sidebar Lane. The access tracks follow ditch alignments.

The extent of the Energy Park boundary is shown in **Figure 2** of the NTS.

3.1.2 Cable Route Corridors and National Grid Bicker Fen Substation Extension

The electricity generated by the Proposed Development is to be imported and exported via underground cables from the onsite substations to the National Grid Bicker Fen Substation. An extension to the existing structures at Bicker Fen Substation will be required to accommodate the connection. Design work on the location of the cable route corridors for the grid connection is still in progress at the time of writing the PEIR; a final corridor route has not been determined. Two cable route corridor options are assessed within the PEIR and the indicative locations of the routes are presented within **Figure 4**:

- Grid Connection Route A- Eastern Route

The Eastern Route leaves the Energy Park on the eastern boundary, crossing the Viking Link and Triton Knoll connections before heading south towards Bicker Fen. Along the cable route crossings will be required for the A17, the South Forty Foot Drain, the railway, a high-pressure gas pipe and a number of watercourses.

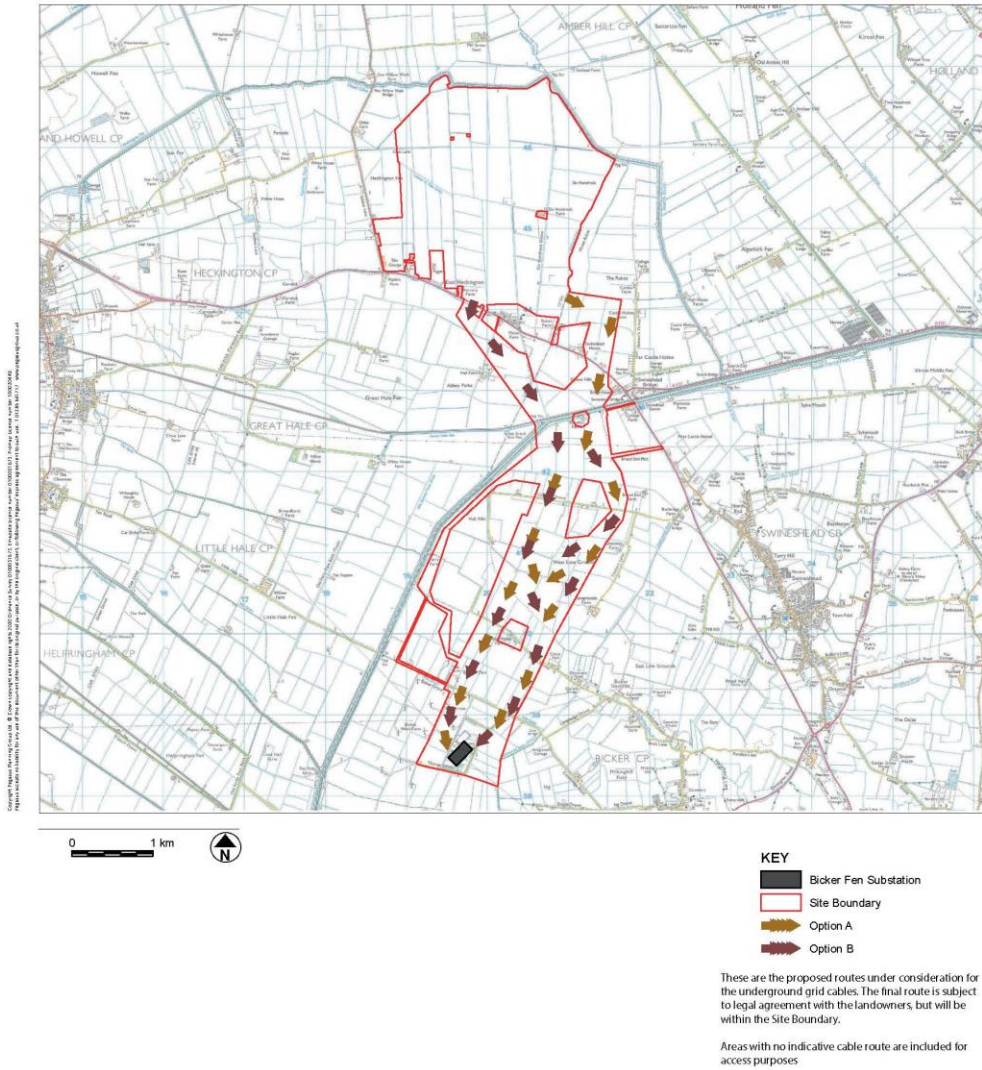


FIGURE 4: INDICATIVE GRID ROUTES

- Grid Connection Route B- 50-50 Route

The 50-50 Route (named as it covers elements of The Eastern Route, and a now discounted Western Route) leaves the Energy Park at the site entrance, on the eastern side of the high-pressure gas pipe. The cable would need to cross the A17 here, before crossing the Viking Link and Triton Knoll connections close to the South Forty Foot Drain and the railway. Once on the eastern side of the South Forty Foot Drain the route broadly follows a similar corridor to the substation, crossing the high-pressure gas pipe and a number of watercourses on the way to Bicker Fen Substation.

The location of the extension of Bicker Fen Substation has not been confirmed by National Grid, however ongoing discussions with them indicate the likely location of the extension will be on land to the immediate south-west of the existing substation. This area of land is currently an area of rough grassland, bounded by woodland.

3.1.3 Access

Access to the Energy Park will be gained via the A17. There is an existing access point which will be used for the initial stages of construction (creation of construction compound and materials for the new access point). This existing access point is on land adjacent to the Elm Grange Studios and the new Build-A-Future School.

It is intended that a new priority access point will be built shortly after the construction of the Proposed Development begins. This new priority access point will be used for the remainder of the construction phase and for the operational phase of the Energy Park. The new access point is also off the A17 and already has the principle of planning consent established, which was

achieved through the previously consented wind farm application.

3.1.4 Environmental Sensitivities within the vicinity of the Proposed Development

The Energy Park is bound by Head Dike to the north, a smaller watercourse to the east, the A17 Sleaford to Holbeach road to the south and B1395 Sidebar Lane/agricultural land to the west. In terms of landform, the Energy Park is very flat and low-lying at between 2m and 3m Above Ordnance Datum (AOD) across the entire area. The Energy Park is situated on the Lincolnshire Fens, a coastal plain in the east of England which comprises a large area of broad flat marshland supporting a rich biodiversity. The Energy Park falls within National Character Area 46- The Fens. There are no nationally designated landscape areas within North Kesteven. The North Kesteven Landscape Character Assessment (2007) identifies that the Energy Park Site is within "The Fens Regional Landscape Type" and the "Fenland Landscape Character Sub-Area".

Land within the Energy Park is in arable use and is subdivided into rectilinear parcels by long linear drainage ditches. The arable fields are generally used to grow wheat for compound animal feed with a smaller portion used to make a low biscuit grade grist. The previous break crop of harvest 2020 was oilseed rape. Agricultural land can be graded according to its inherent limitations for agricultural use. Grade 1 is excellent quality and Grade 5 is very poor quality. Grade 3 is divided into subgrades 3a "good" and 3b "moderate" quality land. Grades 1, 2 and 3a are defined as the "best and most versatile" land in the National Planning Policy Framework (2021). An Agricultural Land Classification Assessment (ALC) was undertaken in November 2021 across the Energy Park. The ALC results for the 525ha area proposed for the solar panel arrays within the Energy Park



(i.e. excluding the Potential Biodiversity Net Gain areas where soils are to be unaffected), show 50% of the site is Grade 3b land or below and therefore considered to be poorer quality land. The remaining 50% of the area for energy generation is a combination of Grade 3a (31%), Grade 2 (11%), Grade 1 (6%) and Non-Agricultural land (2%) which is considered Best and Most Versatile (BMV).

One public right of way (PRoW) footpath HECK/15/1 runs along the northern boundary, crossing a small part (c.280m) of the Energy Park; no other PRoW occurs within the Energy Park. The Proposed Development will not require the closure or diversion of HECK/15/1. It is proposed that an additional permissive path (4.2km) will be linked to HECK/15/1 to effectively create a loop walk around part of the Energy Park.

There are no European statutory designated sites (Ramsar, Special Areas of Conservation (SAC) & Special Protection Areas (SPA) or national sites Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR), Local Nature Reserve (LNR) within 10km of the Proposed Development.

The nearest SSSI is Horbling Fen SSSI located 11.5km to the southwest of the Proposed Development, designated for its geological interest. The Wash SSSI/SPA/SAC/Ramsar and NNR, is situated approximately 17km to the southeast of the Proposed Development at its nearest point.

There are no non-statutory designations within the Energy Park. The South Forty Foot Drain Local Wildlife Site (LWS) is located approximately 1km to the south of the Energy Park Site. This is a man-made watercourse with bankside vegetation comprising rough neutral grassland, scrub, and trees. Cole's Lane Ponds LWS is located 6km southeast of the Site, and Heckington Grassland Site of Nature Conservation Interest (SNCI) is located approximately 5km to the west of the Energy Park.

The Energy Park includes a pond surrounded by bankside trees and scrub. There is an area of wet grassland to the west and north of the pond. There are a small number of hedgerows within the Energy Park which are used by a variety of breeding and over-wintering birds. Field boundary hedgerows are generally species-poor although the hedgerows vary in height, length, condition and management. Approximately 10.5ha of the Energy Park site is currently held under agri-environmental schemes, in the form of enhanced headlands by way of buffer strips.

There are no designated archaeological remains, e.g. Scheduled Monuments, located within the Energy Park Site. One Scheduled Monument and four Grade II Listed Buildings lie within a 2km radius of the Energy Park. Known and potential non-designated built and archaeological remains located within the Energy Park Site comprise:

- Upstanding post-medieval/modern buildings of Six Hundreds Farm;
- Upstanding post-medieval/modern brick boundary wall to the west of Elm Grange;
- Upstanding remains of a post-medieval/modern drainage pump close to Head Dike to the north-east;
- Buried remains of a post-medieval duck decoy to the east;
- Buried remains of former outfarms and field boundaries in various locations, some but not all of which are shown on historic maps;
- Buried remains of a possible enclosure of uncertain origin to the west of centre; and
- Buried remains of a possible enclosure and circular and linear features of uncertain origin to the east.



The majority of the Energy Park site is within Flood Zone 3, with some sections of the Energy Park falling within Flood Zone 2 and Flood Zone 1.

The Proposed Development is located approximately 11.3km west of its nearest Air Quality Management Area (AQMA), 'Haven Bridge AQMA' which is located in Boston Borough Council's (BBC) administrative area and which has been declared for exceedances of the annual mean nitrogen dioxide (NO₂) air quality objective (AQO).

Figure 5 shows a plan of the surrounding environmental designations discussed above.

3.2 Site Selection

One of the biggest constraints which has to be considered when developing a renewable energy scheme is securing a viable point of connection to the electricity network. Securing a grid connection for a scheme of this size needs to be to the 400kV network, which remains constrained in terms of availability and a reasonable timescale for connection. A 400MW export and 250MW import connection has been accepted with National Grid at Bicker Fen Substation. A 400kV underground cable would be installed to connect the Energy Park to the Bicker Fen National Grid Substation. The total length of the underground cable run for Grid Connection Route A would be approximately 7km and for Grid Connection Route B approximately 7.7km.

An important consideration is selecting a site of suitable shape, orientation and size that can accommodate the Proposed Development. Large open fields without vegetated boundaries reduce the impact that small fields can have on the layout design. The Energy Park Site with a fairly flat gradient of only 1-3m over the entire area, and as one large space of connected fields is suitable for optimising solar energy output.

The nearest residential properties to the Energy Park Site boundary are along the A17 and the B1395 Sidebar Lane to the south and west respectively. The design of the Energy Park to date means considerable buffers have been made to ensure that no properties are in close proximity to solar panels, energy storage or electrical equipment. A majority of the properties are over 150m from the development.

The majority of the Energy Park is within Flood Zone 3, with some sections of the Energy Park falling within Flood Zone 2 and 1. Within Overarching National Policy Statement for Energy EN-1 (July 2011), section 5.8, the policy states that a Flood Risk Assessment (FRA) needs to accompany a proposed development within Flood Zone 2 or 3. Such an FRA will accompany the DCO Application.

The Applicant has had a relationship with the landowner of the Energy Park Site for a number of years due to a wind park proposal, which was approved in 2013. This has not become operational due to the development timescales of a technical radar solution which formed a 'Grampian Condition' on the wind park planning consent. The Applicant has an Option to Lease in place on the Energy Park Site, which will progress to a Lease once construction of the Energy Park commences.

3.3 Iterative Design Process

The layout of the Energy Park has evolved iteratively taking into consideration environmental effects, the planning and environmental policy objectives and Scheme functionality as well as feedback from stakeholders and non-statutory public consultation between October and December 2021. The iterative design process and alternatives considered are referenced in detail in Chapter 3- Site Description, Site Selection, and Iterative Design Process of the PEIR.

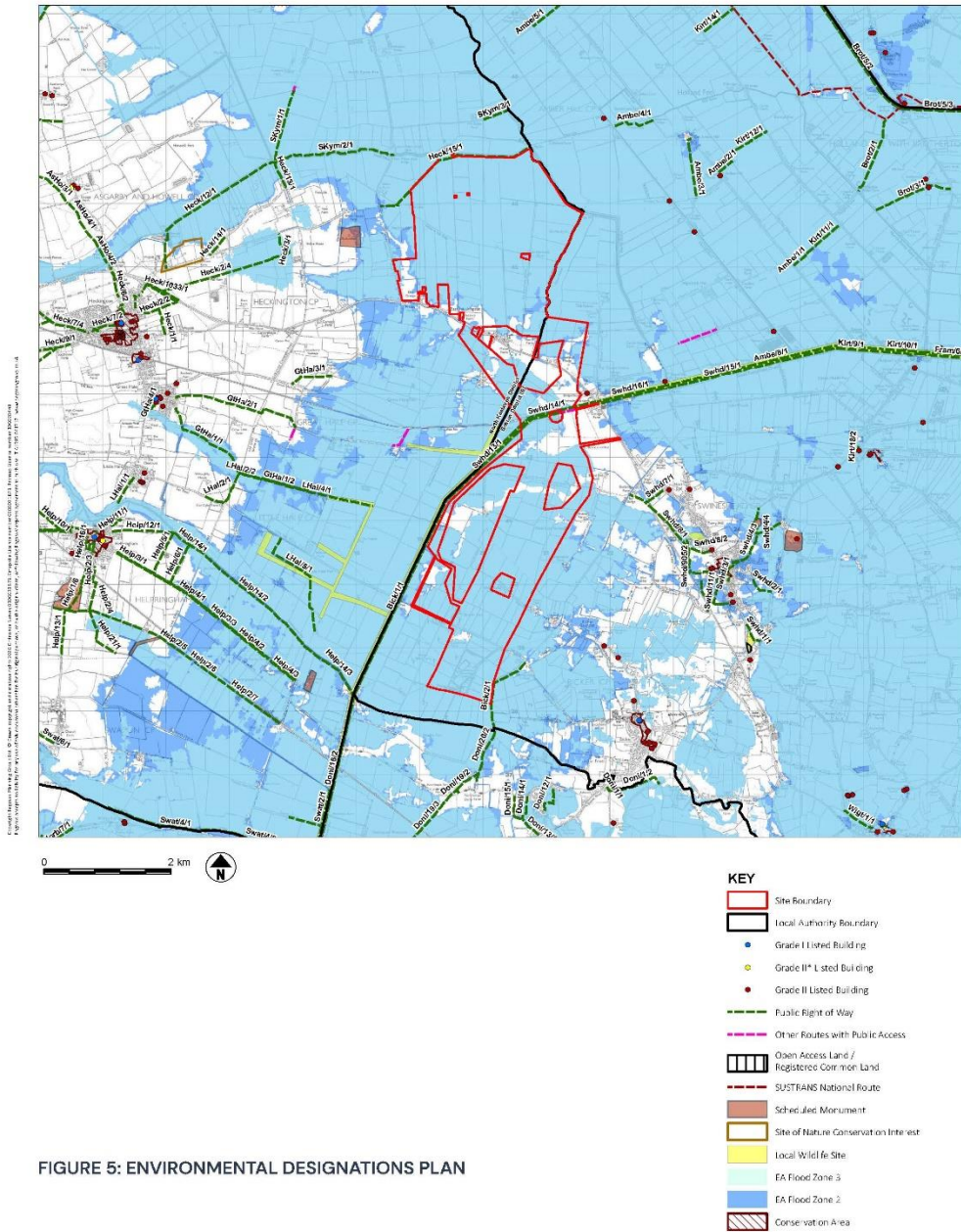


FIGURE 5: ENVIRONMENTAL DESIGNATIONS PLAN

PROPOSED DEVELOPMENT

The Proposed Development is defined under sections 14(1)(a) and 15(2) of the Planning Act 2008 as a Nationally Significant Infrastructure Project (NSIP), as it consists of construction of an onshore generating station in England exceeding 50 megawatts (MW). Associated development and other ancillary works are also proposed as part of the Proposed Development.

Indicative timescales for the construction and operation of the Proposed Development that have been assumed for the purpose of the assessment are as follows:

- It is currently anticipated that (subject to the necessary consents being granted) construction work will commence, at the earliest in the Spring of 2026 and will run for 18 months.
- It is currently anticipated that the earliest the Proposed Development will commence commercial operation is Autumn 2027. It is anticipated that sections of the Energy Park will commence their generation in stages, rather than await completion of the whole site before any renewable energy generation enters the National Grid; and
- The operational life of the Scheme is to be 40 years and decommissioning is therefore estimated to take place no earlier than 2067. Decommissioning is expected to take in the region of 6-12 months and will be undertaken in phases.

4.1 Need for the Proposed Development

The case for the need for the Proposed Development is centred on its significant contribution to the three important national energy policy aims, which are:

Decarbonisation – achieving Net Zero by 2050 and the importance of urgently deploying zero-carbon generation assets at scale – the Energy Park will provide a large-scale low carbon energy generating asset which is expected to be operational during 2027.

Security of supply – geographically and

technologically diverse supplies – the Energy Park will provide the security of supply due to its large scale; direct connection to the National Electricity Transmission System, meaning the power that it generates has a national benefit; ability to complement other renewables and the efficient opportunity to integrate energy storage into the design of the Energy Park to help balance electricity needs over the wider Grid system.

Affordability – the Energy Park will provide large scale generation at low cost which removes the market fluctuations from fossil fuel costs, which lead to energy prices rising for the end user.

The Energy Park will therefore be a critical part of the development of the UK's portfolio of large-scale solar generation required to decarbonise its energy supply and provide secure and affordable energy supplies.

4.2 Proposed Development's Components

An accompanying Indicative Site Layout with set parameters has been drafted and the EIA process will assess against **Figure 6**- Indicative Site Layout. As the environmental assessments progress this Indicative Site Layout may be amended to allow for mitigation through design in the Proposed Development. Therefore, the Indicative Site Layout within this PEIR may not be the one considered within the ES for the submitted DCO application.

4.2.1 Solar PV Infrastructure

At the time of writing the PEIR, both fixed solar PV panels and solar PV panels that track the sun are under consideration for this installation. **Figure 7** and **Figure 8** are illustrative figures to show the two solar PV technology types.

Individual solar PV modules (or can be known as panels) are typically 2-2.5m long and 1-1.5m wide and typically consist of a series of polycrystalline cells which make up each panel. Several panels can be installed in either the



FIGURE 6: INDICATIVE SITE LAYOUT

Panel Angle Range: 10 degrees to 40 degrees. Shown as 20 degrees in drawing below.

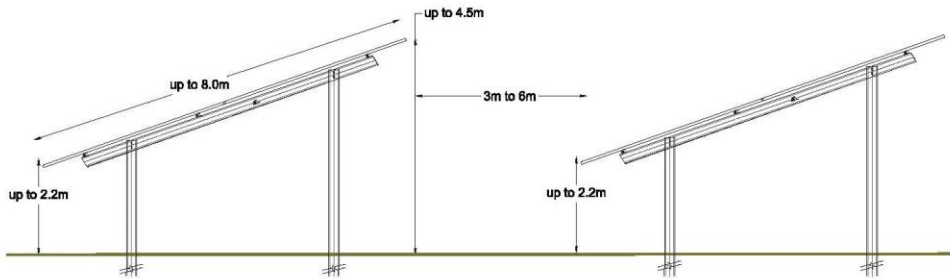


FIGURE 7: INDICATIVE FIXED MOUNTING SYSTEM OPTION

Maximum Tracking Angle: 60 degrees from horizontal. Shown as 45 degrees in drawing below.

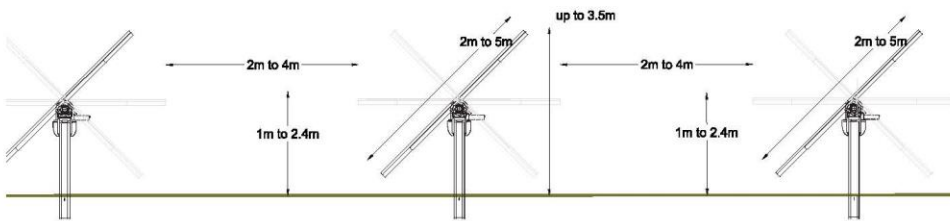


FIGURE 8: INDICATIVE TRACKING MOUNTING SYSTEM OPTION

landscape or portrait orientation on the racking. Each module could have a DC generating capacity of between 400–600watts (W), or more depending on advances in technology.

The modules are fixed into a mounting structure in groups known as “strings”. This mounting structure can be used for two different systems, a fixed panel system where the panels are fixed in one position and one angle, or a tracking system where the panel rotates on its axis to track the sun throughout the day. Each row of modules will be mounted on a rack supported by galvanised steel poles driven into the ground. Various mounting structures are available however, driven poles are currently expected to be the most likely foundation solution. Between each string of panels there could be an average separation distance of approximately 3.5m to maximise generation and allow sufficient access for maintenance. The spacing between racks of fixed and tracker panels varies, with a minimum of 2m for fixed and 3m for trackers. This spacing can increase to 4m and 6m respectively.

The assessments within the PEIR have assumed that the panel modules are mounted on structures with a clearance of a maximum of 2.2m and an upper height of a maximum of 4.5m. This upper height is subject to ongoing modelling for flood heights on the Energy Park Site and may be reduced for the assessments when the ES supporting the DCO application is submitted. Typical panel heights are 1–1.5m at the lower edge. The trackers would pivot with a potential lowest lead edge of 0.1m and highest edge of 3.5m.

Figure 9 details the solar infrastructure arrangement.

4.2.2 Inverters, Transformers and Switchgear

Inverters are required to convert DC electricity generated by the PV modules into alternating current (AC) which allows the electricity to be

exported to the National Grid. Inverters are sized to deal with the level of voltage which is output from the strings of PV modules.

Transformers are required to control the voltage of the electricity generated across the Energy Park Development site and efficiently transmit the power to the Development substation. A main 400kV step-down transformer will be required alongside smaller transformers. To ensure a worst-case scenario is assessed six 132kV transformers are proposed across the Energy Park site.

Switchgears are the combination of electrical disconnect switches, fuses or circuit breakers used to control, protect and isolate electrical equipment. Switchgears are proposed across the Energy Park, likely within the compounds for the 132kV substations.

4.2.3 Energy Storage

An energy storage facility will be an associated part of the electrical infrastructure of this Proposed Development. The primary energy storage area is proposed to be located in the south eastern section of the Site, either in a series of individual containers or housed within a larger building(s). There is the potential for further energy storage area to be located near to the 132kV substations which are located across the Energy Park. It is estimated at this time that the storage capacity would be approximately 200–400MW. The energy storage system which will include batteries, inverters and system controllers but its final design has not yet been determined.

4.2.4 Onsite Cabling

Within the PEIR, the assessment will consider a mixture of below ground and above ground cabling for the Energy Site. Any above ground cabling will be attached to poles which would traverse the Site. The maximum height of these poles could be 30m. As the design of the Site



develops further it will be determined if any above ground cabling is required. All below ground cabling will be laid into trenches and then the soil will be re-laid. The cabling will run the energy from the solar panels to the nearest of the six onsite 132kV substations. These substations will step-up the electricity onto a 132kV circuit which will traverse the site – either above or below ground. The 132kV substations will connect to the main 400kV substation which will again step up the power. Cables will then leave the main substation (400kV) and run to Bicker Fen Substation.

4.2.5 Onsite Substations

There are proposed to be six onsite substations within the Energy Park Site. The smaller 132kV substations on the Energy Park Site are expected to offer greater electrical efficiencies for the scheme. The main 400kV substation will include a control building which will include office space and welfare facilities as well as operational monitoring and maintenance equipment.

Figure 10 details the energy storage requirements and associated infrastructure for the Proposed Development.

4.2.6 Fencing, Security and Lighting

A fence will enclose the operational areas of the Energy Park Site. The fence is likely to be a metal mesh fence of approximately 3m in height. Pole mounted closed circuit television (CCTV) system, which will face towards the Energy Park and away from any land outside will also be deployed around the perimeter of the Energy Park site. These cameras will be mounted on poles of 3.5m height located within the perimeter fence.

It is likely that lighting on sensors for security purposes will be deployed around the energy storage area and potentially at any other pieces of critical infrastructure. No areas of the

Development are proposed to be continuously lit during the operational phase of this development.

Figure 11 details the proposed assets within the Energy Park.

4.2.7 Site Access and Access Tracks

Currently there are a number of access points into the Site from the A17. It is proposed to use the existing access point near Elm Grange for the very initial stages of construction. The eventual new point of access for operation and remaining stages of the construction process is also on the southern boundary and would form a new access point off the A17. The new operational point of access is a previously approved point of access that was not built out as it is linked to the approved wind farm application.

Once on site the access track will continue northwards and minor internal access tracks will be connected to it. These minor access tracks will connect into each parcel of the development. These primary access tracks that traverse the Site will likely be made of crushed aggregate or other suitable reinforcement.

Figure 12 details the proposed access arrangements within the Energy Park.



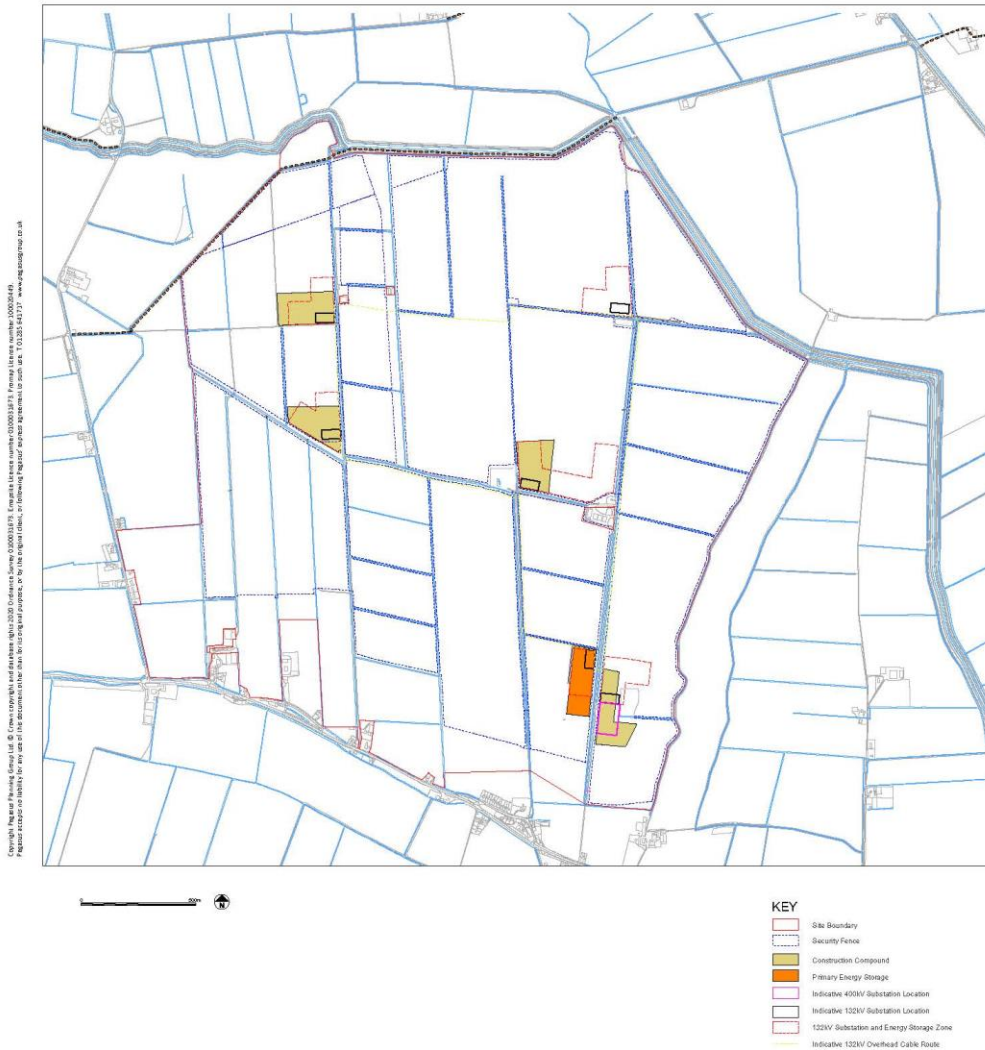


FIGURE 10: PROPOSED ENERGY STORAGE

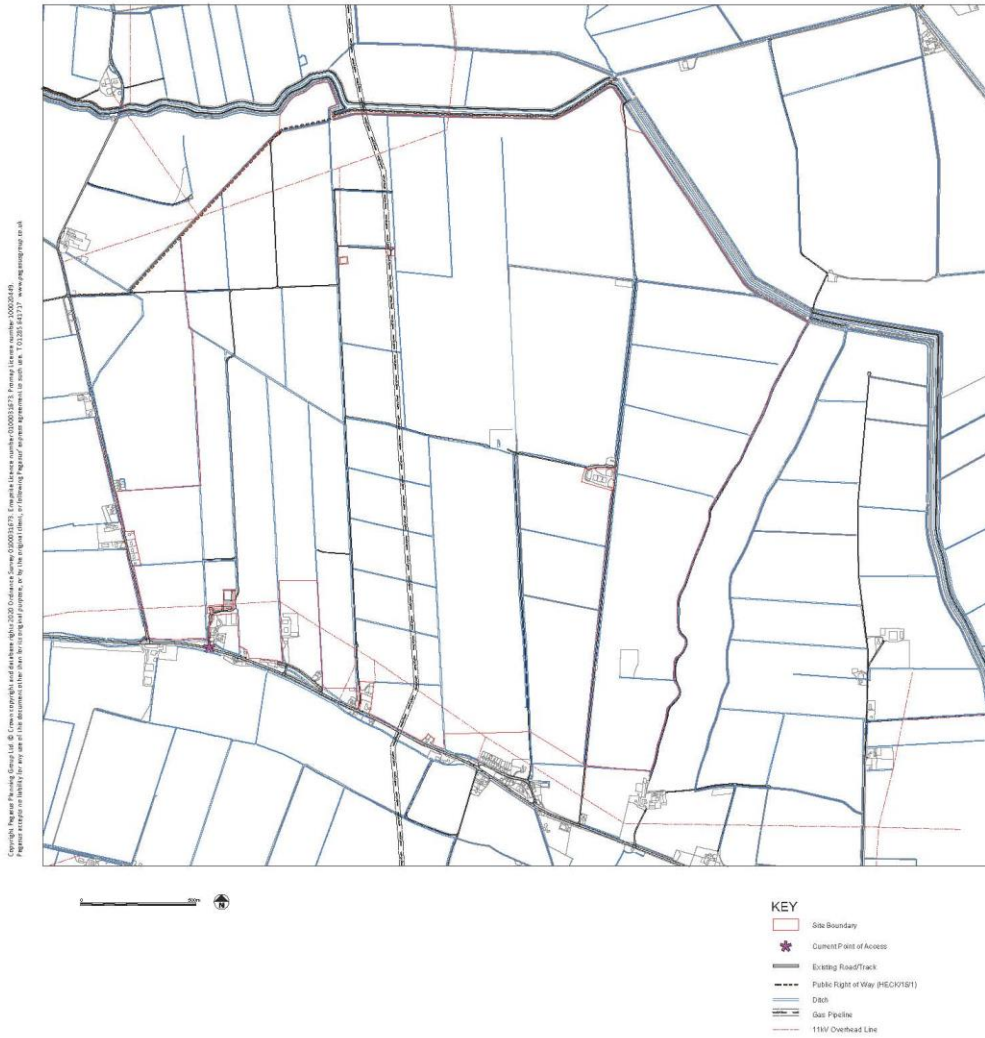


FIGURE 11: ASSETS



FIGURE 12: SITE ACCESS

4.2.8 Offsite cabling

Design work on the location of the cable route corridors for the grid connection is still in progress at the time of writing the PEIR; a final corridor route has not been determined. Two cable route corridor options are assessed within the PEIR; Grid Connection Route A- Eastern Route and Grid Connection Route B- 50-50 Route. At certain points along the route, it will be necessary to drill past 'obstacles' such as roads, watercourses, and other utilities. The cable routes are still being surveyed and so more detail on the extents and precise locations of the cable routes will be finalised in the ES supporting the DCO application.

4.2.9 Bicker Fen Substation Extension Works

The electricity generated is expected to be exported via a connection from the Site to the existing National Grid Electricity Transmission (NGET) 400kV Bicker Fen Substation. This will require an extension to the existing structures at Bicker Fen Substation. The choice of the location for the extension will be determined by National Grid, but is expected to the south-west corner.

4.2.10 Construction Phase

It is currently anticipated that (subject to the necessary consents being granted) construction work will commence, at the earliest in the Spring of 2026 and will run for 18 months.

The types of construction activities that may be required include (but are not limited to):

- Importing of construction materials;
- Culverting some ditches on the Site – anticipated to only be at the site entrance;
- The establishment of the construction compound(s) – this will likely move over the course of the construction process as each phase is built out, a maximum of 4 are proposed and their proposed

locations can be seen on Figure 2.1 Indicative Site Layout;

- Creation of a new access point for the Site (A17);
- Installing the security fencing around the Site;
- Importing the PV panels and the energy storage equipment;
- Erection of PV frames and modules;
- Laying of overhead cables onsite and digging cable trenches and laying cables onsite;
- Installing transformer cabins;
- Construction of onsite electrical infrastructure for the export of generated electricity
- New habitat creation;
- Creation of the permissive path;
- Digging of cable trench and laying cables for connection to the National Grid Bicker Fen Substation;
- Installing above ground grid cable access points along the Grid Route; and
- Installing new technical equipment at the National Grid Bicker Fen Substation.

A main temporary construction compound will likely be established close to the Development site entrance. Smaller temporary compounds will be located across the Development as the site is built out in its various phases, currently proposed to be four. The construction process will take place as one continuous process, so when Phase 1 is completed, Phase 2 would start.

An Outline Construction Traffic Management Plan (CTMP) will be developed as part of the EIA which will guide the delivery of materials and staff onto the Proposed Development Site during the construction phase. The principles of the draft Outline CTMP will be available for comment as part of the consultation process

to ensure that the comments of local residents and stakeholders are taken into account in its development (Appendix 14.1).

It is envisaged that a Outline Construction Environmental Management Plan (CEMP) will be secured by requirement in the DCO which will include measures to minimise environmental effects during construction works and will be submitted with the DCO application.

An Outline Soil Management Plan will be submitted as part of the DCO application. This document has been requested by Natural England and will set out the proposals for how the soil will be managed through the construction process to ensure that its structure and quality are maintained.

4.1.11 Operational Phase

It is currently anticipated that the earliest the Proposed Development will commence commercial operation is Autumn 2027. During operation of the Development, human activity on the Site will be minimal and would be restricted principally to vegetation management, equipment maintenance and servicing, replacement of any components that fail, monitoring to ensure the continued effective operation of the Development and the shepherd gaining access to the Site for manage the low intensity flock. It is anticipated that the operation of the Energy Park will create five full time jobs. HGV movements are not expected unless replacement equipment is required on at the Energy Park as part of the maintenance programme.

There is a proposed 'Community Orchard' as part of the ecological enhancements of the Energy Park. At this time, it is hoped that students of the new school at Elm Grange, as well as other community groups, would be able to access this orchard. The access arrangements to such a community asset

are still to be finalised, but will be discussed over the formal consultation process for this proposal.

4.2.12 Decommissioning Phase

The Development will be decommissioned at the end of its approved operational phase. All PV modules, mounting poles, cabling above 1m below ground (on and off site) (any cabling buried 1m+ below ground will not be removed at decommissioning), substations, energy storage equipment, inverters, transformers etc would be removed from the Development. These items would be recycled or disposed of in accordance with good practice and market conditions at the time. A Decommissioning Plan, to include timescales (expected to take 6-12 months) and transportation methods would be agreed in advance with the Local Planning Authority. As requested in the Scoping Opinion an outline Decommissioning Scheme will accompany the DCO application.

It is the intention that after the 40 years of operation the whole of the Energy Park Site will revert to its current use and be used by the landowner for agricultural operations of their choice and determined by the global markets at that time. This will include the areas that will have been used for biological diversification over the lifetime of the Energy Park. It is the intent that the permissive path would also be closed to public once the Energy Park is decommissioned.

At this time the applicant has been advised by National Grid that the additional electrical infrastructure that will be installed at the National Grid Bicker Fen Substation for the Development may remain in place, rather than being decommissioned. Further clarity on this will be provided in the ES.

FINDINGS OF THE PEIR

5.1 Topics Assessed

Chapter 1 to 5 of PEIR Volume 1: Main Text and Figures provides an introduction to the Proposed Development, approach and methodology to the EIA, description of the DCO Site and surrounds, an overview of the Proposed Development and alternatives that were considered during the design process, and the policy and legislative context.

The following topic specific chapters have been produced and assessed in the PEIR Volume 1: Main Text and Figures–

- Chapter 6 Landscape and Visual
- Chapter 7 Residential Amenity
- Chapter 8 Ecology and Ornithology
- Chapter 9 Hydrology, Hydrogeology, Flood Risk and Drainage
- Chapter 10 Cultural Heritage
- Chapter 11 Socio-Economic
- Chapter 12 Noise and Vibration
- Chapter 13 Climate Change
- Chapter 14 Transport and Access
- Chapter 15 Air Quality
- Chapter 16 Land Use and Agriculture
- Chapter 17 Glint and Glare

Miscellaneous Issues with the PEIR Volume 1– Chapter 18 provides an overview of the topics that can be addressed more concisely than the other topic specific chapters and therefore do not merit an individual chapter. These topics include major accidents and disasters; telecommunications, television reception, utilities; and waste.

An assessment of the environmental effects of the Proposed Development during its construction, operation (including maintenance) and eventual decommissioning has been completed for each of the topics. The likely significant environmental effects of the Proposed Development are fully described within the PEIR Volume 1: Main Text and Figures. The following environmental topic sections provides a brief summary of the overall findings of the PEIR.

LANDSCAPE AND VISUAL

The Landscape and Visual PEIR Chapter contains a preliminary assessment of the potential effects upon the landscape elements associated with the Energy Park Site, landscape character and visual amenity brought about by the Proposed Development. In line with best practice and requirements of National Policy Statements EN-1 and EN-3 it considers the effects during the construction, operation, and decommissioning stages. It does not describe the residual magnitude of change or predicted residual effects, but rather provides a summary table detailed in Chapter 6, which outlines the predicted residual effects. Detailed assessment will be provided in Chapter 6 of the ES.

The Proposed Development encompasses the Energy Park, off site cable route and above ground works at the National Grid Bicker Fen Substation. The Energy Park, comprises solar modules infrastructure, onsite cabling, energy storage infrastructure and associated infrastructure, located to the north of the A17. This PEIR Chapter 6 considers the Proposed Development in terms of its maximum parameters: the extent and height of the solar modules, substation elements, overhead power cables, and fencing, as described within PEIR Chapter 4. The typology and height parameters of the proposed solar modules, and exact design of the substation elements have not yet been finalised and will be confirmed in the Environmental Statement.

The PEIR Chapter 6 also sets out the main policies and guidance relevant to landscape and visual matters based on the Overarching National Policy Statement for Energy (EN-1) and National Policy Statement for Renewable Energy Infrastructure (EN 3) and their current drafts. In addition, policies provided in the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG) have also been reviewed to inform the approach and

assessment work. The provided assessment is based on established best practice methodologies.

6.1 Baseline Conditions

The Proposed Development is not located within any national statutory protected landscape designations. It does not lie within any regional or local non-statutory landscape designations, either.

The Application Site falls within National Character Area 46 The Fens.

The North Kesteven Landscape Character Assessment, prepared by David Tyldesley and Associates for North Kesteven District Council, identifies that the Energy Park Site falls within The Fens Regional Landscape Character Type in the east of the district, and the Fenland Landscape Character Sub-Area.

The grid connection area primarily falls within Boston Borough Council's area and is covered by its own Landscape Character Assessment of Boston (2009). This published assessment identifies that the grid connection falls entirely within the Landscape Type (LT) A Reclaimed Fen and more specifically its Landscape Character Area (LCA) A1 Holland Reclaimed Fen.

With regard to the visual receptors, based on the OS Explorer map 1:25,000 and site surveys it has been determined that the settlements of Heckington, East Heckington, Swineshead Bridge, and South Kyme are relevant to the assessment. Similarly, the site survey work has helped to determine that the A17 and Sidebar Lane / the B1395 are the only two transport corridors considered informative to this PEIR Chapter 6. In addition, the railway line between Heckington to the west and Boston to the east is the only railway line in the local area. The proposed cable route crosses the railway corridor, and thus has been included.

SUSTRANS Cycle Route No. 1, located to the north-east of the Energy Park approximately 3.9km away at its closest point, has been excluded from further assessment due to the distance and intervening vegetation.

In addition to Heck/15/1 which runs along the north western boundary, there are a number of Public Rights of Way (PRoWs) within the local landscape that have been identified as potentially offering close to medium range views, and being relevant to the Proposed Development:

- Public Footpaths Heck/1/1, Heck/2/1, Heck/2/2 and Heck/1033/1 on the eastern edge of Heckington.
- Public Footpaths Heck/3/1 and Heck/2/4 near Hall Farm and Littleworth Drove, connecting to Heckington, and forming part of the promoted Heckington Fen Walk.
- Public Footpaths Heck/13/1, SKym/2/1, and SKym/1/1 that cross the eastern part of Howell Fen, near Fenside and connect to Sidebar Lane and South Kyme.
- Public Footpath SKym/8/1 on the southern edge of South Kyme.
- Public Footpath Ambe/5/1 near Chestnut House Farm.
- Other Routes with Public Access coincide with Harrison's Drove in the southern part of Algarkirk Fen.
- Bicker Drove located near Public Bridleway Bick/1/1.

Based on the preliminary works and further desktop and field work a total of 19 no. of viewpoints have been selected and they include locations discussed with the Councils during the consultation process through the Scoping Report, and subsequent consultation with their landscape consultant and officers. The identified viewpoints are not intended

to cover every possible view of the Proposed Development, but rather they have been selected to be representative of a range of receptor types.

6.2 Assessment of potential for likely significant effects

Construction Phase

PEIR Chapter 6 has concluded that the construction of the Proposed Energy Park and associated grid connection to the existing 400kV Bicker Substation will bring about major and significant adverse effects upon the ground cover. With regard to the structural vegetation: trees and hedgerows within the Energy Park Site, the Proposed Development would not result in any significant adverse effects. The residual effects, following the implementation and establishment of the proposed mitigation planting is likely to result in beneficial significant effects upon the hedgerow resource. No other landscape elements or features associated with the Energy Park Site would be significantly affected by the Proposed Development during its construction phase.

In terms of landscape character, it has been assessed that the construction stage may result in temporary short term significant adverse effects upon the local landscape of The Fens Regional Landscape Character Type and the Fenland Landscape Character Sub-Area (identified in the published *North Kesteven Landscape Character Assessment*) and Landscape Type (LT) A Reclaimed Fen and its associated LCA A1 Holland Reclaimed Fen, (identified in the published *Landscape Character Assessment of Boston*).

With regard to the southern part of the Energy Park Site, south of the A17, there are a number of PRoWs that cross the grid connection area or abut its preliminary boundaries. Receptors associated with these routes are unlikely to be subject to any long-term significant effects.

The construction phase is also likely to bring about significant adverse effects upon the receptors associated with the settlement of East Heckington, and individual properties in Swineshead Bridge, located along Brown's Drove, and in Amber Hill. With regard the road users travelling along Sidebar Lane, significant adverse effects are like to occur due to the proximity to the proposed Energy Park and openness of the views. Users associated with the railway line are also likely to be subject to significant adverse effects brought about by the construction phase of the grid connection, south of the A17.

In terms of PRoWs, users along the following routes have been assessed as potentially subject to significant adverse effects during the construction phase of the Proposed Development:

- Public Footpath Heck/15/1.
- Public Footpath Swhd/14/1, Swineshead Bridge.
- Public Footpaths Heck/13/1, Skym/2/1, and Skym/1/1.
- Other Route with Public Access that coincides with Bicker Drove.

In terms of static receptors, the following viewpoints (see **Figure 13**) have been assessed as potentially experiencing significant adverse effects during the construction phase of the Proposed Development:

- Viewpoint 1.
- Viewpoint 2.
- Viewpoint 3.
- Viewpoint 4.
- Viewpoint 6.
- Viewpoint 8.
- Viewpoint 9.
- Viewpoint 14.
- Viewpoint 15.

Operational Phase

The Energy Park of the Proposed Development has been assessed as potentially causing geographically limited yet significant adverse effects upon the character of The Fens Regional Landscape Character Type and the associated Fenland Landscape Character Sub-Area (identified in the published North Kesteven Landscape Character Assessment).

No other landscape character receptors have been assessed as subject to significant adverse effects during the operational phase of the Proposed Development.

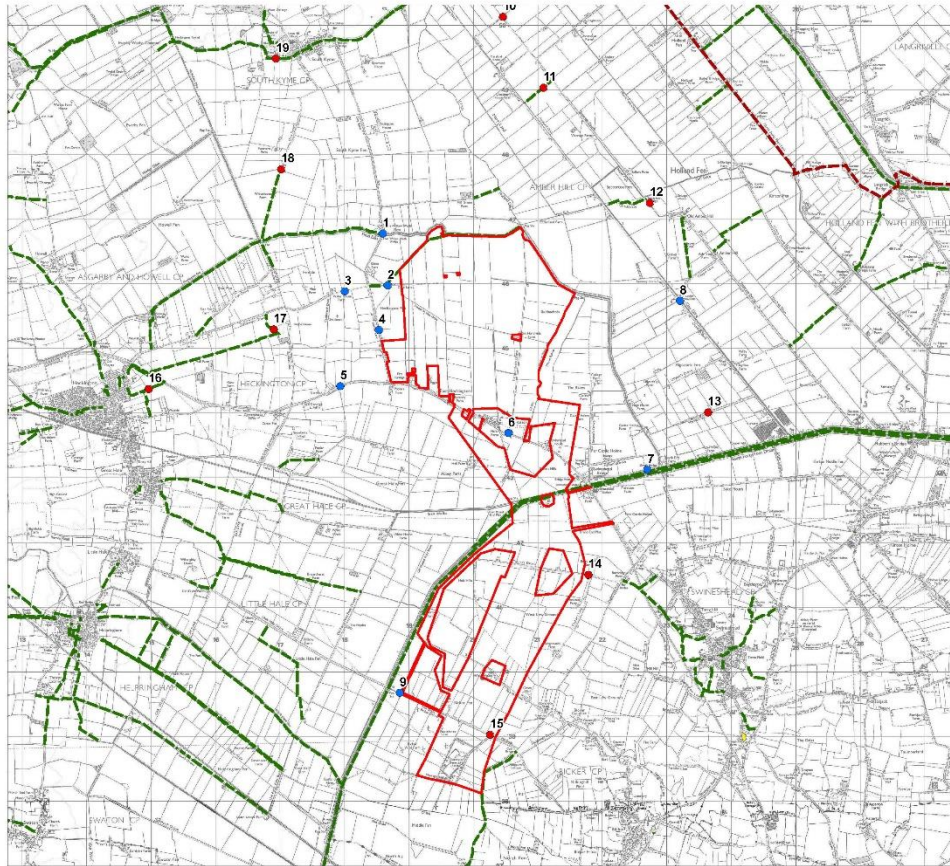
With regard to the visual receptors, the operational stage of the Proposed Development has been considered to bring about significant adverse effects upon the receptors within East Heckington, and specific residential receptors at Amber Hill.

Similarly, to the construction phase, road users travelling along the central and southern section of Sidebar Lane, will be subject to significant visual effects during the operational phase of the Proposed Development.

In terms of PRoWs, users along the following routes have been assessed as potentially subject to significant adverse effects during the operational phase of the Proposed Development:

- Public Footpath Heck/15/1.
- Public Footpaths Heck/13/1, Skym/2/1, and Skym/1/1.
- Public Footpath Ambe/5/1 near Chestnut House Farm

In terms of static receptors, the following viewpoints have been assessed as potentially experiencing significant adverse effects during the operational phase of the Proposed Development:



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- KEY**
- Site Boundary
 - SUSTRANS National Route
 - Public Right of Way
 - Open Access Land / Registered Common Land
 - Additional Viewpoints
 - Proposed Viewpoint Location (Scoping report stage)

FIGURE 13: VISUAL RECEPTORS AND VIEWPOINT LOCATIONS

- Viewpoint 1.
- Viewpoint 2.
- Viewpoint 3.
- Viewpoint 4.
- Viewpoint 6.
- Viewpoint 8.

No other visual receptors have been assessed as experiencing significant adverse effects during the operational phase of the Proposed Development.

Figure 14 and **Figure 15** are photomontages (stitched photographs aligned with a completed 3D model of the rendered Proposed Development infrastructure) presenting an interpretation of what the Proposed Development could look like. To note, the photomontages are indicative and used for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what will be apparent to the human eye.

6.3 Mitigation and Enhancement

At this stage the proposed mitigation measures constitute designed-in mitigation measures such as reduction in the extent of the proposed solar modules and refinements to the layout to provide physical separation from nearby residential and commercial properties.

The existing landscape elements and features within the Energy Park Site have been considered with offsets from internal and boundary watercourses and vegetation proposed to safeguard these features and to ensure continued maintenance access.

During the preliminary design, the proposed 400kV substation compound and energy storage area have been located within the south-eastern corner of the Energy Park to

maximise visual screening provided by the existing blocks of woodland and tree lines. Further landscape and visual assessment work will determine the appropriateness of such layout.

Existing hedgerows and lines of trees within the Energy Park would be protected and enhanced with gapping-up using appropriate species. New hedgerows would be established along the southern and western edges of the solar modules, and within the Energy Park. Further design options for mitigation measures, and species selection, are currently being considered.

As part of the Proposed Development a new community orchard is being proposed in the south western corner of the Energy Park. This would be located immediately to the north of the new school at Elm Grange.

6.4 Conclusion

It is important to acknowledge that significant effects on landscape character and visual amenity are an inherent consequence of a new development of this type and scale. However, in this case, any potential for adverse effects have been judged to be limited by the existing vegetation that characterises the close to medium range landscape. The proposed mitigation planting has the potential to considerably reduce such significant effects, which would be geographically highly limited, both in character and visual terms. Whilst certain elements of the Proposed Development would, inevitably, be more visible, for a scheme of its scale the residual landscape and visual effects arising are considered to be highly limited. Those effects which have been identified as being significant should therefore be balanced against the benefits of the Proposed Development.



FIGURE 14: PHOTOMONTAGE - VIEWPOINT 6 YEAR 10



FIGURE 15: PHOTOMONTAGE - VIEWPOINT 8 YEAR 10



Key
 400kV Substation
 132kV Substation
 Energy Storage
 Solar Panels



Parameters
 Solar Panel Areas – height 4.5m
 132kV substations – height 13m
 400kV substation – height 15m
 Battery storage unit – height 6m

RESIDENTIAL AMENITY

This Residential Visual Amenity Assessment (RVAA) has been prepared as part of the PEIR Chapter 7 and seeks to determine the preliminary visual effects upon the identified residential receptors and whether or not the Energy Park would result in unacceptable consequences to living conditions such that consent should be refused in the public interest. Only the Energy Park has been assessed and not the entire Proposed Development (Energy Park, grid cable route corridors and extension work at Bicker Fen Substation).

7.1 Baseline Conditions

The scope and study area of the residential properties included within this RVAA has been informed by the findings of the PEIR Chapter 6: LVIA, site surveys, the Zone of Theoretical Visibility (ZTV) mapping, post code data and consultation undertaken through the Scoping Report. Only the operational phase has been considered in the PEIR; the construction and decommissioning stage will be detailed in the ES supporting the DCO application.

Given the type and scale of the Energy Park and the dispersed nature of the surrounding residential properties, the likelihood of any significant visual effects is considered to be restricted to those within the immediate surroundings of the site.

7.2 Assessment of potential for likely significant effects

The findings of this PEIR Chapter 7: RVAA demonstrate that the Energy Park would cause some localised significant visual effects, but such effects would not be overbearing in the operation phase. It is predicted that the construction and decommissioning stage will bring about similar or lower magnitude of change, and similar effects to those assessed during the operational stage of the Energy Park.

None of the predicted effects occurring during the construction and decommissioning stage are likely to be overbearing or overwhelming.

7.3 Mitigation and Enhancement

Mitigation planting will be proposed in areas where there would be localised visual effects. In general terms, the magnitude of change on the residential properties will decrease with distance from the Energy Park and will reduce further once the proposed mitigation planting has established.

7.4 Conclusion

The findings of this PEIR Chapter 7: RVAA demonstrate that the Energy Park would cause some localised significant visual effects but such effects would not be overbearing. The analysed properties and predicted effects are outlined in Table 7.2 of Chapter 6.

ECOLOGY AND ORNITHOLOGY

The PEIR Chapter has, where surveys have been completed, identified and assessed the potential impacts effects of the proposed development of a 586.85ha Energy Park and off-site grid connection cable route and above grounds works at the National Grid Bicker Fen Substation on ecology and nature conservation value during construction, operation, and decommissioning.

An extended Phase 1 survey, badger surveys, breeding and wintering bird surveys have been completed on the Energy Park site. Wintering bird surveys have been completed on the off-site grid connection cable route and above grounds works at the National Grid Bicker Fen Substation. There are ongoing surveys for great crested newt, bats, aquatic plants and rare arable plants on the Energy Park site. Surveys for breeding birds, badger, great crested newts, rare arable plants and aquatic plants and an extended Phase 1 survey are currently being carried out along the proposed off-site grid connection cable route and above grounds works at the National Grid Bicker Fen Substation.

The PEIR Chapter provides an assessment of the potential direct and indirect effects on nature conservation designations, important habitats, protected species onsite and offsite. It considers avoidance design measures, mitigation, compensation and management activities to minimise any potential effects.

8.1 Baseline Conditions

The Energy Park and associated off-site Grid Connection will be situated within an intensively farmed landscape of low nature conservation value. The substation extension is within the National Grid land boundary, alongside the existing Bicker Fen Substation. The large fields associated with the remainder of the Proposed Development are divided by wet ditches and Internal Drainage Board managed water courses.

There are no sites of international, national or local importance within or adjacent to the Energy Park Site. There is one Local Wildlife Site (The South Forty Foot Drain) along the route of the off-site grid connection. The Wash SPA is approximately 16km from the Proposed Development. The data searches did not reveal the presence of any protected species within the Energy Park. There are records of otter from the South Forty Foot Drain and records of Water Vole within the last 5 years in the Great Hale Eau LWS.

Figure 16 shows the Statutory and Non-Statutory Sites and Protected and Notable Species within 10km

There are a limited number of gappy hedgerows on the Energy Park Site, and a small number trees mainly restricted to plantation woodlands. The wet drainage ditches provide suitable habitats for Water Vole and Otter but no evidence of their use by these species was found on the Energy Park Site. There is an active Badger population within the Energy Park Site. There are a number of common farmland birds using the Energy Park area. There are a small number of birds that contribute to the Wash SPA wintering in the area including a small flock of Pink-footed geese feeding on one section of Grid Connection route.

8.2 Assessment of potential for likely significant effects

During construction of the Energy Park there is a risk of dust deposit or silt runoff or disturbance to boundary habitat, woodlands, ponds, and wetlands. There is also risk of disturbance to wintering birds, nesting birds, brown hare, and badger during construction.

8.3 Mitigation and Enhancement

The initial design and construction methods will ensure negative effects are minimised from



the outset. The initial design of the Energy Park ensured a 9m stand off from all IDB watercourses which will ensure protection of water vole should they re-colonise the Energy Park Site. Direct drilling under the South Forty Foot Drain will ensure no negative effects on the Local Wildlife Site.

The initial design also includes the creation of 96ha of species rich grasslands and 1.8ha of traditional orchard managed specifically for nature conservation, largely to the south of the Energy Park Site. A further 46ha of species rich grassland within the Energy Park Site will be managed to maximise the nature conservation value. These open high quality grasslands will be managed to maximise their value for ground nesting farmland birds, bees, butterfly and other invertebrates. These grasslands will also provide extensive foraging habitat for brown hare and badger.

Beneath the solar panels 440ha of intensive arable farmland will be converted to low intensity sheep pasture. The conversion of the land from intensive arable to grass pasture will also dramatically reduce the runoff of agri-chemicals and topsoil into in the Wash SPA via the drainage network. There will be an overall significant residual, locally beneficial effect on biodiversity of area. The preliminary Net Biodiversity Gain calculation estimated a net gain 205.8%.

The implementation of a comprehensive Construction Environmental Management Plan (CEMP) will ensure there is no damage to any hedgerow, woodland or watercourses during construction. The implementation of this CEMP will ensure there is no significant disturbance or risk of injury or mortality of breeding farmland birds, disturbance to wintering wetland birds or disturbance and risk of injury to badger or brown hare.

8.4 Conclusion

The majority of the land is considered to be of low nature conservation value. Any temporary disturbance or risk of harm can be minimised through the implementation of a comprehensive Construction Environmental Management Plan. The initial design of Energy Park and on-going management will ensure that there is an overall biodiversity gain.

Overall, the Proposed Development with embedded and additional mitigation will have very few residual effects and none anticipated to be significant under the EIA Regulations. The Proposed Development would be acceptable in respect of ecology.



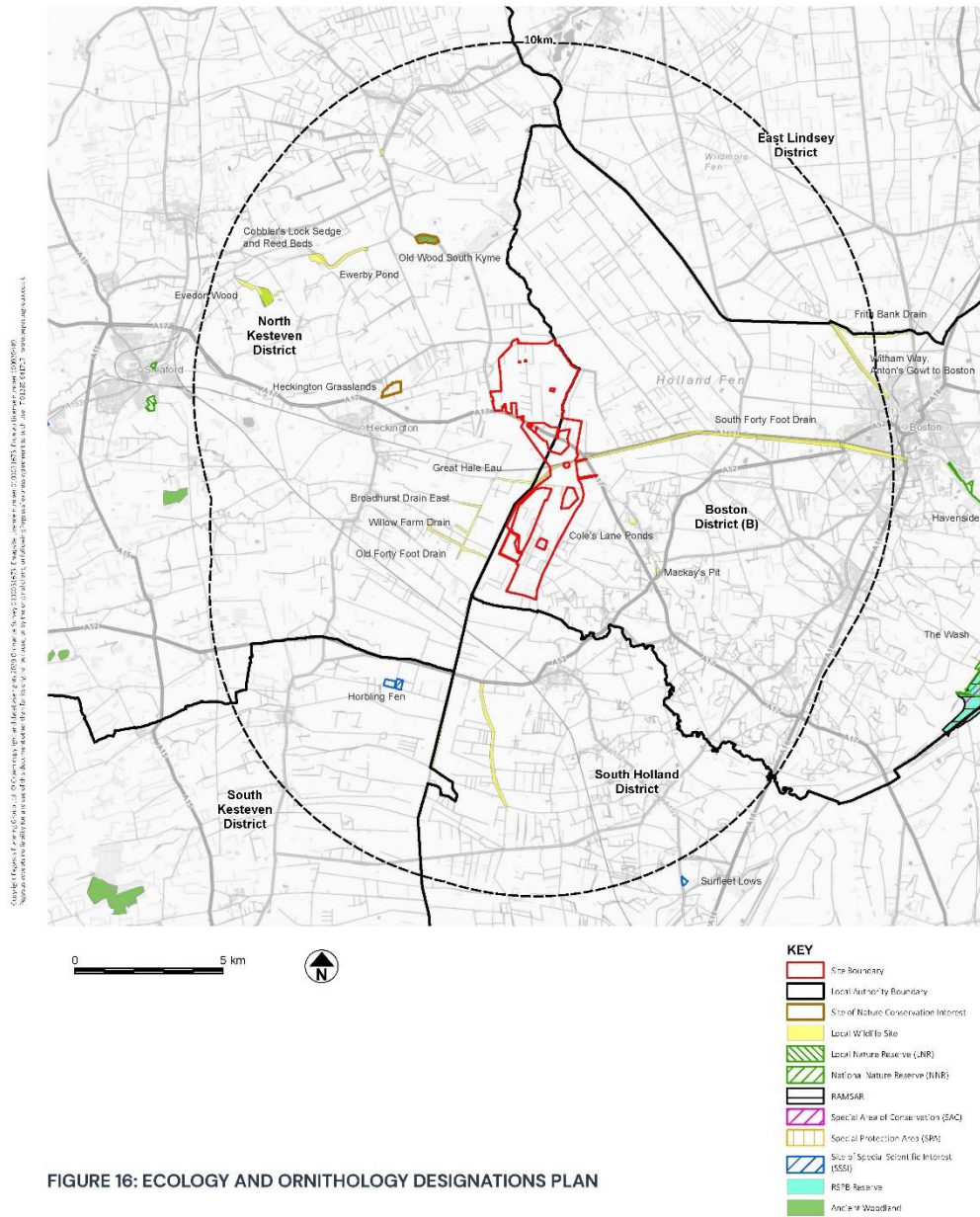


FIGURE 16: ECOLOGY AND ORNITHOLOGY DESIGNATIONS PLAN



HYDROLOGY, HYDROGEOLOGY, FLOOD RISK AND DRAINAGE

The PEIR Chapter has set out the assessment of likely significant effects of the Proposed Development upon hydrology, hydrogeology, flood risk and drainage arising from the construction, operation and decommissioning of the Proposed Development.

The assessment was supported by the collection and interpretation of data and information requested from the Environment Agency (EA), Black Sluice Internal Drainage Board (BSIDB) and North Kesteven District Council (NKDC). This information has been used to characterise the baseline water environment and identify receptors.

9.1 Baseline Conditions

The Proposed Development is situated on the Lincolnshire Fens, a coastal plain in the east of England which comprises a large area of broad, flat marshland.

The principal watercourses in the area are the River Witham and South Forty Foot Drain, located approximately 4km and 1.5km to the east and south of the proposed Energy Park respectively. Both are classified as Main River and therefore under the jurisdiction of the EA. The Energy Park itself is bound along the northern boundary by the Head Dike/Skerth Drain (which is also classified as Main River) and the site area is bisected by a number of ditches/drains, some of which are operated and maintained by the BSIDB. Water levels within the network of ditches/drains are managed through pumping to the Head Dike/Skerth Drain. **Figure 17** shows the hydrological features within the vicinity and surrounding area of the Proposed Development.

The Energy Park Site is currently in agricultural use and therefore comprises permeable surfaces, such that surface water run-off generally infiltrates into the ground or is routed

to the various ditches/drains that bisect the site. Similarly, the off-site cable route traverses an area characterised by agriculture.

According to the EA's flood map, the majority of the Energy Park Site is located within Flood Zone 3 (High Probability – land having a 1 in 100 or greater annual probability of fluvial flooding) and benefits from flood defences offering a 1 in 10-year standard of protection.

The off-site cable route and National Grid Bicker Fen Substation are also shown to lie within Flood Zone 3.

The EA 'Flood Risk from Surface Water Map' shows that the majority of the Energy Park and the off-site cable route and National Grid Bicker Fen Substation are at 'Very Low' risk of surface water flooding.

The EA 'Flood Risk from Reservoirs Map' shows the area that may be affected by flooding as a result of a breach of a large, raised reservoir i.e., capable of storing over 25,000 cubic metres of water above the natural level of any part of the surrounding land. According to EA records, the nearest reservoir is located approximately 8km to the west of the Energy Park, between Heckington and Sleaford. The EA's map shows that, when river levels are normal, only limited and localised areas along the northern boundary of the Energy Park adjacent to Head Dike are affected by reservoir flooding. The off-site cable route and National Grid Bicker Fen Substation are unaffected by reservoir flooding when river levels are normal.

British Geological Survey mapping indicates that the Energy Park, off-site cable route and National Grid Bicker Fen Substation are entirely underlain by superficial and bedrock deposits comprising predominantly low permeability clay (see **Figure 18**). EA aquifer designation maps categorise both the superficial deposits and bedrock deposits as 'unproductive' (i.e.



areas comprised of rocks that have negligible significance for water supply or baseflow to rivers, lakes and wetlands).

The Proposed Development lies within the 'Black Sluice IDB draining to the South Forty Foot Drain Water Body', which is designated as 'heavily modified' (substantially changed in character as a result of physical alterations by human activity). The environmental (Water Framework Directive) objective for the water body is to achieve 'good ecological potential'. The overall water body classification is currently 'Moderate' potential (Cycle 2, 2019).

9.2 Assessment of potential for likely significant effects

The assessment finds that construction activities have the potential to impact upon the surface water drainage regime and increase surface water run-off from the Proposed Development. Similarly, the assessment identifies the potential for construction activities to give rise to the contamination of surface water resulting from spilled hydrocarbons/petrochemicals from construction plant and the mobilisation of silts and contaminants during soil stripping and earthworks operations, potentially leading to increased silt loading in watercourses.

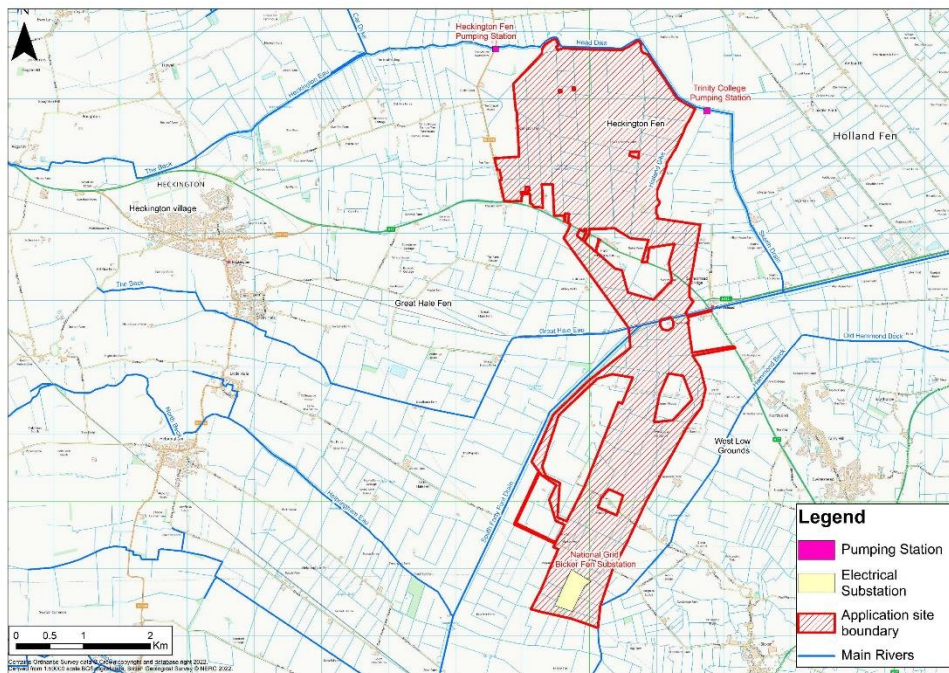


FIGURE 17: HYDROLOGICAL FEATURES

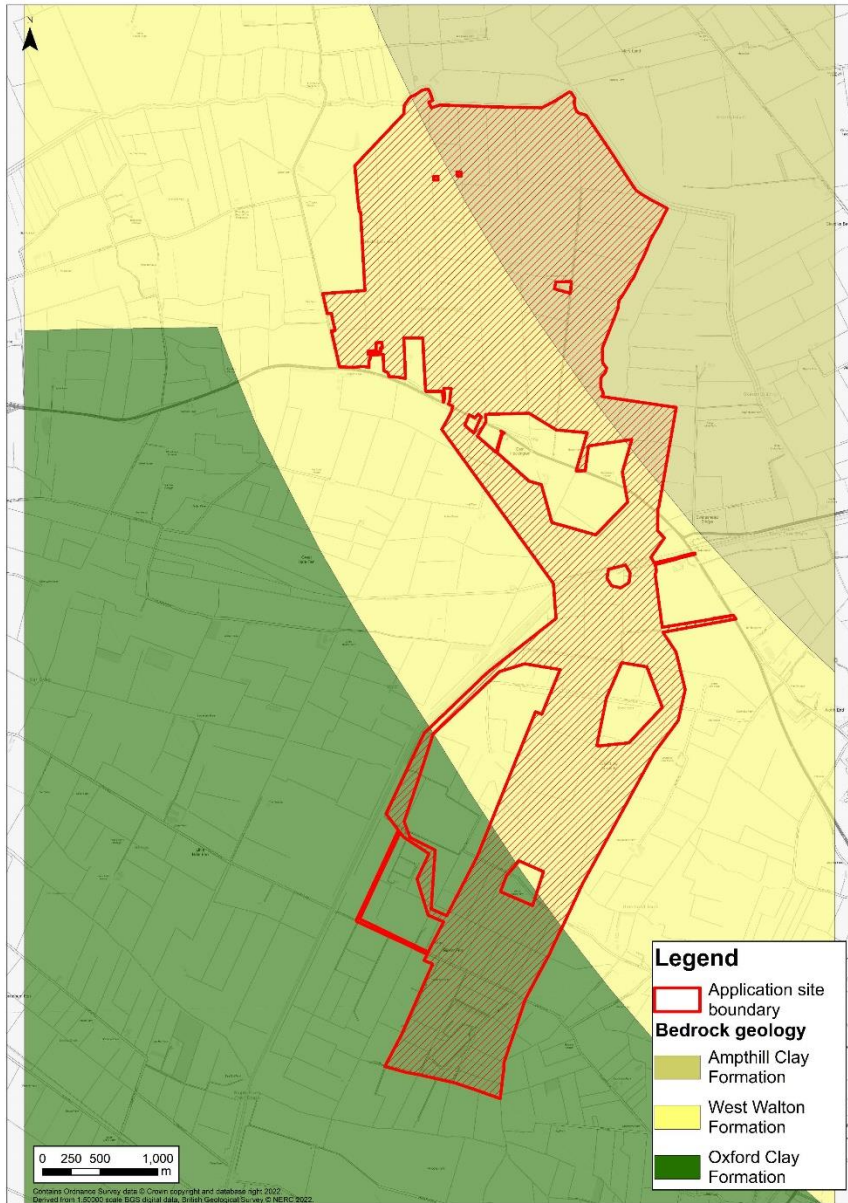


FIGURE 18: BEDROCK GEOLOGY

The assessment also notes that construction works in close proximity to the flood defences have the potential to affect the stability of the embankment and therefore the structural integrity of the defences. Also, floodplain storage and flood flows/flood routing processes may be affected as a result of construction activities and earthworks operations within the floodplain, such that there is potential to increase flood risk locally and downstream.

However, the assessment finds that these likely effects are Not Significant, on account of 'mitigation by design'/embedded mitigation measures that are either 'built-in' to the proposals from the outset or secured through a DCO requirement.

Potential construction phase effects upon groundwater aquifers are found to be Not Significant, principally on account of the low permeability of the ground and the unproductive nature of the aquifers.

During the operational phase of the Proposed Development, the assessment finds that an increase in the impermeable area within the Energy Park Site has the potential to increase surface water run-off to the adjacent drains, potentially increasing flood risk elsewhere. Similarly, the assessment identifies the potential for the contamination of surface water entering the local surface water drains, resulting from the flushing of silts and hydrocarbons from areas of hardstanding. However, the assessment finds that these likely effects are Not Significant, on account of 'mitigation by design'/embedded mitigation measures that are either 'built-in' to the proposals from the outset or secured through a DCO requirement.

The assessment also notes that the raising of ground levels to locate flood-sensitive infrastructure above the flood level has the potential to reduce the volume of storage

available within the floodplain. However, the assessment notes that any such ground raising would be very small scale and localised and located within a significant expanse of floodplain. On this basis, it is concluded that the likely effects are Not Significant.

Potential operational phase effects upon groundwater aquifers are found to be Not Significant, principally on account of the low permeability of the ground and the unproductive nature of the aquifers.

The electrical connection to the National Grid Bicker Fen Substation comprises an underground cable that would not require water, nor be sensitive to flood risk. The assessment therefore concludes that, during the operational phase, it would not give rise to impacts upon hydrology, hydrogeology, flood risk and drainage.

9.3 Mitigation and Enhancement

Potential effects arising from construction of the Energy Park, off-site cable route and works at the Bicker Fen Substation are likely to be localised and temporary and controlled by embedded mitigation measures. The effects are therefore Not Significant and there is no requirement for additional mitigation measures.

At the end of its operational life, the decommissioning of the Energy Park is considered to have similar effects upon the water environment as those during the construction stage and, therefore, similar measures to reduce effects are likely to be proposed. On this basis, it is concluded that there is unlikely to be a requirement for additional mitigation measures.

At the end of its operational life, it is anticipated that the off-site electrical cabling would be left in situ, although all above ground works would be removed. As such there would be limited decommissioning works and therefore



limited or no potential effects upon hydrology, hydrogeology, flood risk and drainage.

The electrical connection comprises an underground cable such that, during the operational phase, it would not give rise to impacts upon hydrology, hydrogeology, flood risk and drainage.

With the implementation of embedded mitigation measures the effects associated with operation of the Energy Park are Not Significant. On this basis, there is no requirement for additional mitigation measures over and above those identified.

9.4 Conclusion

It is concluded that potential effects arising from construction of the Proposed Development are likely to be localised and temporary and controlled by embedded mitigation measures. The residual effects are therefore Negligible and Not Significant.

With the implementation of embedded mitigation measures, the residual effects associated with operation of the Energy Park are Negligible and Not Significant. The electrical connection to the National Grid Bicker Fen Substation comprises an underground cable that would not give rise to impacts upon hydrology, hydrogeology, flood risk and drainage during the operational phase.



CULTURAL HERITAGE

The PEIR Chapter has considered potential effects upon the significance of cultural heritage receptors. Buried archaeological remains, earthworks, buildings / structures, and all other aspects of the historic environment have all been considered.

10.1 Baseline Conditions

No designated heritage assets are located within the land being considered for the Proposed Development.

Known and potential non-designated heritage assets located within the Energy Park Site comprise the upstanding remains of a derelict outfarm, a boundary wall, and a drainage pump; and the buried remains of a former duck decoy, former outfarms and field boundaries, and rectilinear and linear ditched features of uncertain origin.

There is currently nothing to suggest that these buried remains are or would be of the highest heritage significance in and of themselves, but the need for and timing and scope of further archaeological investigations to clarify this will be negotiated and agreed through forthcoming discussions between Pegasus Group and Lincolnshire County Council, North Kesteven District Council and Boston Borough Council.

There are many Scheduled Monuments, Listed Buildings, Conservation Areas and non-designated heritage assets located within a minimum 5km-radius of the Energy Park Site (see **Figure 19**). Assessment work to date has indicated that the Grade I Listed Kyme Tower at South Kyme, the non-Listed Primitive Methodist Chapel on Sidebar Lane, and the non-Listed Mill Green Farmhouse may be particularly sensitive to the Proposed Development through change to their setting.

10.2 Assessment of potential for likely significant effects

No significant effects have been identified through the assessment work that has been undertaken to date. This includes direct effects as a result of truncation or destruction of buried archaeological remains, and indirect effects as a result of changes to setting.

10.3 Mitigation and Enhancement

At this stage, no mitigation through design is considered necessary for archaeology but planting may be necessary to screen the Energy Park in views from selected heritage assets.

Mitigation may also be required pre-commencement to counter the impacts of construction activities upon the known and potential buried archaeological resource of the Energy Park Site. This may also be required along the off-site cable route, but the geophysical survey of this route is proposed after the 2022 harvest. Once this data has been gathered the need for mitigation can be assessed further.

10.4 Conclusion

This chapter has identified no significant residual effects in respect of cultural heritage assets (above and below ground) that would arise from a development of the nature and on the scale proposed.

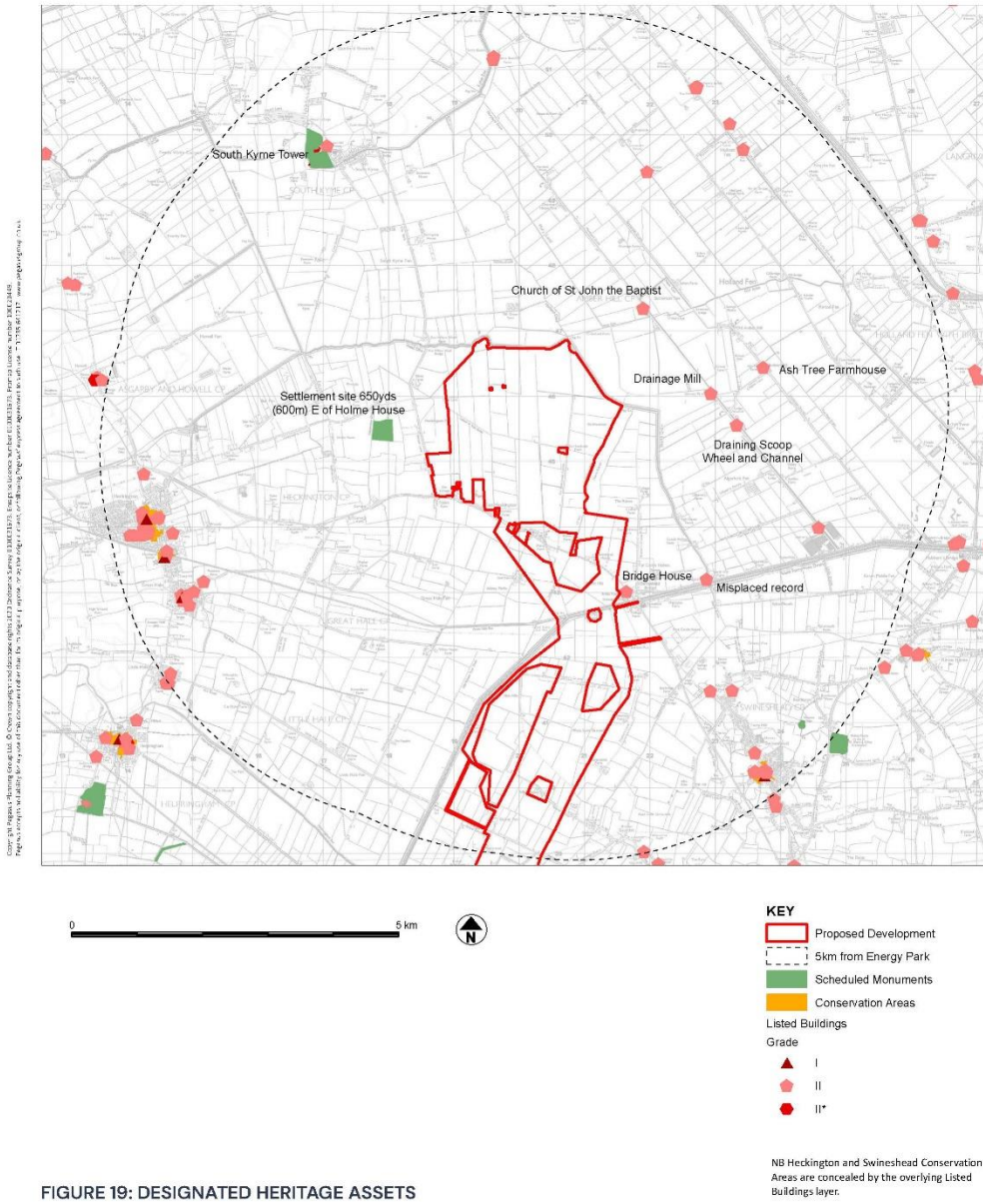


FIGURE 19: DESIGNATED HERITAGE ASSETS

SOCIO-ECONOMIC

The Socio-Economic chapter of the PEIR has analysed the baseline socio-economic conditions and then gone on to assess the likely socio-economic effects of the Proposed Development.

11.1 Baseline Conditions

North Kesteven experienced population growth of 8.8% between 2011 and 2020 (9,600 additional people), and in Boston there was a relatively higher population growth of 9.6% (6,200 additional people). Relative to the benchmark areas of East Midlands and Great Britain, North Kesteven and Boston's population grew at a faster rate over this timeframe. Employment growth in North Kesteven over the last five years has been strong with 7.7% increase in job numbers, especially when compared to the picture at a regional and national level (2.4% and 2.2% respectively). There was no employment growth in Boston in that same period. Lincolnshire County experienced a very similar rate of employment growth (2%) as at the regional and national scale. The construction sector, which is likely to see increased employment opportunities during the Proposed Development's build phase represents 7.1% of total employment in the District, which is above the proportion of total jobs at the regional scale (4.7%) and Great Britain (4.9%). North Kesteven has a net outflow of commuters, while Boston has a net inflow of commuters. The claimant count, (a measure of the number of people claiming unemployment related benefit), in Boston has risen by 2.3% (additional 1,005 claimants) in the period March 2019 to April 2022 and is currently above all other comparator areas. The claimant count in North Kesteven increased but only by 0.5% in this period and is well below all other comparator areas as well as Boston.

11.2 Assessment of potential for likely significant effects

In respect of the construction phase, the assessment indicates that the Proposed Development will have the following temporary effects:

- 67 direct and indirect/induced construction jobs and indirect/induced supply chain jobs over the 18-month construction programme.
- £29.3million of gross value added over the 18-month construction programme.

The overall socio-economic effect during the construction phase is minor to moderate beneficial in the short term.

In respect of the operational phase, the assessment indicates that the Proposed Development will have the following effects:

- 13 net additional jobs in the North Kesteven economy.
- £625,800 of gross value added per annum or £13.9 million over 40-year lifespan of the project (present value).
- Business rates £1.3 million per annum and £28.8 million over the 40-year project lifespan (present value).

The overall socio-economic effect during the operational phase is minor-moderate beneficial in the long term.

In respect of the decommissioning phase, the assessment indicates that the Proposed Development will have similar scale of effects to those identified during the construction phase. As such, the overall socio-economic effect during the decommissioning phase is expected to be minor to moderate beneficial in the short term.



11.3 Mitigation and Enhancement

Due to the beneficial impacts identified in the assessment, no requirement for additional mitigation measures or enhancement measures has been identified.

11.4 Conclusion

The Proposed Development would lead to no adverse significant residual effects from a socio-economic perspective. The Proposed Development will result in a minor to moderate beneficial effect within the construction, operational and decommissioning period in respect of job creation, gross value added, business rates of receptors and the receiving environment. Continued efforts to address wider benefits for the community will be undertaken separately and outside of the DCO process.



NOISE AND VIBRATION

This Noise and Vibration chapter of the PEIR has considered the potential effects of noise and vibration associated with the Proposed Development, both associated with the different construction and decommissioning activities and traffic, as well as the operational phase.

12.1 Baseline Conditions

The baseline conditions were determined from a combination of new survey work and reference to historical data captured at noise-sensitive receptors neighbouring the Site (see **Figure 20** for noise assessment locations surveyed around the vicinity of the Proposed Development).

12.2 Assessment of potential for likely significant effects

The assessment has identified potential significant noise effects if trenchless work is required and remains active at night, depending on the final locations where this may be required along the grid connection route.

Noise and vibration from other construction activities may be audible or perceptible at times but the worst-case levels are such that, providing construction working hours are controlled in a standard manner, their effect would be either not significant or negligible. Construction traffic is associated with negligible effects.

Operational noise from electrical or mechanical plant could be sufficiently high in relation to the baseline noise environment and context of the area (during quieter periods of the evening and night), on the basis of worst-case assumptions, such that this could result in a significant effect at some of the closest receptors to the Site.

12.3 Mitigation and Enhancement

Construction working hours would be controlled for most noise-generating activities (including restrictions on piling work for Saturday afternoons), and good practice measures would further reduce noise levels in practice.

The potential effects of trenchless construction if required for night-time work would be minimised and managed through the design of the grid connection route and use of localised screening, and liaison with the closest affected residents. Where these works are required in relative proximity to sensitive receptors, such that significant effects remain likely, alternative techniques, interruption of the drilling at night or offer of temporary re-housing (for the duration of these works) would be investigated. Worst-case residual effects could however remain significant should these measures not be possible to implement in practice.

Operational noise would be controlled to a set of proposed noise limits at the nearest noise-sensitive receptors through detailed design and selection of electrical/mechanical equipment, attenuation and/or screening measures. The residual effects would then be either not significant or negligible.

12.4 Conclusion

It is therefore concluded that the effects of the Proposed Development can be suitably controlled such that significant residual adverse effects are eliminated where reasonably practicable.

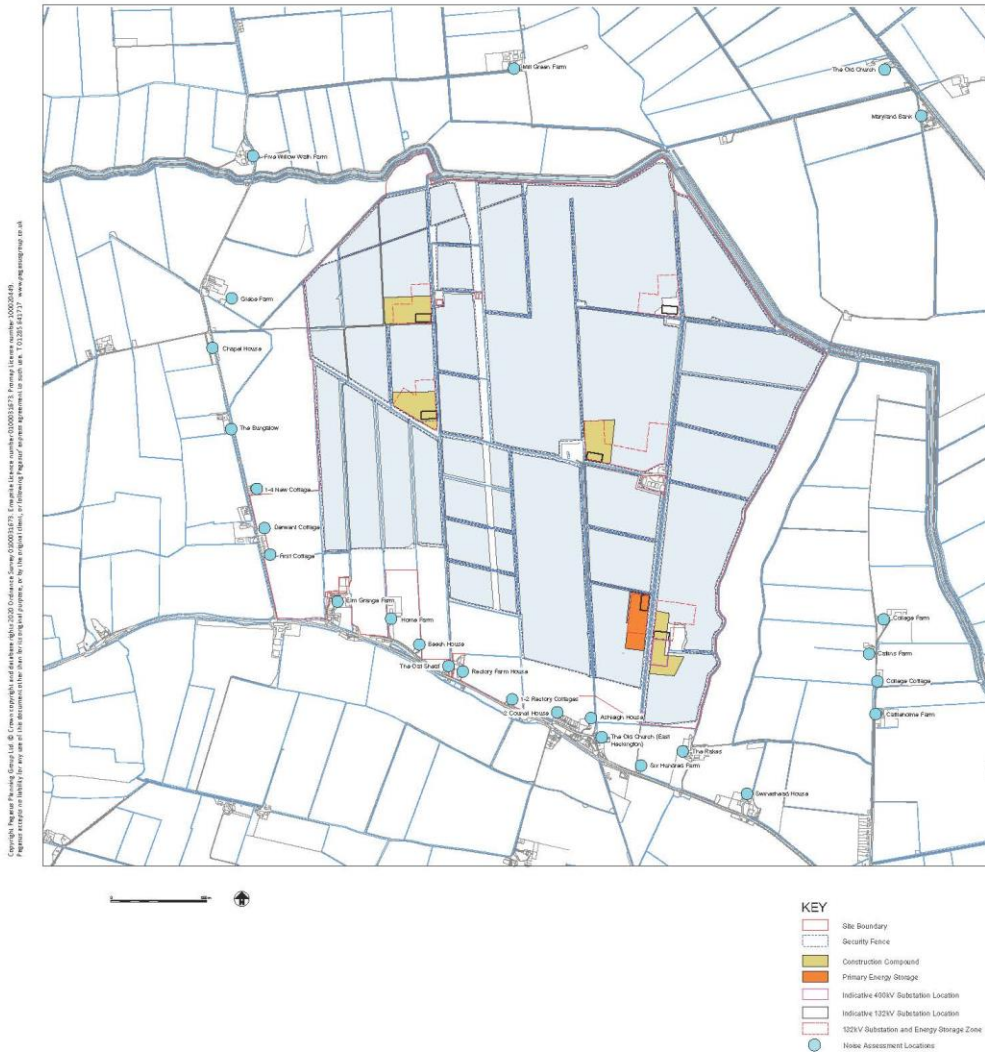


FIGURE 20: NOISE ASSESSMENT LOCATIONS

CLIMATE CHANGE

To reflect the requirements of the 2017 EIA Regulations, an assessment has been undertaken of the potential effects of the Proposed Development on climate change adaptation. In accordance with recognised guidance, this has included both the vulnerability of the Proposed Development to climate change and also any implications of climate change for the predicted effects of the project, as assessed by the other topic specialists ('in-combination climate effects').

13.1 Baseline Conditions

Baseline conditions have been determined with respect to average maximum and minimum summer and winter temperatures, average summer and winter sunshine hours and average summer and winter wind speeds.

With respect to future baseline conditions, the assessment uses the UKCPI8 climate projections for the 2080s which suggest that, in future, the Site and its surroundings will experience warmer, drier summers and milder wetter winters. Whilst heavy rain days are likely to increase throughout the year, there is still considerable uncertainty with respect to likely changes in both wind speed and storm frequency/intensity. All other ES topic area authors were provided with a summary of the climate change projections and were asked to consider the relevance of this for their baseline descriptions. Whilst some possible changes were noted, it was not felt that baseline conditions would be materially altered to such an extent that this would need to be reflected in the subsequent assessments of effects.

13.2 Assessment of potential for likely significant effects

With respect to the vulnerability of the Proposed Development, it is not considered that the project could be affected by climate change to such an extent that the construction and/or operation of the Proposed Development could potentially become unviable. Therefore, no significant adverse effects are predicted.

With respect to 'in-combination climate effects', the assessment considered the projected climate change projections in more detail in relation to landscape and visual amenity (operational phase), cultural heritage (construction phase) flooding and drainage (construction and operational phase), ecology (construction and operational phase) and noise (operational phase). No new significant effects were identified for these topic areas as a consequence of projected climate change.

13.3 Mitigation and Enhancement

Whilst a number of mitigation measures will be included to ensure project resilience, effects will remain as outlined above.

No additional mitigation is required in relation to in-combination climate effects. Effects will remain as outlined above.

13.4 Conclusion

No significant residual effects have been predicted in relation to climate change adaptation, either for the Proposed Development in isolation or cumulatively.



TRANSPORT AND ACCESS

The Transport and Access PEIR chapter assesses the potential effects relating to transport and access. It considers the potential effects on vehicular traffic flows, accidents and safety, severance, driver delay, hazardous and dangerous loads and dust and dirt.

The PEIR chapter has been prepared alongside a supporting Draft Outline Construction Traffic Management Plan.

14.1 Baseline Conditions

The Energy Park Site is located to the immediate north of the A17, approximately 3.7km to the east of Heckington and around 8km to the west of Boston.

Access to the Energy Park during the construction and operational phases is proposed with the A17 to the south of the site, approximately 900m northwest of the junction with Six Hundreds Drive. Whilst the proposed access is under construction, a temporary construction access will be provided via an existing junction with the A17, approximately 600m southeast of B1395 Sidebar Lane junction (see Figure 12 for proposed site accesses). The cable route will be accessed using existing junctions with the A17.

At this stage, the exact point of access to the proposed Point of Connection (PoC) is not confirmed. However, it is anticipated that access to the north of the railway line will be served via Parks Farm. The preferred access option to the south of the railway is via the Triton Knoll or National Grid access points at the A17 and the A52 Bicker Road respectively. However, the assessments have also considered access to the PoC via Royalty Lane. Where possible, any access and routing options would seek to avoid Bicker.

Baseline surveys from 2022 confirm that daily (24 hour) traffic flows past the site on the A17 are up to around 21,307 vehicles with around 16 percent HGVs. Data from the most recent five-year period show that there are not any existing highway safety issues on the local highway network that would be exacerbated by the Proposed Development.

14.2 Assessment of potential for likely significant effects

Impact Magnitudes have been defined for the construction phase with regard to 'Guidelines for the Environmental Assessment of Road Traffic', which states that a significant environmental impact may occur when traffic flows increase by more than 10% where the study area is of high sensitivity significance. This has, for the purposes of this assessment, been considered to represent a negligible impact significance.

The impact of the construction phase traffic is considered to be of Negligible significance.

14.3 Mitigation and Enhancement

Mitigation will be provided in the form of a Construction Traffic Management Plan (a draft Outline of which has been included within the PEIR) to reduce the impacts of the construction phase.

14.4 Conclusion

It is concluded that the proposed package of mitigation will ensure that the Proposed Development is acceptable and that there will be no adverse significant residual effects. There are therefore no highways or transportation reasons which should prevent the Proposed Development.



AIR QUALITY

The Air Quality PEIR Chapter focuses on the potential air quality effects at existing sensitive receptors during the construction phase.

15.1 Baseline Conditions

The Proposed Development is not located within or near to an Air Quality Management Area (AQMA).

Monitored concentrations in the vicinity of the Proposed Development show pollutant concentrations have been below the Air Quality Objectives (AQO) for the last five years of representative monitoring data (see **Figure 21**).

15.2 Assessment of potential for likely significant effects

Predicted construction traffic flows have been screened against Environment Protection UK (EPUK) and Institute of Air Quality Management (IAQM) guidance and considered to be not significant.

In addition, dust and non-road mobile machinery emissions during the construction phase will be controlled via a Construction Environmental Management Plan (CEMP) and as such are considered to be negligible and therefore the effects are not significant.

15.3 Mitigation and Enhancement

Construction phase emissions to air will be controlled by a CEMP and Construction Traffic Management Plan (CTMP).

15.4 Conclusion

It is concluded that the proposed package of mitigation will ensure that the Proposed Development is acceptable and that there will be no adverse significant residual effects to air quality.

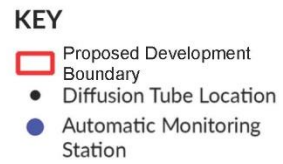
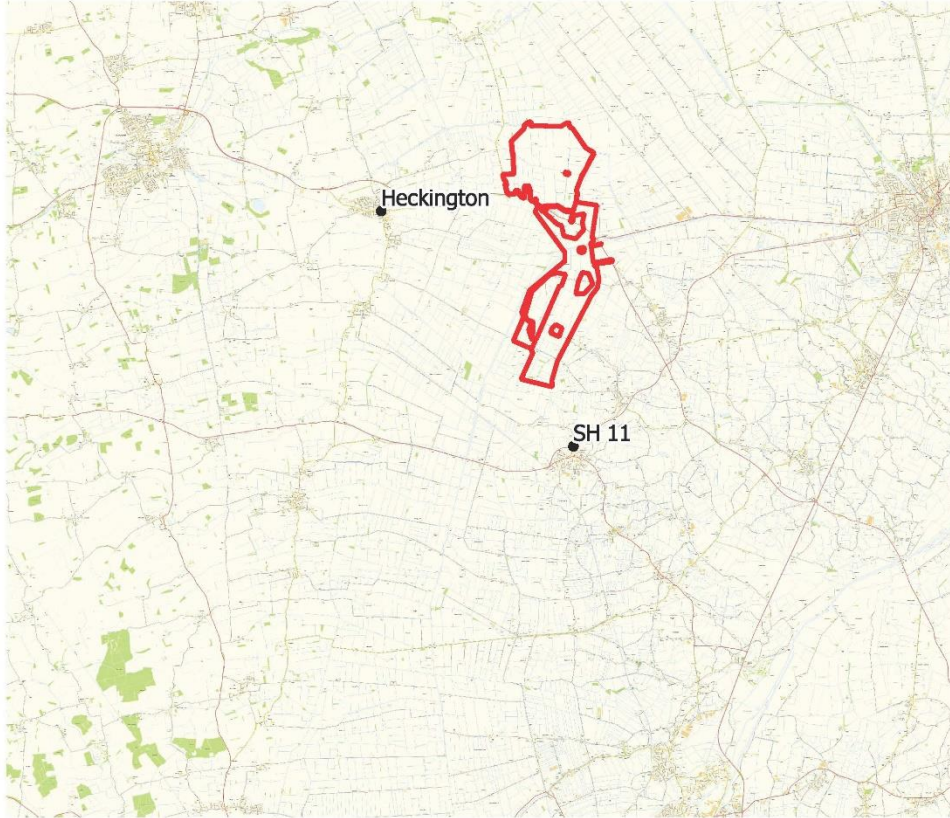


FIGURE 21: AIR QUALITY MONITORING LOCATIONS

LAND USE AND AGRICULTURE

The Land Use and Agriculture PEIR Chapter focuses on the agricultural land quality of the Energy Park and potential effects of the Proposed Development on agricultural land and businesses during construction, operation, and decommissioning.

16.1 Baseline Conditions

Agricultural land quality is assessed by use of the system of Agricultural Land Classification (ALC). The ALC system divides land into five grades 1 to 5, with grade 3 divided into subgrades of 3a and 3b. The National Planning Policy Framework (NPPF) (2021) places Grades 1, 2 and 3a within the definition of the 'best and most versatile agricultural land' (BMV).

An ALC survey of the Energy Park was undertaken in late 2021. The ALC results of the Energy Park area showed 45% of the land is Grade 3b, 30% Grade 3a, 13% Grade 2, 11% Grade 1 and 1% Non-Agricultural (see **Figure 22**). The Energy Park covers an area of land which is greater than the area where solar panels, energy storage, and ancillary equipment will be installed as it also includes Biodiversity Net Gain areas.

16.2 Assessment of potential for likely significant effects

The potential for adverse effects on agricultural land (both on the soils and the land quality) is greatest during the construction phase. The trafficking of agricultural land by construction vehicles and machinery, the timing of work on soils and the timing and methodology of cable laying will be required to be carried out in accordance with industry good practice and methodologies tailored specifically for the soils within the Energy Park.

There will be areas where fixed equipment is required, especially transformers. These may be placed on concrete pads or on concrete point foundations, but there is likely to be a need to

remove topsoils to construct base areas. So far as possible and practicable, areas of fixed equipment will be located on the lowest quality agricultural land available.

There should not be a direct loss (permanent sealing or downgrading of land quality) of one or more soil functions by the installation of the PV arrays. The construction process involves piling support poles into the soils but there is no disturbance to the land, and the land is not sealed.

There will be normal ongoing agricultural grazing land uses and agricultural management of the grassland beneath the PV arrays and the areas used for ecological enhancement (the biodiversity net gain areas) during operation. The potential for an adverse impact on soils and land quality during the operational phase is therefore considered to be negligible.

There is the potential to damage soils and soil structure, and in extreme cases there is the potential to bring about localised reduction of agricultural land quality, during the decommissioning phase. Damage to soil structure is generally a short-term effect recoverable with normal agricultural cultivation equipment.

The Heckington Fen Proposed Development is a standalone proposal not connected to any other proposed developments, solar or otherwise. As such there are no direct cumulative effects on the use of agricultural land, and on any agricultural land losses, with other developments. Within Lincolnshire County there are four other NSIP solar schemes applying for DCO consent, and a further five solar schemes within 11km of the Proposed Development. Therefore, if all of these schemes were to gain planning consent, and all of the land within the application redlines was used for solar development the total use of agricultural



land would be 3,965ha. The Energy Park Area for the Heckington Fen Proposed Development is 589ha. If all 10No. schemes gained planning consent and became operational then the total use of agricultural land in Lincolnshire would be 4,554ha.

Table 1 shows this use of agricultural land when compared to the total area of agricultural land within Lincolnshire.

TABLE 1: TOTAL CUMULATIVE USE OF AGRICULTURAL LAND IN LINCOLNSHIRE (BASED ON THE 1977 MAFF PROVISIONAL ALC, SEE TABLE 16.3 ABOVE)

	Total Area (ha)	Percentage
Total Area of Lincolnshire	591,800	100%
Total Area of Agricultural Land within Lincolnshire	566,200	96%
Total Cumulative Area from 10No Solar Farms in Lincolnshire	4,554	0.8%

It can therefore be concluded that if all of these ten solar farms became operational and none carried out any ongoing agricultural practices within their application sites for their operational lifetimes, 0.8% of Lincolnshire’s agricultural land would be used for solar farms.

16.3 Mitigation and Enhancement

This preliminary assessment has identified that there are no significant adverse effects on agricultural land quality that cannot be mitigated. The preliminary view is that through a combination of careful mitigation, management and good practice measures, which would be implemented through the CEMP (to be secured via a requirement through the DCO), at the construction and decommissioning

phase, the agricultural land quality will not be significantly adversely affected. The overall effects on soils and agricultural land quality are not anticipated to be significant. With careful planning and practice any localised effects on farm businesses can be avoided or mitigated, and measures secured within the CEMP.

16.4 Conclusion

It is concluded that the area of land that will be irreversibly developed (as a result of internal access tracks and foundations for the substations and transformers) is likely to be less than 5ha of best and most versatile agricultural land, and consequently this will be a slight adverse effect. However, in EIA terms this is regarded as not significant. There are no significant residual effects on soils or farm businesses.





GLINT AND GLARE

The Glint and Glare PEIR chapter assesses the potential glint and glare effects associated with the Energy Park comprising solar photovoltaic (PV) arrays on land at Heckington Fen. The assessment has considered both fixed panel layouts and trackers.

17.1 Baseline Conditions

There are a range of other common materials and surfaces likely to cause glint that are already present in the study area. These include, inter alia:

- glass in windows;
- conservatories or greenhouses;
- flashes caused by light reflecting off passing vehicles; and
- calm water.

Since it is not possible to assess all reflective materials in the 5km study area due to the sheer number of potential reflective surfaces present, the baseline will assume there is no other glint present. **Figure 23** shows the receptors of interest assessed within the Glint and Glare assessment.

17.2 Assessment of potential for likely significant effects

In both cases the modelling has predicted theoretical potential for 'yellow' glint. That is glint which is of medium intensity and which has potential for temporary after image (i.e. an image that continues to appear in the eyes after a period of exposure to the original image). This glint is considered to be significant.

The Zone of Theoretical Visibility (ZTV) modelling does not account for intervisibility between receptor and the Energy Park. The ZTV reveals that, based on a bare earth model, nearly everywhere within the study area would be visible due to the very flat landscape. The ZTV is based on a maximum panel height of 4.5m and a receptor height of 1.8m.

In reality, screening in the form of intervening trees, hedgerows, buildings and other surface features would eliminate much of this potential for glint. Consideration has been given to the level of screening within the intervening landscape.

Even accounting for screening present, some receptors still have potential to receive glint. On this basis further mitigation in the form of increased hedgerow screening around the perimeter of the Energy Park is proposed to minimise the potential for any glint effects to occur.

17.3 Mitigation and Enhancement

Following the implementation of such mitigation it is expected that residual effects would be negligible.

17.4 Conclusion

With suitable mitigation it is expected that all glint effects can be managed effectively and there will be no residual effects.





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	Energy Park Boundary
	Proposed Panel Area
	Panel Area - 5km Buffer
	Observation Points (Dwellings)
	Road Routes
	Rail Routes

Notes: This map shows the various receptors that are considered in more detail in the Glint chapter of the PEIR.

FIGURE 23: RECEPTORS OF INTEREST

MISCELLANEOUS ISSUES

The PEIR Chapter on Miscellaneous Issues assesses the following topics: major accidents and disasters; electric, magnetic and electromagnetic fields; telecommunications, television reception and utilities; and waste. None of these warrant individual chapters in the PEIR, either due to the brevity of the assessment or the small impact associated with the Proposed Development.

18.1 Major Accidents and Disasters

This section summarises the potential effects of the project on the risks of major accidents or disasters occurring and affecting the Proposed Development. 'Accidents' are an occurrence resulting from uncontrolled developments in the course of construction, operation and decommissioning (e.g., major emission, fire or explosion). 'Disasters' are naturally occurring extreme weather events or ground related hazard events (e.g., subsidence, landslide, earthquake).

Baseline Conditions

A number of receptors are present in the vicinity of the Proposed Development which could be vulnerable to major accidents or disasters, either because of their proximity to the Proposed Development or their importance to the surrounding area. These include:

- Towns, villages, farms and residential homes;
- Commercial sites and buildings;
- Roads;
- Railways;
- Designated ecological sites, woodland, farmland, and waterbodies; and
- Underground infrastructure services including electricity, water, communications, and gas.

Assessment of potential for likely significant effects

There are various health and safety considerations particularly for workers during construction and decommissioning of the Development. Workers are in the closest proximity to the Development as a result are considered to be the most at-risk group. However, the risk to both construction workers and the general public is low and not significant during the construction and decommissioning phases.

The design of the Proposed Development's infrastructure, such as batteries, could lead to a fire risk if there was equipment failure. Routine maintenance, system testing, fire protection design for battery equipment would result in the risk of major disaster or accident as not significant.

The cable route corridor for the two potential grid connection route crosses the railway line connecting Grantham to Skegness, also known as the 'Poacher line'. The underground cable crossing will be managed to the specific requirements of Network Rail and therefore the risk of a rail accident as a result of the crossing will be minimised and considered not significant.

A high-pressure gas pipeline (Feeder 7 East Heckington to Gosberton) bisects the Site running in a north-south direction through the centre of the Energy Park site. The design of the Proposed Development has ensured risk of major accident or disaster is minimised and considered not significant.

Mitigation and Enhancement

Minimising the risk of major accidents during construction and decommissioning will be addressed through appropriate risk assessments as required in the CEMP.

Conclusion

The Proposed Development is not expected to increase the risk of major accidents or disasters during construction, operation and decommissioning. Therefore, the effects on major accidents and disasters are considered not significant.

18.2 Waste

This section discusses the expected waste streams during each phase of the Proposed Development. Wastes include surplus spoil, scrap, recovered spills, unwanted surplus materials, packaging, office waste, wastewater, broken, worn-out, contaminated or otherwise spoiled plant, equipment and materials.

Baseline Conditions

Waste at the Proposed Development's site area is currently associated with agricultural practice. Potential waste streams currently could include left over crop and straw bales, fertiliser sacks and chemical containers.

Assessment of potential for likely significant effects

The nature of the Proposed Development and the known construction processes indicate no significant quantities of waste are anticipated. The generation of construction-related waste can be significantly reduced through the choice of materials and other opportunities pre-construction phase will be explored as far as possible. Possibilities to reuse or recycle materials will be explored before resorting to landfill options.

During the operational phase of the Proposed Development waste arising is expected to be substantially less than during the construction phase and would include: welfare facility waste; equipment needing replacing; waste metals; and general waste (paper, cardboard, wood, etc.).

During decommissioning, waste streams are expected to include, but not be limited to, solar infrastructure, batteries, cables, welfare facility waste, waste metals, and waste water. Prior to decommissioning, opportunities to minimise waste as far as possible will be explored. There is a new industry emerging for recycling solar panels and it is expected that this industry will be mature by 2067. This would be explored, in addition to any resale of any operational panels

Mitigation and Enhancement

An Construction Environmental Management Plan (CEMP) will be in place for the construction and decommissioning phases. These will include measures to control and manage waste on-site. These will be secured through a DCO Requirement.

Waste arisings will be prevented and designed out where possible. Opportunities to re-use material resources will be sought where practicable. Where re-use and prevention are not possible, waste arisings will be managed in line with the Waste Hierarchy.

Conclusion

The Proposed Development is not expected to create a significant amount of waste during construction, operation, and decommissioning. Therefore, the effects on waste are considered not significant.

18.3 Electric, Magnetic and Electromagnetic Fields

This section sets out the approach to the potential of electric, magnetic and electromagnetic fields (EMFs) produced by the Proposed Development. EMF is produced both naturally and as a result of certain human activities. EMFs are inevitable wherever electricity is produced, distributed, and used, including electrical substations, power lines and electric cables and around domestic, office or industrial equipment that uses electricity.

Electric fields are produced by voltage. Magnetic fields are produced by the flow of electric current; however, most materials do not readily block magnetic fields. The intensity of both electric fields and magnetic fields diminishes with increasing distance from the source.

Baseline Conditions

The underground 400 kV cable system will be located predominately on private land that is not publicly accessible (although crossing roads and railway underground). However, the public and occupational exposure reference levels have been used in this assessment to ensure that there are no adverse effects on the closest publicly accessible areas and residential areas.

Assessment of potential for likely significant effects

Policy guidance on EMFs states that '**overhead power lines at voltages up to and including 132 kV, underground cables at voltages up to and including 132 kV and substations at and beyond the publicly accessible perimeter**' are not capable of exceeding the ICNIRP exposure guidelines and therefore no assessment is required for these and other types of infrastructure listed on the Energy Networks Association website. National Grid guidance states that, "**Underground cables, whether directly buried or in a tunnel, produce no external electric field.**" Therefore, electric fields are not considered further in this assessment. Magnetic fields for the underground 400kV cabling system are considered.

Effects during the construction and decommissioning phases of the Proposed Development are scoped out of the assessment as the cables will not produce any significant EMFs until the Proposed Development is generating electricity when it is operational.

An underground high voltage 400 kV cable system, buried underground, will be installed to

connect the Proposed Development substation with the existing National Grid Bicker Fen Substation. The highest EMFs produced by underground cables are located directly above the buried cables, and field strength decreases with distance from the source. It has been assessed that even directly above the cable under maximum load, neither the occupational nor public limits will be breached.

Mitigation and Enhancement

The final route alignment and design of the electrical infrastructure will consider the measures required to ensure compliance with the Electricity Safety, Quality and Continuity Regulations 2002 (as amended), and any new advice that may emerge from the Department of Health relating to Government policy for EMF exposure guidelines.

It has been shown that the relevant electrical infrastructure will comply with the current public exposure guidelines, and so no further mitigation is necessary.

Conclusion

The Proposed Development is not expected to create a significant effect on EMFs during construction, operation, and decommissioning. Therefore, the effects on EMFs are considered not significant.

18.4 Telecommunications, Television Reception and Utilities

This section evaluates the effects of the Proposed Development on telecommunication infrastructure, television reception and existing utilities.

Baseline Conditions

There are understood to be no buried telecommunication infrastructure beneath the Energy Park.

The area within and surrounding the Proposed

Development is predominantly served by the Belmont transmitter (Lincolnshire), which is located approximately 37km north-east of the Proposed Development.

On-site utilities could include water, sewers, a high-pressure gas pipeline and electrical cables. Knowledge of the utilities during design and construction allows any effects to be negated by avoiding them or by use of suitable structures, such as pipe bridges. Consultation is being undertaken with a number of organisations to identify the existing utilities infrastructure within the DCO Site.

Assessment of potential for likely significant effects

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

The potential exists for utilities to be affected during the construction and decommissioning of the Development through damage caused as a result of excavation and engineering operations. Risk of damage can be mitigated with precautionary measures.

The underground cabling to the National Grid Bicker Fen Substation will remain in situ with no decommissioning works needed.

Mitigation and Enhancement

The risk of damage to utilities during construction would be minimised through embedded mitigation, which would involve the following measures and mapping infrastructure that crosses the Proposed Development and avoiding it through the design:

- the use of ground penetrating radar before excavation to identify any unknown utilities; and
- consultation and agreement of construction / demobilisation methods prior to works commencing. Protective Provisions will also be in place for those affected statutory undertakers and included within the DCO application.

No further mitigation would be required.

Conclusion

The Proposed Development is not expected to create a significant effect on Telecommunications, Television Reception and Utilities during construction, operation, and decommissioning. Therefore, the effects on Telecommunications, Television Reception and Utilities are considered not significant.



SUMMARY

The aim of this PEIR has been to assess the interim findings of the Environmental Impact Assessment and identify the 'likely significant effects' of the Proposed Development. Detailed assessments with respect to pertinent environmental topics have therefore been undertaken in accordance with definitive standards and legislation where available.

The design of the Proposed Development has taken account of the likely significant environmental effects and a number of mitigation measures have been identified to mitigate and control environmental effects during construction, operation (including maintenance) and decommissioning of the Proposed Development to ensure that the environment is suitably protected. It is proposed that these will be secured through appropriate requirements and other controls within the DCO for the Scheme, should this be granted.

Feedback from the formal consultation process will be taken into account when preparing the DCO application and in undertaking the EIA process. The PEIR will be revised and further developed to prepare an ES that will accompany the DCO application. The ES will present the final findings and conclusions associated with the EIA process, based on the worst-case proposed layout and design.





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