



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

Infrastructure
(Environmental Impact
Assessment)
Regulations 2017

North Lincolnshire Green Energy Park

Volume 6
Environmental Statement
6.2.1 Introduction

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CONTENTS

1. INTRODUCTION	1
2. THE APPLICANT AND ITS DEVELOPMENT TEAM	2
3. EIA DEVELOPMENT	3
4. PRELIMINARY ENVIRONMENTAL INFORMATION	4
5. THE ENVIRONMENTAL STATEMENT	5
6. THE PROJECT	7
6.2 Changes to the Project since Scoping.....	8
7. CHANGES TO THE PROJECT SINCE PEIR.....	9
8. STRUCTURE OF THE ES.....	10

APPENDIX A FIGURES

List of Tables

Table 1: EIA Project Team	5
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List of Figures

Figure 1: Project location.....	13
Figure 2: Application Boundary	14
Figure 3: Locations of Project Elements.....	15

Acronyms and Abbreviations

Name	Description
AGI	Above Ground Installation
ACC	Air Cooled Condensers
BAT	Best Available Techniques
CBR	California Bearing Ratio tests
CO ₂	Carbon Dioxide
CHP	Combined Heat and Power
CBMP	Concrete Block Manufacturing Plant
dML	deemed Marine Licence
BEIS	Department for Business, Energy and Industrial Strategy
DCLG	Department for Communities and Local Government
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DCO	Development Consent Order
DHPWN	District Heat and Private Wire Network
DHN	District Heat Network

Name	Description
EMFs	Electric and Magnetic Fields
EV	Electric Vehicle
ERF	Energy Recovery Facility
EIA	Environmental Impact Assessment
ES	Environmental Statement
EU	European Union
FGTr	Flue Gas Treatment residue
HRA	Habitats Regulations Assessment
MWh _e	Electrical generation in megawatt-hours (electric)
MWh _{th}	Heat generation in megawatt-hours (thermal)
H ₂	Hydrogen
IBA	Incinerator Bottom Ash
IED	Industrial Emissions Directive
LDF	Local Development Framework
MCAA	Marine and Coastal Access Act
MMO	Marine Management Organisation
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NLGEP	North Lincolnshire Green Energy Park
PV	Photovoltaic
PA	Planning Act
PINS	Planning Inspectorate
PPG	Planning Practice Guidance
PRF	Plastic Recycling Facility
PEIR	Preliminary Environmental Information Report
PWN	Private Wire Network
RDF	Refuse Derived Fuel
RHTF	Residue Handling and Treatment Facility
SoS	Secretary of State
S21	Solar 21
SOCC	Statement of Community Consultation
SuDS	Sustainable Drainage Systems
TCPA	Town and Country Planning Act
UK	United Kingdom
WFD	Waste Framework Directive

1. INTRODUCTION

- 1.1.1.1 This Environmental Statement (ES) has been prepared by ERM on behalf of The Applicant in relation to an application for development consent (the Application) for the construction, operation and maintenance of a proposed Green Energy Park (the Project) at, Flixborough, North Lincolnshire. The Application has been submitted to the Planning Inspectorate, with the decision whether to grant a Development Consent Order (DCO) being made by the Secretary of State for Business, Energy and Industrial Strategy (BEIS) pursuant to the Planning Act 2008 (2008 Act). This ES presents the findings of the Environmental Impact Assessment (EIA) undertaken in connection with the Project.
- 1.1.1.2 The DCO will provide the necessary authorisations and consents for the construction and operation (noting that operation will also require an Environmental Permit) of a combined heat and power (CHP) enabled energy generating development, with an electrical output of 95 megawatts (MW), incorporating carbon capture, utilisation and storage (CCUS), associated District Heat and Private Wire Networks (DHPWN), hydrogen production, ash treatment, and other associated developments (together referred to as the Project). The Energy Park Land is located largely within the boundary of Flixborough Wharf and on agricultural land to the south, which is largely within the ownership or control of the Applicant, but includes areas of third party land. All elements of the Project are within the administrative boundary of North Lincolnshire Council (NLC), within North Lincolnshire.
- 1.1.1.3 Plans showing the location, application boundary and location of Project elements are provided in Figures 1-3, Appendix A of this document.

2. THE APPLICANT AND ITS DEVELOPMENT TEAM

- 2.1.1.1 The Applicant is a Special Purpose Vehicle (SPV) set up by Solar 21 Renewable Energy Limited (S21). S21 is a renewable energy investment company headquartered in Dublin, Ireland with locations in the United Kingdom (UK) and Italy.
- 2.1.1.2 Established in 2010, S21 specialises in the acquisition and management of solar photovoltaic (PV) installations and the development of renewable power assets including biomass, biogas and energy recovery projects in the UK and Europe. S21 has been delivering steady returns to investors since 2011 from its PV assets. To date, S21 has acquired or developed in excess of €240 million in renewable energy assets. Its current pipeline of projects is expected to bring this to €2 billion over the next five years, which includes this Project as part of a series of new energy recovery plants in the UK.
- 2.1.1.3 Preparation of the DCO application is being managed by the Applicant with support from the following consultancy team:
- Ardent Management Ltd – land referencing;
 - SEC Newgate – community engagement services;
 - Fichtner Consulting Engineers Limited – technology engineering services;
 - Aker Carbon Capture – carbon capture engineering services;
 - Environmental Resources Management (ERM) – environmental services;
 - Bowland Ecology – ecological services;
 - Buro Happold – civil engineering services;
 - Dalton Warner Davis (DWD) – DCO support
 - Northern Planners – planning services;
 - LDA Design – master planning services; and
 - Womble Bond Dickinson (UK) LLP – legal services.

3. EIA DEVELOPMENT

- 3.1.1.1 The Project is considered to fall within Schedule 1 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the Infrastructure EIA Regulations 2017). Accordingly, an EIA has been undertaken pursuant to the Infrastructure EIA Regulations 2017. The DCO application is therefore accompanied by an Environmental Statement (ES), prepared in accordance with the Infrastructure EIA Regulations 2017, which set out the requirements for undertaking an EIA and the required information for inclusion in an ES.
- 3.1.1.2 The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 require that a DCO application, where applicable, must be accompanied by an ES and a Scoping Opinion. A Scoping Opinion was obtained from the Planning Inspectorate in December 2020 and is included as Annex 2.

4. PRELIMINARY ENVIRONMENTAL INFORMATION

- 4.1.1.1 Under Regulation 12 of the Infrastructure EIA Regulations 2017, the Applicant is required to set out in its Statement of Community Consultation (SOCC) whether the development, for which an application for a DCO is to be made, is EIA development, together with how it intends to publicise and consult on preliminary environmental information relating to the Project. Regulation 12(2) defines preliminary environmental information as being the information referred to in Regulation 14(2) which has been compiled by the Applicant and is reasonably required for the consultation bodies to develop an informed view of the likely significant effects of the Project (and of any associated development).
- 4.1.1.2 Accordingly a PEIR was prepared to accompany the consultation process. The PEIR provided information and details on the Project, baseline conditions in the area of influence (including data collected to date), assessment methodologies, any identified effects and provisional mitigation. A key purpose of the PEIR was to provide consultees, particularly the public and local communities, with relevant information on the Project to assist them in identifying the key environmental and social issues at a stage where feedback could meaningfully influence the design process and the subsequent EIA and content of the ES.

5. THE ENVIRONMENTAL STATEMENT

- 5.1.1.1 The ES has been prepared taking into consideration the consultation feedback on the PEIR. Relevant parts of the ES contain the specific consultation feedback, provide responses and where necessary direct the reader to where a matter raised in consultation has been addressed in detail.
- 5.1.1.2 Regulation 14 of the Infrastructure EIA Regulations 2017 requires that to ensure completeness and quality of Environmental Statements, the developer must ensure that the ES is prepared by competent experts, and include a statement outlining the relevant expertise or qualifications of such experts.
- 5.1.1.3 Table 1 sets out the specific environmental topics in this ES and by whom they have been addressed, including their qualifications.

Table 1: EIA Project Team

Role	Organisation	Person
EIA Project Director	ERM	ERM Partner – Jon Perry, MSc, BSc (Hons), MIEMA, CEnv
EIA Project Co-ordinator	ERM	Senior Consultant – Russell Buckley, MEnvSci.
Air Quality	ERM	Technical Director – Dr Chris Hazell-Marshall – PhD, BSc (Hons).
Climate Change	ERM	ERM Partner – Simon Aumônier - MSc, BSc (Hons).
Noise	ERM	Technical Director – Michael Fraser – BSc (Hons).
Ground Conditions; Contamination and Hydrogeology	ERM	Senior Consultant – Sonia Devons, MSc, BSc (Hons).
Water Resources and Flood Risk	ERM and Buro Happold	Principal Consultant – Dr Andrew Gregory, PhD, BSc (Hons), and Nilani Venn, MSc, BSc (Hons).
Ecology and Nature Conservation	Bowland Ecology	Ecologist – Sarah Birtley, MBiolSci (Hons), ACIEEM
Landscape and Visual Impact	LUC	Associate Director – Paul Macrae – BSc (Hons).
Archaeology and Cultural Heritage	ERM	Senior Consultant – Jim Mower – MSc, BSc (Hons).
Traffic and Transport	Buro Happold	Natalie Maynard - Associate – HNC Civil Engineering, MCIHT, Nick Gallop – Director (Intermodality) - BSc (Hons), and Jonathan Ogilvie – Associate - MSc, BSc (Hons), CEng, CMarEng, MIMarEST.

Role	Organisation	Person
Economic, Community and Land Use Impacts	ERM	Principal Consultant – Sarah Goodall.
Waste	ERM	Senior Consultant – Sinead McCabe – BSc (Hons).
Health	ERM	Technical Director – Dr Bronwyn Purvis – PhD, MPhil, LLB (Hons).
Major Accidents and Disasters	Engineering Safety Consultants Ltd (An ERM Group Company)	Associate Director – Paulo Oliveira – MSc, BSc (Hons).

6. THE PROJECT

- 6.1.1.1 The Project is a Nationally Significant Infrastructure Project (NSIP) with an Energy Recovery Facility (ERF) capable of converting up to 760,000 tonnes of non-recyclable waste into 95 MW of electricity at its heart and a carbon capture, utilisation and storage (CCUS) facility which will treat the excess gasses released from the ERF to remove and store carbon dioxide (CO₂) prior to emission into the atmosphere.
- 6.1.1.2 The NSIP incorporates a switchyard, to ensure that the power created can be exported to the National Grid or to local businesses, and a water treatment facility, to take water from the mains supply or recycled process water and condensate to remove impurities and make it suitable for use in the boilers, the CCUS facility, concrete block manufacture, hydrogen production and the maintenance of the water levels in the wetland area.
- 6.1.1.3 The Project will include the following Associated Development to support the operation of the NSIP:
- a bottom ash and flue gas residue handling and treatment facility (RHTF);
 - a concrete block manufacturing facility (CBMF);
 - a plastic recycling facility (PRF);
 - a hydrogen production and storage facility;
 - an electric vehicle (EV) and hydrogen (H₂) refuelling station;
 - battery storage;
 - a hydrogen and natural gas above ground installations (AGI);
 - a new access road and parking;
 - a gatehouse and visitor centre with elevated walkway;
 - railway reinstatement works including, sidings at Dragonby, reinstatement and safety improvements to the 6km private railway spur, and the construction of a new railhead with sidings south of Flixborough Wharf;
 - a northern and southern district heating and private wire network (DHPWN);
 - habitat creation, landscaping and ecological mitigation, including green infrastructure and 65-acre wetland area;
 - new public rights of way and cycle ways including footbridges;
 - Sustainable Drainage Systems (SuDS) and flood defence; and
 - utility constructions and diversions.
- 6.1.1.4 The Project will also include development in connection with the above works such as security gates, fencing, boundary treatment, lighting, hard and soft landscaping, surface and foul water treatment and drainage systems and CCTV.

- 6.1.1.5 The Project also includes temporary facilities required during the course of construction, including site establishment and preparation works, temporary construction laydown areas, contractor facilities, materials and plant storage, generators, concrete batching facilities, vehicle and cycle parking facilities, offices, staff welfare facilities, security fencing and gates, external lighting, roadways and haul routes, wheel wash facilities, and signage.
- 6.1.1.6 The overarching aim of the Project is to support the UK's transition to a low carbon economy as outlined in the Sixth Carbon Budget (December 2020), the national Ten Point Plan for a Green Industrial Revolution (November 2020) and the North Lincolnshire prospectus for a Green Future. It will do this by enabling circular resource strategies and low-carbon infrastructure to be deployed as an integral part of the design (for example by reprocessing ash, wastewater and carbon dioxide to manufacture concrete blocks and capturing and utilising waste-heat to supply local homes and businesses with heat via a district heating network).
- 6.1.1.7 Each of the above facilities are presented in Figure 3 in Appendix A and described in detail in Chapter 3.

6.2 Changes to the Project since Scoping

- 6.2.1.1 At the time of publication of the Scoping Report in October 2020, the Project included the extension of the existing wharf at Flixborough Wharf. Since that time, further design and transport studies have been undertaken, which have shown that the necessary vessel movements required to support the construction and operation of the Project can be achieved without the need to extend the Wharf. As such, this element of the Project has been removed from the Application and associated EIA.
- 6.2.1.2 Furthermore, since the publication of the Scoping Report, the need for a separate business park and an educational centre of excellence has been revised and will no longer be included in the Application and EIA.

7. CHANGES TO THE PROJECT SINCE PEIR

7.1.1.1 Several changes to the design of the Project have been made since the submission of the PEIR in June 2021. The changes were made following developments in design work and input from ongoing technical and ecological studies. Mitigation strategies have been incorporated into the Project design in response to the Statutory Consultation process.

7.1.1.2 The main changes to the Project following the PEIR are:

- the inclusion of First Avenue, Flixborough Industrial Estate into the Order Limits to facilitate the construction of underground utilities;
- the inclusion of part of Bellwin Drive, Flixborough Industrial Estate into the Order Limits to provide construction access for the ERF;
- a section of highway land along Ferry Road West has been removed by streamlining the construction of the new roundabout;
- Connesby Quarry has been removed from the Order Limits as a construction laydown compound due to potential archaeological sensitivity in that area;
- an area on the Flixborough Industrial Estate has been removed where proposed flood defences have been replaced by a flood wall and establishing a Flood Evacuation Plan as discussed with the Environment Agency;
- areas to the north and south of the railway line have been consolidated to match the planned screening, biodiversity habitats and public rights of way;
- the areas required for the DHPWN have been consolidated and include construction zones and construction compounds;
- the Northern DHPWN has been shortened to manage the impact of construction noise and traffic disruption; and
- the Northern DHPWN now includes an additional route option to mitigate traffic disruption and noise impacts on residents during construction.

8. STRUCTURE OF THE ES

8.1.1.1 The ES is based on the PEIR and has been structured to allow the reader to understand: the Project; the purpose of this document and the regulatory framework within which it has been prepared; and the environmental information, assessment methodologies and the findings of the EIA. The document is structured as follows:

- A Non-technical Summary provides a summary of the ES and its technical annexes to improve accessibility to a non-specialist readership;
- Chapter 1 (this chapter) comprises an overview of the Project, an introduction to the consenting regime and information about the Applicant;
- Chapter 2 (**Document Reference: 6.2.2**) provides a description of the environmental planning policy background and regulatory framework within which the document has been prepared;
- Chapter 3 (**Document Reference: 6.2.3**) provides a description of the Project and surrounding area, and provides a description of reasonable alternatives which have been considered;
- Chapter 4 (**Document Reference: 6.2.4**) provides a description of the methodology employed in undertaking the EIA for the Project;
- Chapters 5 to 19 provide a description of the findings of the EIA process for each environmental topic scoped, together with cumulative impacts and a summary of mitigation, into the EIA. The topics covered are:
 - Chapter 5 – Air Quality (**Document Reference: 6.2.5**);
 - Chapter 6 – Climate and Greenhouse Gases (**Document Reference: 6.2.6**);
 - Chapter 7 – Noise (**Document Reference: 6.2.7**);
 - Chapter 8 – Ground Conditions, Contamination, and Hydrogeology (**Document Reference: 6.2.8**);
 - Chapter 9 – Water Resources and Flood Risk (**Document Reference: 6.2.9**);
 - Chapter 10 – Ecology and Nature Conservation (**Document Reference: 6.2.10**);
 - Chapter 11 – Landscape and Visual Impact (**Document Reference: 6.2.11**);
 - Chapter 12 – Archaeology and Cultural Heritage (**Document Reference: 6.2.12**);
 - Chapter 13 – Traffic and Transport (**Document Reference: 6.2.13**);
 - Chapter 14 – Economic, Community and Land Use Impacts (**Document Reference: 6.2.14**);

- Chapter 15 – Waste (**Document Reference: 6.2.15**);
- Chapter 16 – Major Accidents and Hazards (**Document Reference: 6.2.16**);
- Chapter 17 – Health (**Document Reference: 6.2.17**);
- Chapter 18 – Cumulative and Indirect Effects Assessment (**Document Reference: 6.2.18**); and
- Chapter 19 – Mitigation (**Document Reference: 6.2.19**).

8.1.1.2 Each of the above topic chapters includes:

- Introduction;
- Policy Context, Legislation, Guidance and Standards;
- Consultation;
- Assessment Parameters;
- Assessment Methodology and Significance Criteria;
- Baseline and Receptors;
- Mitigation;
- Assessment of Likely Effects;
- Conclusions; and
- Figures and supporting appendices as required.

APPENDIX A FIGURES

May 2022



North Lincolnshire Green Energy Park

Title Figure 1
Site Location

Client Information

Client North Lincolnshire Green Energy Park Ltd
PINS Proj No 010116
Date 25/05/2022
Drawn by MTC
Checked by NW
Version P0

Map Information

CRS EPSG 27700
CRS Name British National Grid
Scale 250,007
ArcMap File \\UKSSMBNAF-

INTRODUCTION_ES_SiteLocation_A01

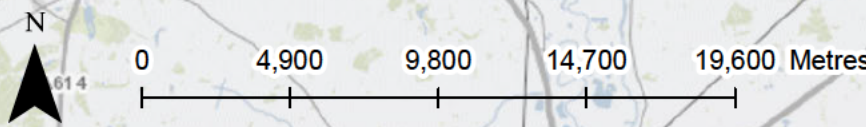
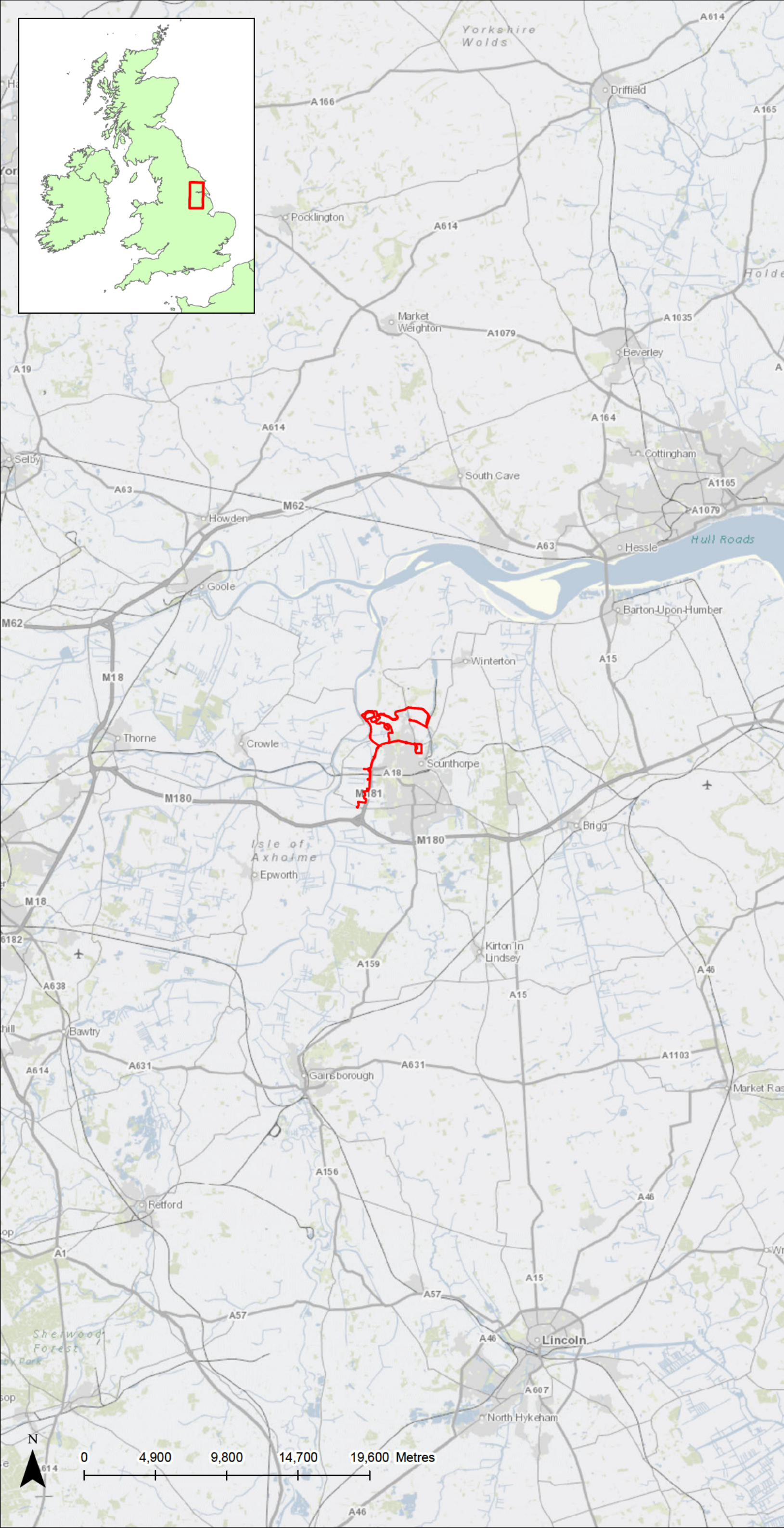
Legend

Order Limits

Layer Source Information

Contains OS data © Crown Copyright and database right 2020

DO NOT SCALE THIS DRAWING



North Lincolnshire Green Energy Park

Title Figure 2
Application Boundary

Client Information

Client North Lincolnshire Green Energy Park Ltd
PINS Proj No EN010116
Date 25/05/2022
Drawn by MTC
Checked by NW
Version P0

Map Information

CRS EPSG 27700
CRS Name British National Grid

Scale 25,001

ArcMap File \\UKSSMBNAF-

INTRODUCTION_ES_SiteBoundary_A01

Legend

Order Limits

*Not all laydown areas are shown on the plan. Where laydown areas would be located within the footprint of the the building to be constructed, they have been omitted from the plan to improve clarity.

Layer Source Information

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

DO NOT SCALE THIS DRAWING



North Lincolnshire Green Energy Park

Title Figure 3
Project Elements

Client Information

Client North Lincolnshire Green Energy Park Ltd
PINS Proj No EN010116
Date 25/05/2022
Drawn by MTC
Checked by NW
Version P0

Map Information

CRS EPSG 27700
CRS Name British National Grid
Scale 25,001
ArcMap File \\UKSSMBNAF-
 INTRODUCTION_ES_ProjectElements_A01

Legend

- Order Limits
- Demolition
- Existing Port
- Areas for Potential Future Mitigation
- Surface Access
- Utilities
- Temporary Construction Haul Road
- Non-motorised Paths with Landscape Planting
- Construction Laydown (Indicative Size / Location)*
- Construction Laydown Limits of Deviation
- Flood Management
- Wetland / SuDs
- Landuse**
- Sub Station
- Carbon capture and associated curtilage landscape
- ERF and associated curtilage landscape
- Visitor Centre
- Concrete manufacturing and plastic recycling facility with associated curtilage landscape
- Gas AGI and associated curtilage landscape
- Energy storage and refueling station and associated curtilage landscape
- Flood Defence Bund
- Railway Reinstated**
- Dragonby Siding Expansion
- Railhead
- Railspur Upgrade

*Not all laydown areas are shown on the plan. Where laydown areas would be located within the footprint of the the building to be constructed, they have been omitted from the plan to improve clarity.

Layer Source Information

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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