OAKLANDS FARM SOLAR PARK

Applicant: Oaklands Farm Solar Ltd

Design Statement
January 2024
Document Ref: EN010122/APP/7.2
Revision: -

Planning Act 2008
Infrastructure Planning (Application: Prescribed Forms and Procedure) Regulations 2009 - 5(2)(q)

Planning Act 2008

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DESIGN STATEMENT

Regulation Reference	Regulation 5(2)(q)
Planning Inspectorate Reference	EN010122
Document Reference	EN010122/APP/7.2
Author	DHA Planning Ltd on behalf of Oaklands Farm Solar Limited

Version	Date	Status
Rev -	January 2024	Application submission version

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1 EXECUTIVE SUMMARY

1.1.1 The Oaklands Farm Solar Park is a proposed solar farm with associated Battery Energy Storage System with a generating capacity of over 50MW ("the Proposed Development") being proposed by Oaklands Farm Solar Limited on land at Oaklands Farm, to the south-east of Walton-on-Trent and to the west of Rosliston in South Derbyshire.

1.1.2 This Design Statement is submitted as part of the application seeking Development Consent for the Proposed Development and reflects PINS Guidance that applicants should be able to demonstrate in their application documents how the design process was followed and how the proposed design evolved.

1.1.3 This Statement summarises the need for new solar generation in the UK; a low carbon infrastructure which is identified by national policy as being a Critical National Priority. The National Policy Statements for Energy make clear the importance of good design being achieved for energy infrastructure, with that theme then equally present through local planning policy and other relevant guidance.

1.1.4 This Statement first summarises the site context and its character, context, planning constraints, transport and access arrangements and the situation in respect of specific matters such as cultural heritage and ecology and biodiversity. From that understanding of the site and its context a number of opportunities and constraints were identified at the outset of the project.

1.1.5 Using those opportunities and constraints as a starting point has allowed the applicant to define a set of ten design guidelines, addressing renewable energy, grid resilience, agricultural land, landscape and visual impacts, ecology and biodiversity, heritage, highways, local amenity, flooding and Public Rights of Way. Those design guidelines have been used to inform and structure the approach to the scheme as the Proposed Development has evolved.

1.1.6 The proposed design is in this case secured by a range of elements within the application; the Works Plans, Design Parameters, Environmental Commitments and Controls and Requirements within the draft Development Consent Order. An Illustrative Layout is provided within the application which demonstrates how the Proposed Development could be laid out, based on those aspects of the application.

1.1.7 This Statement then documents how the design of the Proposed Development has evolved during the preparation of the application, from early conceptual design, through EIA Scoping, the Preliminary Environmental Information Report which accompanied statutory consultation and through subsequent design refinement. As this Statement demonstrates that evolution illustrates how the early design took account of the opportunities and constraints identified at that stage of the

project, before being refined following further assessment of environmental matters and engagement with stakeholders.

1.1.8 This Statement summarises the design as it stands at the point of submission of the application, following that design refinement process, before then discussing the achievement of each of the Design Objectives in turn. The Statement concludes that the iterative approach taken to design refinement, which has been led primarily by the applicant, has resulted in those Design Objectives being achieved.

2 INTRODUCTION

2.1 OVERVIEW

1.1.1 Oaklands Farm Solar Limited ("the Applicant") is applying to the Secretary of State for Energy Security and Net Zero for a Development Consent Order ("DCO") under Section 37 of the Planning Act 2008 ("PA 2008") for the construction, operation, maintenance and decommissioning of ground mounted solar photovoltaic arrays and an associated Battery Energy Storage System ("BESS") on land west of the village of Rosliston and east of Walton-on-Trent in South Derbyshire (the Site). As set out in NPS EN-1 (2024) there is a critical national need to provide nationally significant low carbon infrastructure in order for the UK to make the necessary transition to abundant low carbon energy, as part of its decarbonisation of the power system by 2035 and its 2050 net zero ambition.

1.1.2 The Oaklands Farm Solar Park comprises a proposed solar farm with an associated Battery Energy Storage System ('the Proposed Development'). The Proposed Development would have a generating capacity of over 50MW and would be situated on 191 hectares of land at Oaklands Farm to the south-east of Walton-on-Trent and to the west of Rosliston in south Derbyshire. The solar farm itself, comprising photovoltaic panel arrays, a central electricity substation and Battery Energy Storage System together with access, landscaping and other works would be located on 135 hectares of agricultural land currently in use for arable production and grazing. A high voltage underground electricity cable would then run through land at Fairfield Farm and Park Farm to the north to connect the solar farm to the national grid via an electricity substation located at the former Drakelow Power Station which sits south of Burton-upon-Trent.

2.2 PURPOSE OF THIS DOCUMENT

1.1.3 This document has been prepared as part of that DCO application ("the Application") and should be read in conjunction with the other documents submitted with the Application.

1.1.4 There is no statutory requirement for a DCO application to be accompanied by a Design Statement. However PINS Advice Note 6 makes clear that an application can be accompanied by 'other documents' which include information submitted by the applicant in support of a scheme, with the example list including a Design and Access Statement.

1.1.5 As set out in this Statement, NPS EN-1 and other policy documents make clear the importance of good design for energy infrastructure. Paragraph 4.7.7 of EN-1 states that applicants should be able to demonstrate in their application documents how the design process was followed and how the proposed design

evolved. This Statement provides that rationale, set against the context of the site and its surroundings.

2.3 DOCUMENT STRUCTURE

2.3.1 This document:

- Introduces the Applicant and the project context (Section 2);
- Summarises the need for solar and the Design Objectives (Section 3);
- Summarises relevant planning policy and other guidance (Section 4);
- Describes the location of the Proposed Development, the Order Limits and the site context (Section 5);
- Identifies a series of Design Objectives (Section 6);
- Sets out the mechanism within the application for establishing the Design Framework (Section 7);
- Describes and explains how the Design Framework has evolved during the preparation of the planning application (Section 8);
- Describes the Proposed Development (Section 9);
- Describes the access arrangements to be used for the construction, operation, maintenance and decommissioning of the Proposed Development (Section 10);
- States how the Proposed Development reflects and meets the Design Objectives (Section 11);

2.4 THE APPLICANT

2.4.1 The Applicant is **Oaklands Farm Solar Limited**; a wholly owned subsidiary of BayWa r.e. UK Limited. BayWa r.e. UK Limited is 100% owned by its German parent company BayWa r.e. AG which is a €27.1 billion global business.

2.4.2 BayWa r.e. AG is a leading global renewable energy developer, service provider, distributor and energy solutions provider, based in 31 countries. BayWa r.e. AG has constructed 5.5 GW of renewable energy farms, while managing over 10 GW of assets.

2.4.3 In the UK, BayWa r.e. has an onshore wind development pipeline in excess of 400MW, and a solar pipeline of 1.275GW peak, being delivered from offices in Glasgow and Edinburgh. BayWa r.e. also has an operation services business in the UK, which is based in Milton Keynes and manages 2GW of solar and onshore wind sites across England and Scotland. BayWa r.e is a leading global developer, service supplier, distributor and solutions provider which has brought over 5.5GW of energy online, also managing over 10.5GW of assets. The company is also an Independent Power Producer with an expanding energy trading business.

2.4.4 BayWa r.e. UK Ltd has extensive experience of delivering solar projects in the UK. They have already delivered 23 UK solar projects (totalling approximately 384MW) including Vine Farm (a 46MWp solar park in Cambridge) as well as Bracks Solar Farm (a 30MWp solar park in Cambridgeshire). BayWa r.e. is currently constructing Scurf Dyke Solar Farm in the East Riding of Yorkshire, which will be an 80MWp solar farm co-located with 8MW of battery energy storage system.

3 NEED AND DESIGN OBJECTIVES

3.1 NEED FOR SOLAR GENERATION

3.1.1 The Planning Statement [Document 7.1] summarises the need for solar generation in the UK. NPS EN-1 (2024) which is the overarching National Policy Statement for energy, confirms that there is a Critical National Priority to deliver low carbon infrastructure which includes solar photovoltaic generating stations. The identification of that critical national priority stems from the legal commitment made by the UK through the Climate Change Act 2008 to reduce carbon emissions and the need to urgently decarbonise in order to meet the UK's obligations under the 2015 Paris Agreement. In order to meet its commitments to reach net zero carbon emissions by 2050 the UK will need to achieve fully decarbonised, reliable and low cost power system and it is recognised that wind and solar technologies will play a significant role in that power system. Ultimately the British Energy Security Strategy (2022) states that the current solar capacity of the UK is some 14GW, and the strategy seeks to achieve a five fold increase to a capacity 70GW by 2035.

3.1.2 In April 2022, the UK Government published a policy paper entitled 'British Energy Security' which supports the co-location of solar with energy storage and agriculture. It set targets of up to 70GW of solar to be deployed by 2030 and sees the contribution to the UK Net Zero aims will most likely be composed of wind and solar generation. In May 2023 the UK Solar Taskforce was established, with a membership drawn from government, the energy industry and finance, to drive forward the actions needed by government and industry to meet the solar deployment ambition of 70 gigawatts by 2035.

3.1.3 As discussed within the Planning Statement there is a clear, overriding and urgent need for large scale ground mounted solar generation, which is reflected in the critical national priority for large scale low carbon infrastructure.

3.2 DESIGN TEAM

3.2.1 The Applicant has appointed a wide range of qualified and experienced professionals to advise on the project, with a number of those professionals having a direct input into the design of the Proposed Development. Those professionals have included the Applicant's own expertise in solar farm development, environmental professionals including ecologists, highways and drainage engineers, heritage specialists, battery safety specialists, landscape professionals and planners. The design team has worked collaboratively to understand the constraints and opportunities present at the site and to ensure that the scheme responds appropriately to those and pursues good design principles. That work has been co-ordinated by a key member of the Applicant's project team who has

championed the need for good design and the achievement of the design principles identified within this document. Through the consultation and public engagement undertaken during the preparation of the application the project team have sought the views and inputs from various stakeholders, to ensure that the scheme equally responds to the technical expertise and local knowledge offered by those stakeholders.

4 POLICY CONTEXT

4.1.1 This Section summarises the planning policy context of the application insofar as it relates to design matters. The Planning Statement [Document 7.1] provides a full appraisal of the Proposed Development against the relevant planning policies.

4.2 OVERARCHING NATIONAL POLICY STATEMENT FOR ENERGY (EN-1)

4.2.1 The current version of EN-1 was designated on the 17th January 2024.

4.2.2 Paragraph 3.3.20 of EN-1 confirms that a secure, reliable, affordable, net zero consistent national energy system in 2050 is likely to be composed predominantly of wind and solar. Paragraph 3.3.62 adds that the Government has concluded that there is a Critical National Priority (CNP) for the provision of nationally significant low carbon infrastructure.

4.2.3 Paragraph 3.3.63 identifies that the urgent need for CNP Infrastructure to achieving energy objectives, together with the national security, economic, commercial, and net zero benefits, is a presumption in favour which will in general outweigh any other residual impacts not capable of being addressed by the application of the mitigation hierarchy. EN-1 is clear that Government strongly supports the delivery of CNP Infrastructure and it should be progressed as quickly as possible.

4.2.4 Section 4.7 of EN-1 sets out criteria for Good Design for energy infrastructure. The NPS makes clear the need to achieve sustainable infrastructure which is sensitive to place by demonstrating good design, and includes considerations such as impacts on heritage, efficiency in the use of natural resources (which include land use), the energy used in construction and operation and a good aesthetic. The emerging EN-1 continues to identify good design as a measure through which the adverse impacts of a proposal can be mitigated.

4.2.5 EN-1 requires applicants to demonstrate how the design process was conducted and how the proposed design has evolved. EN-1 defines those matters which the Secretary of State will consider in respect of design, such as landscape character, land form, vegetation and the design and sensitive use of materials. Paragraph 4.7.7 makes clear that applicants must demonstrate in their application documents how the design process was conducted and how the proposed design evolved, in order that a Secretary of State can be satisfied that energy infrastructure projects are sustainable and as attractive, durable and adaptable as they can be. The Secretary of State should also be satisfied that applicants have considered functionality and aesthetics, amenity and visual impacts as far as possible.

4.3 NATIONAL POLICY STATEMENT FOR RENEWABLE ENERGY INFRASTRUCTURE (EN-3)

4.3.1 The current version of EN-3 was also designated on 17th January 2023.

4.3.2 Paragraph 2.4.11 notes that solar photovoltaic sites may be proposed in low lying exposed sites and requires applicants, where that is the case, to demonstrate how plant will be resilient to increased risk of flooding and the impact of higher temperatures.

4.3.3 Section 2.5 of EN-3 continues to reiterate the need to address the criteria for good design which are set out in EN-1, with particular focus on landscape and visual amenity. Section 3.6 deals with flexibility in the project details and requires applicants to identify those elements of the proposal which have not been finalised and why that is the case, together with assessing the likely worst case environmental, social and economic effects of the Proposed Development.

4.3.4 Section 2.10 deals specifically with solar photovoltaic energy generation. Paragraph 2.10.20 refers to the need to design the layout of solar farms with reference to the solar resource available. Paragraph 2.10.29 makes clear that land type should not be a predominating factor in determining the suitability of the site location but that applicants should avoid where possible the use of Best and Most Versatile agricultural land.

4.3.5 EN-3 considers accessibility and notes the need to carefully consider the access routes required for construction, operation and maintenance. Paragraph 2.10.42 establishes the need to design the layout and appearance of solar sites to ensure the continued recreational use of public rights of way during construction and operation, and Paragraph 2.10.44 states that applicants should consider and maximise opportunities to enhance public rights of way.

4.3.6 Paragraph 2.10.59 reiterates the need to consider the requirement for good design which is set out in EN-1. It acknowledges that applications will need to consider several factors when defining the layout and design of sites, with Paragraph 2.10.61 making clear that panel arrays should seek to maximise the power output of the site. Paragraph 2.10.70 states that applicants can set out a range of flexible options, as not all aspects of a project may be known at the outset.

4.3.7 EN-3 goes on to consider individual impacts associated with solar photovoltaic projects, as addressed in the Planning Statement [Document 7.1] and Environmental Statement [Document 6.1].

4.4 NATIONAL POLICY STATEMENT FOR ELECTRICTY NETWORKS INFRASTRUCTURE (EN-5)

4.4.1 The current version of EN-5 was also designated on 17th January 2023.

4.4.2 Section 2.2 deals with factors influencing siting and design. Paragraph 2.2.8 notes at the outset that there will be a degree of flexibility in the location of the development's associated substations, and that applicants should carefully consider their location, as well as their design, with Paragraph 2.2.9 identifying characteristics for consideration such as local topography, the possibility of the screening of the infrastructure and other options to mitigate any impacts.

4.4.3 Paragraph 2.2.10 notes that applicants must take into account Schedule 9 of the Electricity Act 1989, which in the context of this Application, requires proposals for new electricity networks infrastructure to have regard to factors relating to the desirability of preserving natural beauty and conserving natural, geological, geophysical, architectural, historic and archaeological features, together with doing what they can to reasonably mitigate any effect proposals would have on those features.

4.4.4 Section 2.3 deals with climate change adaption and resilience and sets out the importance of ensuring that electricity networks infrastructure is resilient to climate change, including considering factors such as flooding.

4.4.5 Section 2.4 identifies the importance of good design, stating that applicants should consider the criteria for good design within EN-1, but with the Secretary of State bearing in mind that electricity networks infrastructure must in the first instance be safe and secure, and that functional design constraints of safety and security may influence the aesthetic appearance. EN-5 makes clear at Paragraph 2.4.4 that the functional performance of the infrastructure in respect of security of supply and public and operational safety must not thereby be threatened.

4.5 NATIONAL PLANNING POLICY FRAMEWORK

4.5.1 The National Planning Policy Framework sets out planning policies for England, with the current version being adopted in December 2023. The Framework does not contain specific policies for NSIPs, but it is noted within the document that the NPPF may be a relevant matter when determining applications for development consent.

4.5.2 The core principle of the NPPF is the achievement of sustainable development, which includes aspects such as enhancing the natural, built and historic environment and biodiversity, making effective use of land and mitigating and adapting to climate change.

4.5.3 Chapter 12 deals with the need to achieve well designed places, and sees the creation of high quality, beautiful and sustainable buildings and places as being fundamental to the planning and development process. In that respect Paragraph 126 identifies good design as a key aspect of sustainable development.

4.5.4 Paragraph 130 seeks to ensure that developments will function well and add to the quality of an area over their lifetime, are visually attractive, are sympathetic to local character and history, establish a strong sense of place, optimise the potential of a site to accommodate development and create places that are safe, inclusive and accessible.

4.5.5 Paragraph 131 specifically identifies the importance of trees in terms of their ability to help mitigate and adapt to climate change, stating that decisions should ensure that opportunities are taken to incorporate trees into developments and to retain existing trees wherever possible.

4.5.6 Paragraph 132 highlights the importance of considering design quality throughout the evolution and assessment of development proposals, alongside the need for engagement between applicants, the local planning authority and local communities. Paragraph 134 makes clear that development that is not well designed should be refused.

4.5.7 Chapter 14 deals with climate change, flooding and coastal change and provides clear support for renewable and low carbon energy. Paragraph 154 states that new development should be planned to ensure it avoids increasing vulnerability to the impacts arising from climate change.

4.6 LOCAL POLICY

4.6.1 There are no County level policies or guidance which have been identified as being specifically relevant to the design evolution of the Proposed Development within the context of this application.

4.6.2 The Vision, set out within the South Derbyshire Local Plan (Part 1, 2016), seeks to establish a culture of good design for all developments in the district. Policy SD6 of the Local Plan states that the Council will support renewable and other energy developments subject to various considerations which include that the environmental effects of the proposal have been appropriately considered and that proposals will not give rise to unacceptable impacts on local amenity, safety concerns, emissions to the air or ground, odour or traffic generation and congestion.

4.6.3 Policy BNE1 deals with Design Excellence and states that all new development will be expected to be well designed, embrace the principles of sustainable development, encourage healthy lifestyles and enhance people's quality of life. The policy sets out various design principles, including community safety, ease of use, local character and pride, the National Forest, visual attractiveness, neighbouring uses and amenity, healthy lifestyles and resource use.

4.6.4 Large parts of the South Derbyshire Design Guide deal specifically with place creation in respect of housing or publicly accessible schemes. The Guide requires

local landscape character to be appraised and reflected and to take into account the character vision for the National Forest, as well as to create wildlife habitats and to consider specific species.

4.6.5 The Guide encourages new tree planting of appropriate trees as well as the retention of existing trees. In accordance with Policy BNE1 the Guide considers how development can avoid having an undue adverse affect on the privacy and amenity of existing nearby residents or occupiers.

4.7 INDUSTRY GUIDANCE

National Infrastructure Commission: Design Principles for National Infrastructure (2020)

4.7.1 The underlying premise for the 2020 Design Principles document is that infrastructure should be carefully designed, given how projects can potentially shape the landscape for decades, whilst providing good value and working well for climate, people and places. The document encourages applicants to appreciate the wider context of their schemes, engage meaningfully and continually measure and improve. The document identifies four key themes which are summarised below:

- **Climate –** the need to seek opportunities to decarbonise our society, including during design and construction, and with good design incorporating flexibility in order to allow projects to adapt over time and to build resilience against climate change;

- **People –** infrastructure improving the quality of life of those who come into contact with it, providing reliable and inclusive services and accessible, enjoyable and safe spaces. The importance of taking account of the range of views of communities is identified, and the need to reflect those views in the design, whilst also designing for future changes in demographics and population;

- **Places –** supporting the natural and built environment and giving places a strong sense of identity, making a positive contribution to local landscapes, and respecting and enhancing local culture and character. The document notes that good design supports local ecology and that projects should deliver a net biodiversity gain whilst protecting irreplaceable natural assets and habitats; and

- **Value –** seeking the design process to add value by defining issues and providing overall direction, ensuring that opportunities to increase value are explored alongside the creative process, looking beyond the site boundary to consider the wider benefits the project could bring.

Solar Energy UK: 11 Commitments on Solar Farms

4.7.2 Solar Energy UK have defined 11 commitments for members of the Solar Energy UK group, which for ease are set out below and set out aspirations that have been taken into consideration in the design of the project:

(1) We will develop on non-agricultural land or land which is of lower agricultural quality where this is available.

(2) We will enhance the biodiversity and natural capital value of all solar sites, being sensitive and complementing nationally and locally protected landscapes and nature conservation areas.

(3) We will deliver multi-functional land use by proposing co-location with agriculture and/or nature recovery projects for solar and energy storage developments.

(4) We will minimise visual impact where possible, making visual enhancements, and including appropriate screening, such as tree planting and restoring hedgerows, throughout the lifetime of the project. These will be managed through landscape and visual impact assessments.

(5) We will accommodate needs for rights of way and sites of archaeological importance.

(6) At the end of a project's life, we will ensure full decommissioning of the equipment and return the land in a similar or improved state as before.

(7) We will engage with the community in advance of submitting a planning application.

(8) We will support the local economy through local business rates, diversification of farm income and encouraging as many employment and training opportunities locally as possible.

(9) We will act considerately during construction and ensure all health and safety issues are addressed throughout the lifetime of the project.

(10) We will engage and provide detailed information to the local community and listen to their views and suggestions, including the provision of specific community benefit schemes, or use of the site as an educational opportunity, where appropriate.

Building Research Establishment: Planning Guidance for the development of large scale ground mounted solar PV systems

4.7.3 The BRE guidance provides background context and information on large scale solar farms. That includes guidance around specific features of solar farms, including construction compounds, the stripping, storage and replacement of soil, access tracks, security fencing/lighting, tracking and orientation, landscape and visual impact, ecology, historic environment, drainage, glint and glare, community involvement and gain, airport safety, generating capacity and visitor information.

4.7.4 The guidance and examples of good practice it contains have been used to inform the approach taken to the various aspects of the Proposed Development which are discussed within this Statement.

5 LOCATION, ORDER LIMITS AND CONTEXT

5.1 LOCATION AND ORDER LIMITS

5.1.1 The Site lies within the administrative boundaries of South Derbyshire District Council (SDDC) and Derbyshire County Council (DCC) and is located approximately 0.25km west of the village of Rosliston and 0.7km south east of the village of Walton-on-Trent.

5.1.2 The Order Limits cover an area of approximately 191 hectares (ha), comprising two key parcels. The southern parcel, of 135ha, is to the south of Rosliston Road and provides the solar arrays, BESS and substatiuon on land at Oaklands Farm. Coton Road bisects the Solar Park in the southern part of the Order limits.

5.1.3 The northern parcel, of the remaining 56 hectares, lies to the north of Rosliston Road and consists of agricultural land within Fairfield Farm (in the centre of the site) and Park Farm (in the north of the site). This land will host the underground electrical cabling to connect the Proposed Development to National Grid's Drakelow transmission substation, located on the site of the former Drakelow Power Station to the north, together with temporary construction and decommissioning access tracks for construction and decommissioning of the Proposed Development. The cable route in the northern parcel would leave the Proposed Development at Rosliston Road and then run north, crossing Walton Road before entering the former Drakelow Power Station.

5.1.4 Figure 5.1 illustrates the distribution of the different farms referred to in this Statement within the Site.

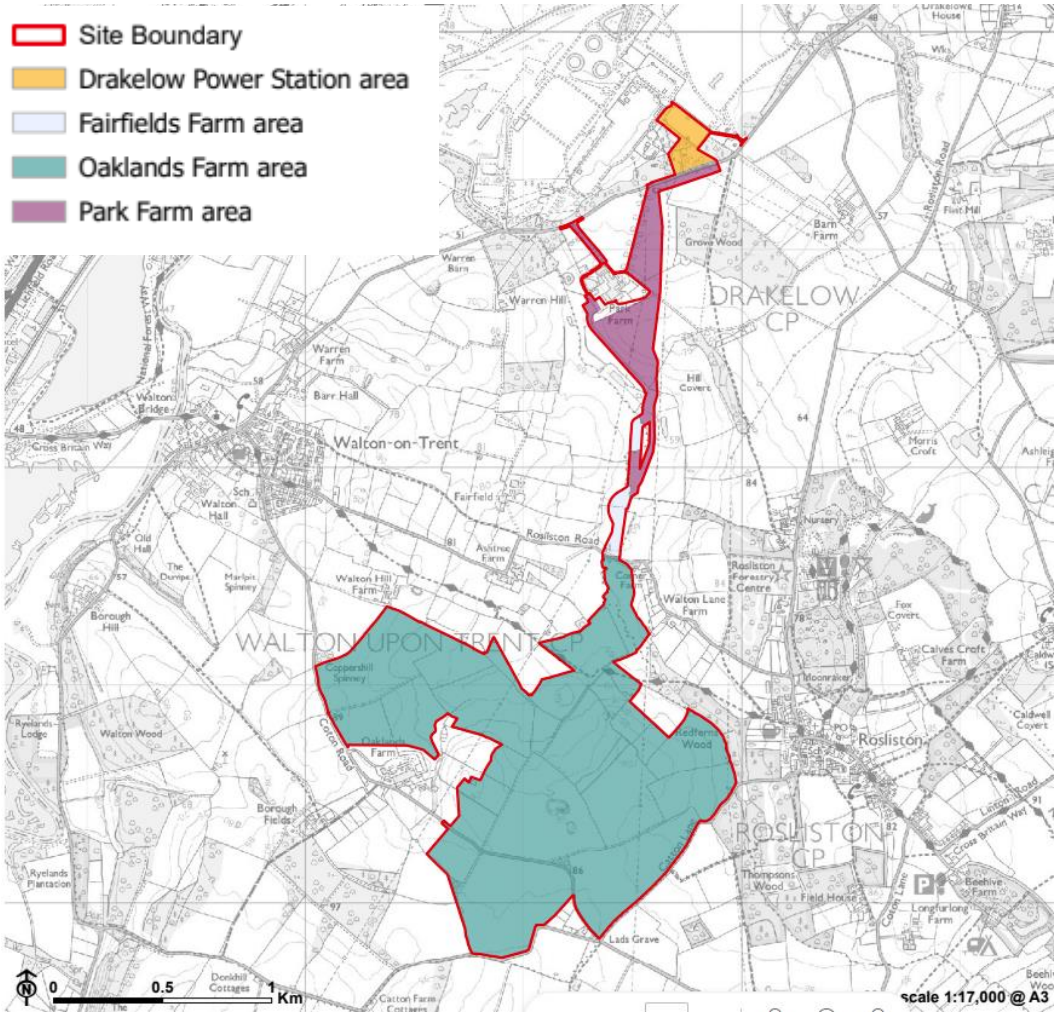


FIGURE 5.1 – SITE LOCATION AND FARM EXTENTS

5.2 SITE CHARACTER

5.2.1 Figure 5.2 provides an aerial view of the Site and its surrounding context, relative to the Order Limits.

5.2.2 The Solar Park itself, in the southern part of the Site, sits in the Oaklands Farm area which primarily lies between Rosliston Road to the north and Coton Road to the south, with two additional fields of panels proposed to the south of Coton Road. That southern part of the site would, in summary, contain the solar panel arrays, the proposed substation and BESS together with associated works including landscaping, access and the creation of a permissive path.

5.2.3 The land at Oaklands Farm primarily comprises medium-large scale mixed arable and pastoral fields, enclosed by low-clipped hawthorn and blackthorn hedgerows with occasional hedgerow and single trees, some small copses and ponds and post and wire fencing. The Oaklands Farm part of the wider Site has a gentle rolling topography with some localised undulations and rises to a maximum elevation of 90m AOD in the centre of the Oaklands area, before falling toward a low point at the Pessall Brook which is in the northeast, at an elevation of 59m AOD.

5.2.4 The land to the north of Rosliston Road would provide for the underground cable connection to National Grid's Drakelow transmission substation together with temporary construction and decommissioning tracks. That land, which sits within Fairfield Farm and Park Farm, rises from 59m AOD at the Pessell Brook to a low ridgeline at 84m AOD to the west, before sloping down to the east. The land comprises further medium and large scale arable and pastoral fields, enclosed by low hawthorn and blackthorn hedgerows.

5.2.5 To the north of Walton Road is the Drakelow substation, which was previously the site of the Drakelow coal fired Power Station, which was constructed between 1955 and 1964 and which was at one time the largest generating plant in Britain. The power station gradually closed between 1984 and 2002, with the last buildings demolished in 2006. The Drakelow substation is a large scale transmission substation which remains a major connection hub in the UK's electricity network. Beside the Drakelow substation and to the north of Walton Road is a natural area comprising scrub and trees, with clearings allowing for overhead power lines, with multiple overhead transmission and distribution lines running through the site.

5.2.6 Several areas of woodland are located close to (but outside) the Site boundary including Redferns Wood and Grove Wood to the east of the Site and a small band of mixed woodland along the edges of Walton Road.

FIGURE 5.2 – AERIAL VIEW OF THE SITE

5.3 CONTEXT AND SURROUNDINGS

5.3.1 The Site sits between the villages of Walton-on-Trent to the west, Rosliston to the east and Coton-in-the-Elms to the south-east, with the larger town of Burton upon Trent to the north.

5.3.2 The site lies entirely within the Mease/Sence Lowlands National Character Area, which is defined in summary as being a gently rolling landscape with rounded clay ridges and shallow valleys, being also a well ordered agricultural landscape of open views with a relatively tranquil character. Woodland cover is generally limited to scattered hedgerow trees, coverts and spinneys and occasional groups

of trees along rivers and streams, albeit the assessment notes that larger scale planting associated with the National Forest in the north of the character area has significantly increased woodland cover in that part. The majority of the farmland is identified as having a strong rectilinear pattern of low hedgerows and scattered hedgerow trees, with extensive open areas of arable cultivation, but with neutral grasslands, wet meadows, parkland, wet woodlands, rivers and streams also present.

5.3.3 The Site is located within the National Forest, which aims to significantly increase woodland and forest planting across 200sq miles of the Midlands.

5.3.4 The Site contains no statutory planning designations. The nearest AONB is Cannock Chase which is over 16km to the south west. The nearest National Park is the Peak District over 32km to the north.

5.3.5 The National Memorial Arboretum is located just outside Alrewas, approximately 4.4km to the south east of the Site.

5.3.6 There are a number of scattered residential properties within the vicinity of the Site, outside of the villages of Walton-on-Trent and Rosliston, including Walton Hill Farm and Ashtree Farm to the north-west, Oaklands Farm, No. 1 Oaklands Farm, No. 3 Oaklands Farm, No. 4 Oaklands Farm, Twin Oaks, Pennywort Cottage, Orchard Cottage and Boroughfields Farm Cottage all to the south-west, Ladsgrave Cottage to the south and Corner Farm, New Corner Farm and the Old Byre to the north-east. At Park Farm, close to the existing farm track, which would be used as a temporary construction and decommissioning access, are further residential properties including Grove Lodge and Spring Cottage.

5.4 TRANSPORT AND ACCESS

5.4.1 The M42 is some 10km to the east, before becoming the A42 as it runs north. The A38 between Burton upon Trent in the north and Lichfield in the south is some 3km to the west.

5.4.2 Several adopted roads either border or run through the Site. These include:

- Coton Road, which connects Walton-on-Trent to Coton in the Elms and runs through the southern part of the Site.
- Catton Lane which links Rosliston to Lads Grave and borders the south eastern edge of the Site.
- Rosliston Road, which connects Walton-on-Trent to Rosliston and runs east-west through the Site.

- Walton Road, which connects Walton-on-Trent to the south west with Stapenhill to the north east, runs through the north of the Site along the southern boundary of the Drakelow Power Station area.

5.5 AGRICULTURAL LAND

5.5.1 The land at Oaklands Farm is currently used for a mix of wheat, barley, oats and corn production together with fields grazed by cattle. The land at Fairfield Farm and Park Farm is used for cattle grazing.

5.5.2 As set out in full in Chapter 15 of the ES, on agricultural land [Document 6.1] the Site is a mix of Grade 2, 3A and 3B agricultural land, albeit with limitations of wetness and slope noted for land within the site.

5.6 CULTURAL HERITAGE

5.6.1 There are no designated historic or cultural assets within the Order Limits.

5.6.2 The Derwent Valley Mills is the nearest World Heritage Site and lies 20km to the north. The closest Scheduled Monument is the Borough Walls Iron Age Hillfort which lies 2km to the west.

5.6.3 The Grade II listed Grove Farmhouse lies immediately adjacent to the site within the Park Farm farmstead. There are Grade II listed gate piers and adjoining walls at the entrance to Drakelow Lodge some 100m north west of the site. The Grade II* listed Church of St Mary lies approximately 400m east of the Site in the village of Rosliston.

5.7 ECOLOGY AND BIODIVERSITY

5.7.1 The River Mease is located 4.4km to the south of the Site and is the nearest Site of Special Scientific Interest (SSSI) and Special Area for Conservation (SAC). The Peak District Moors is the nearest Special Protection Area (SPA) and is over 30km to the north. The Midland Meres and Mosses is 20km to the north-west and is the closest Ramsar Site.

5.7.2 The closets Local Nature Reserve (LNR) is Badgers Hollow which lies approximately 3km east of the Site.

5.7.3 The Grove Wood Local Wildlife Site and ancient woodland lies to the east of the northern part of the Site, with the Local Wildlife designation extending into the site itself.

5.7.4 The area of woodland immediately to the north of Walton Road, to the west of the Drakelow substation and partly within the Site is covered by a group Tree Preservation Order.

5.7.5 Ecology surveys have identified bats, reptiles, badgers, otter, breeding birds (including skylarks) and invertebrates as being present on the site.

5.8 HYDROLOGY

5.8.1 An unnamed tributary of the River Trent, which has an associated area of Flood Zone 3 flood plain bisects the Site south of the Park Farm farmstead and Rosliston Forestry Centre. The remainder of the Site is in Flood Zone 1 (low risk of flooding).

5.8.2 The nearest groundwater protection zones lies over 5km south east of the Site.

5.9 RIGHTS OF WAY

5.9.1 As demonstrated by **Appendix A** there are various Public Rights of Way in the vicinity of the Site, albeit the only PRoW which runs within the Order Limits themselves is a small section of the Cross Britain Way / National Forest Way long distance path which crosses the northern part of the Solar Park element of the site as it runs between the villages of Walton Upon Trent and Rosliston.

5.9.2 PRoW SD13/1/1 then connects onto Catton Lane, which is the immediate eastern boundary of the Solar Park element of the Proposed Development.

5.10 EXISTING INFRASTRUCTURE

5.10.1 There are multiple overhead transmission and distribution lines running through the site.

5.10.2 As demonstrated by the Utilities Search Report [Appendix 16.2 of the ES, Document 6.1] the other utilities present within the site and in the immediate vicinity include public water and sewer mains, gas pipes, telecoms, distribution electricity lines and associated infrastructure and National Grid transmission infrastructure.

5.11 MINERALS AND WASTE

5.11.1 There are no known mineral deposits within the Order Limits or the immediate vicinity. The Proposed Development would not give rise to a level of activity which is considered to have the potential to affect the operation of any nearby waste management facilities, with none identified in the immediate vicinity of the site.

5.12 OPPORTUNITIES AND CONSTRAINTS

5.12.1 The key opportunities and constraints have been identified below, based on the understanding of the context of the site as set out in this section of the Statement. In some cases a particular factor has been identified as both an opportunity and constraint.

Opportunities

5.12.2 The site has been identified as offering the following opportunities:

- The conducive topographical and landform characteristics of the Site which creates the ability for the land to be used to accommodate solar panel arrays and a BESS;
- The proximity of the site to the former Drakelow Power Station and the existing Drakelow substation, which are an important hub in the national electricity grid and which have capacity for a feed in connection;
- The arable/pastoral use of the site and the ability that current use provides to create an enhanced level of biodiversity through the Proposed Development;
- The location of the majority of the Site within Environment Agency Flood Zone 1, with part of the northern parcel of the site being in Flood Zones 3;
- The location being rural in character but with existing industrial and infrastructure features present, including the uses in and around Drakelow and the overhead power lines which run through the area and which influence the landscape character;
- The absence of any nationally or locally designated landscapes within the site or the immediate context;
- The lack of internationally and nationally designated ecology sites within the Order Limits (or in close proximity);
- The presence of mature and veteran trees and mature hedges which bring opportunities to reduce the visual impact of the Proposed Development;
- The lack of heritage assets within the Site and the limited number of heritage assets within close proximity to the Site;
- The presence of existing accesses and entrances to the site from the surrounding road network, and the connectivity of the site to the wider strategic road network;

- The presence of Public Rights of Way, given the potential for the scheme to enhance the local network;
- The lack of any land uses within the Site or in the immediate vicinity which would give rise to direct conflict with the proposed use.

Constraints

5.12.3 The following constraints have been identified:

- The presence of Best and Most Versatile Agricultural Land within the Site;
- The presence of residential properties in close proximity to the Site;
- The presence of mature and veteran trees and hedgerows within the site, some of which are close to existing and proposed accesses, including an area of woodland at Drakelow which is protected by a Tree Preservation Order;
- The presence of various protected species within the Site, including a Local Wildlife Site which extends into the Site;
- The presence of a watercourse and associated areas of flood risk along the cable route and proposed construction track area;
- The presence of the Cross Britain Way within the site and the proximity of other PRoWs in the vicinity of the Site;
- The presence of existing electricity transmission infrastructure and the need to provide appropriate easements for working close to that infrastructure;
- The presence in the vicinity of features on the highway network, such as the Chetwynd Bridge, which limit the ability of those routes to be used during construction by large vehicles;
- The presence of existing utilities infrastructure within the site.

6 DESIGN OBJECTIVES

6.1.1 Following the identification of the opportunities and constraints of the site at section 5 above, a series of Design Objectives were then identified from that understanding of the Site and its context and the opportunities and constraints, together with the need for solar generated electricity and grid resilience, as also described in this Statement. Those Design Objectives have acted to guide the iterative design process which has taken place during the preparation of the application.

6.1.2 The broad Design Objectives which have been followed by the Applicant and project team for this Proposed Development have been as follows:

(1) **Renewable Energy -** To use the land available in an efficient way to generate a significant amount of renewable energy to contribute to the UK meeting its national net zero targets and targets for the deployment of solar generation;

(2) **Grid Resilience -** To contribute to the resilience of the energy grid by providing for additional diversification of production and by providing for the storage of energy for when it is most needed.

(3) **Agricultural Land -** To minimise where possible the temporary loss of and impact on Best and Most Versatile Agricultural Land;

(4) **Landscape and Visual Impacts -** To develop the site sensitively to limit the impact of the Proposed Development on the wider landscape and on views from residential properties and users of the surrounding area;

(5) **Ecology and Biodiversity -** To sensitively take account of existing ecological and biodiversity receptors on the site and to deliver a significant level of Biodiversity Net Gain across the site as a result of the Proposed Development;

(6) **Heritage -** To minimise impacts on heritage assets where those are present;

(7) **Highways -** To develop the scheme in a way which avoids adverse impacts on the local and wider highways network in the vicinity of the site, as well as on the users and the residents along that highways network;

(8) **Local Amenity -** To ensure that the construction, operation and decommissioning of the site does not adversely affect local residents and other users of the surrounding area by impacting on their safety or amenity through matters such as noise, and unexpected events;

(9) **Flooding –** to ensure that the construction, operation and decommissioning of the site does not adversely affect the local area by increasing the risk of flooding;

(10) **Public Rights of Way -** To protect and where possible enhance the local Public Rights of Way network.

6.1.3 This Statement demonstrates how the design of the Proposed Development has evolved to meet those design objectives, together with the views and input of local stakeholders and statutory bodies.

7 DESIGN FRAMEWORK

7.1 OVERVIEW AND FLEXIBILITY

7.1.1 The design of the Proposed Development is contained within a number of separate elements of the Application, as set out below. Both Solar and BESS technologies continue to rapidly evolve and the approach taken within the Application to defining Design Parameters and the Rochdale Envelope is therefore important to ensure that the latest technologies available at the point of construction can be used.

The Works Plans

7.1.2 The Works Plans [Document 2.3] show the extent of various individual 'works', which together would combine to form the Proposed Development. The Works Plans would be consented and secured within the DCO as a starting point and framework for the full details of the Proposed Development which would be provided following a DCO being granted.

7.1.3 In summary the individual Works contained within the draft DCO are as follows:

- Work No.1 – a ground mounted solar photovoltaic generating station;
- Work No.2 – a battery energy storage system compound;
- Work No.3 – works in connection with a new 132/33kV Project Substation;
- Work No.4 – works to trench and lay 132 kilovolt electrical cables connecting Work No.3 to Work No.5;
- Work No. 4A - crossing Rosliston Road with electrical cabling;
- Work No. 4B - temporary stopping up of water courses to trench and lay cables, installation of culverts, drainage and other features to cross watercourses;
- Work No. 4C – crossing Walton Road with electrical cabling;
- Work No. 4D – crossing Coton Road with electrical cabling;
- Work No.5 – connection and installation works to the existing transmission network substation, including works to trench and lay 132 kilovolt electrical cables connecting to Work No. 4C;

- Work No. 5A – construction, operational maintenance and decommissioning access for Work No. 5;
- Work No. 5B – access to National Grid operational land for the construction, maintenance and decommissioning of Work No.5;
- Work No. 6 – temporary construction and decommissioning of access tracks and compounds;
- Work No. 7 – general works;
- Work No. 8 – works to facilitate access for all works excluding Work No. 5;
- Work No. 9 – works for areas of habitat management;
- Work No. 10 – works to implement new permissive path through Order limits.

7.1.4 The Works Plans allow for a degree of spatial flexibility within individual works where appropriate. For example, Work No.4 provides for the layout of the cable to connect the Project Substation to the edge of Drakelow. The maximum width of the trench required for the laying of that cable is 3m, but Work No.4 provides for a larger corridor in which to locate that trench, to provide flexibility to address any features identified which need to be avoided. Similar spatial flexibility is provided for the laying of the cable within the Drakelow site, for the provision of construction, operational and decommissioning accesses and for the siting of the panel arrays, the substation and the BESS.

Design Parameters

7.1.5 Chapter 4 of the Environmental Statement [Document 6.1] contains a table which provides, for each individual work, a set of Design Parameters. The Design Parameters are specific to the work in question and set out the framework and key features and dimensions of each work as appropriate.

7.1.6 Those Design Parameters reflect the Rochdale Envelope approach, as discussed in the Environmental Statement, of defining the environmental envelope for the purpose of assessing the environmental impacts of the Proposed Development. The Design Parameters have been defined to provide a realistic situation on which to base the Environmental Impact Assessment, whilst incorporating a reasonable level of flexibility where necessary to allow for technological advances to occur in solar and BESS technologies.

7.1.7 The Design Parameters are also provided within **Appendix B** of this Statement.

Environmental Commitments and Controls

7.1.8 The Application then includes a number of environmental commitments and controls, which alongside the Works Plans and Design Parameters, form the environmental envelope for the purpose of assessing the environmental impacts of the Proposed Development. One example of those additional environmental commitments and controls is the tree retention plan, which identifies trees to be retained and lost across the Order limits, within areas where panel arrays are proposed to be constructed. Whilst the Works Plans and Design Parameters theoretically allow for panel arrays to be constructed across the entire area identified within Work No1, in practice the tree retention plan identifies those locations where panel arrays would not be placed, so as to ensure the retention of particular mature trees.

7.1.9 Documents which provide additional environmental commitments and controls include:

- The Arboricultural Survey Report and Tree Retention Plan [Appendix 6.14 of the ES, Document 6.1];
- Outline Construction and Environmental Management Plan [Appendix 4.3 of the ES, Document 6.1];
- Outline Operational Management Plan [Appendix 4.4 of the ES, Document 6.1];
- Outline Landscape and Ecological Management Plan [Appendix 5.6 of the ES, Document 6.1];
- Outline Decommissioning Management Plan [Appendix 4.5 of the ES, Document 6.1];
- Underground Cabling Method Statement/Crossing Schedule [Appendix 4.8 of the ES, Document 6.1];
- Flood Risk Assessment and Outline Drainage Strategy [Appendix 8.1 of the ES, Document 6.1];
- Outline Battery Storage Safety Management Plan [Appendix 4.6 of the ES, Document 6.1].

Illustrative Design

7.1.10 Chapter 4 of the Environmental Statement [Document 6.1] references and provides an illustrative layout of the Proposed Development, together with the illustrative design of individual features within the Proposed Development. Those illustrative details would not be consented through the DCO, but provide an

indicative example of a scheme which would be formed from the combination of the Works Plans, Design Parameters and Environmental Commitments and Controls.

Requirement 5 of the draft DCO

7.1.11 Requirement 5 of the draft DCO makes provision for full details of the Proposed Development to be provided to the local planning authority for approval prior to the Proposed Development being commenced. The Applicant would need to demonstrate through that submission of the full layout and details that the Proposed Development remains within the environmental envelope established by the Works Plans, Design Parameters and Environmental Commitments and Controls.

Requirements relating to environmental commitments

7.1.12 In addition to Requirement 5 there are then separate requirements which provide for the submission, approval and implementation of the environmental commitments and controls identified within this Statement. Those include:

- 6. Implementation and maintenance of landscaping
- 7. Arboricultural method statement (AMS)
- 8. Landscape and ecological management plan (LEMP)
- 9. Construction environmental management plans (CEMP)
- 10. Construction traffic management plan (CTMP)
- 11. Operational environmental management plan (OEMP)
- 12. Battery safety management plan (BSMP)
- 15. Operational noise
- 16. Fencing and other means of enclosure
- 17. Surface and foul water drainage
- 18. Archaeology
- 19. Permissive path

8 DESIGN EVOLUTION

8.1 CONTEXT

8.1.1 Paragraph 4.7.5 of EN-1 (2024) states that design principles should be established form the outset of a project and that applicants should consider how their design principles can be applied post consent, and that applicants must demonstrate how the design process was conducted and how the proposed design evolved.

8.1.2 The Proposed Development has undergone various stages of iteration, which are detailed in this Section.

8.2 SITE IDENTIFICATION

8.2.1 Chapter 3 of the ES [Document 6.1] describes in full the process which the Applicant followed in selecting the site in question prior to pursuing development consent. As noted within that Chapter there were a number of key considerations on which the site search was based. A fundamental initial consideration was to achieve a suitable proximity to a substation which provided for sufficient capacity to enable the export of power to the National Grid, on the basis that grid connection capacity is seen as being a key constraint in the delivery of large scale solar schemes.

8.2.2 As noted in Chapter 3 the Applicant undertook an assessment both of potentially willing landowners and grid capacity across the UK and used that as a basis for understanding whether landowners in the vicinity of identified grid capacity were interested in pursuing an opportunity for solar development, alongside an initial assessment of specific factors such as those identified below:

- Acceptable irradiance levels;
- Suitable topography and slope gradients within the site;
- Good access from the public highway network;
- The lack of any overriding site specific environmental constraints relating to habitats, species, land designations and protected areas;
- Acceptable levels of flood risk;
- Proximity and number of residential properties and businesses;
- Acceptable physical constraints such as existing infrastructure;

- Appropriate planning context, in respect of designations and policies.

8.2.3 In that respect the Oaklands site was identified as being in an area with grid capacity, where there was a willing landowner and where an initial assessment indicated that there was a suitable amount of land available with a lack of any fundamental environmental or planning constraints. Chapter 3 of the Environmental Statement documents in detail the additional early feasibility work which was then carried out, alongside work to secure grid capacity. At that early stage it was also determined that there was an opportunity to include a BESS within the Proposed Development, in order to deliver the benefits for grid resilience and capacity which BESS are identified as providing.

8.3 SCHEME EVOLUTION

8.3.1 Having identified a site the Applicant instructed the project team to undertake an assessment of opportunities and constraints, with that work summarised in this Statement.

Original Layout – February 2021

8.3.2 Following the site identification an early conceptual scheme **[Appendix C]** was drawn up in February 2021. The Proposed Development at that stage included two separate areas of panel arrays, one at Oaklands Farm and one at Park Farm. The connection from both solar arrays was as now proposed, to the Drakelow substation to the north. The February 2021 scheme would have had a generating capacity of around 195MW in addition to a 37.5MW BESS, albeit the location and extent of the BESS and Project Substation were not defined at that stage.

8.3.3 The early design layout introduced a number of broad initial design concepts:

(1) Siting panels on fields within the site of up to 15 degrees gradient, orientated as close to south as possible;

(2) Providing 2.5m spacing between panel rows, to allow for maintenance;

(3) Maintaining a 5m buffer from existing hedgerows, to allow for the retention of those existing hedgerows;

(4) Providing a 40m buffer around existing overhead lines (20m either side of centreline);

(5) Avoiding large known trees, woodland copses, water bodies and watercourses;

(6) Providing for a minimum 8m easement between the top of any watercourse bank and any infrastructure, to reflect standard Environment Agency guidance.

Scoping request – August 2021

8.3.4 A further illustrative layout was then submitted to PINS in February 2021 as part of the EIA Scoping Request [**Appendix D**].

8.3.5 That layout retained the key concepts and parameters on which the original February 2021 scheme was designed, with solar panel arrays continuing at that stage to be proposed both at Oaklands Farm and Park Farm. The generating capacity at that time was expected to be circa 163MW of solar photovoltaic generating capacity and 37.5MW of BESS capacity.

8.3.6 The Scoping Request layout incorporated the findings of further environmental surveys and assessments in order to refine that design where appropriate. Those included the provision of 100m buffers between solar panel arrays and residential properties, using the mapping of a Zone of Theoretical Visibility, to ensure that any prospect of negative impacts on the visual amenity of the residents of those properties were being minimised. The illustrative layout demonstrated how the scheme would have regard to existing infrastructure, whilst seeking to maximise the generating capacity of the land available, and whilst also providing some areas for new soft landscaping. The result of that work was a reduction in the extent of some panel arrays, resulting in the reduction in the expected generating capacity from circa 200MW in February 2021 to some 163MW in the Scoping layout in August 2021.

Preliminary Environmental information report – April 2022

8.3.7 The scheme presented for public consultation in April and May 2022 [**Appendix E**] illustrated a more developed layout and design than that submitted for EIA Scoping, with those refinements to the scheme resulting from further technical assessments of the proposal site. The scheme at that time continued to include solar panel arrays at Oaklands Farm and Park Farm and continued to propose an anticipated generating capacity of 163MW. The proposed BESS was shown in the centre of the Oaklands Farm area, in the location proposed now within the application. The Project Substation was shown as being located in the northern part of the Oaklands Farm site area, with an overhead cable running north to the Park Farm solar array, and from that point running underground to connect into the Drakelow substation.

8.3.8 The illustrative PEIR layout includes a number of changes from the illustrative Scoping Layout. The panel arrays at Parcel 21 and on the western edge of the Park Farm array were removed, with the removal of the panels at Parcel 21 ensuring greater separation from the Cross Britain Way. The extent of the panel

arrays at Parcels 3, 4, 5, 13, 14, 18 were reduced to take account of buffers and existing features. The extent of the arrays at Parcel 12 was reduced to accommodate the BESS and the extent of the arrays at Parcels 22 and 23 were reduced to accommodate the Project Substation.

8.3.9 The additional design principles employed across the site at the PEIR stage included a distance of at least 100m being provided between residential properties and other solar plant, such as string inverters, as well as internal access tracks following the undertaking of further noise modelling work. 10m buffers were then provided around trees with bat roost potential and 30m buffers around identified badger setts.

8.3.10 As documented in the PEIR, the potential to locate the substation and BESS at the Park Farm array was considered but in both cases was discounted due to the need for additional cabling, the installation of additional substations to make that arrangement work and the potential for increased environmental impacts to occur as a result.

8.3.11 The substation was proposed at the PEIR stage to be located in the northern part of the Oaklands Farm array, in order to minimise cabling installations and construction costs, as that location placed the substation in the closest part of the Oaklands Farm area to the eventual point of connection with the Drakelow substation. The location of the substation at the PEIR stage also reflected an assessment of flood risk and the need to identify a suitably flat, unobstructed area which was appropriately screened from nearby properties.

8.3.12 It was seen as preferential in technical terms to locate the BESS beside the proposed substation. However as documented in the PEIR (Paragraph 3.48), that location was assessed as having the potential to create unacceptable noise impacts on the nearest residential properties. As shown within the illustrative scheme presented at the PEIR stage the decision was taken to relocate the BESS, which had more potential to create noise impacts, to the centre of the Oaklands Farm site, with that location also being beneficial from a residential safety perspective. The location of the BESS was chosen based on the need to keep it as close as possible to the proposed substation, whilst utilising a sufficiently flat and unobstructed area of land, to be sufficiently away from any sensitive noise receptors and to have appropriate access for construction.

8.3.13 The PEIR scheme also reflected a review of the proposed access arrangements for the Proposed Development. The main Oaklands Farm access from Coton Road was seen as appropriate due to its distance from nearby residential properties and the road layout and geometry being appropriate. At the PEIR stage the Oaklands Farm and Park Farm areas would have been accessed separately, with Park Farm accessed via Burton Road.

8.3.14 At the PEIR stage the approach to the cabling connection was to construct an overhead line from the Oaklands Farm array into the south-western part of the Park Farm array, from where the cable would be laid underground until reaching

the Drakelow substation. That approach reflected in the main the presence of existing overhead line infrastructure in the area and the approach necessary to address easements and topple distances etc from that infrastructure.

Updated Site Layout – March 2023

8.3.15 The Applicant undertook a non-statutory consultation exercise in March 2023, on the basis of a revised scheme [**Appendix F**] which had been amended to take account of land availability, the outcomes of the statutory consultation in 2022 and the ongoing work to undertake environmental assessments. The key changes made to the illustrative scheme were documented in the Additional Consultation and Project Update document and in the Newsletter issued in March 2023 [See Consultation Report – Document 5.1], including:

- The removal of the Park Farm array from the scheme. The landowner at Park Farm changed their position regarding the project which meant that the land at Park Farm, whilst remaining available for the cable connection, was no longer available for solar generation;
- The relocation of the Project Substation to the centre of the Oaklands Farm, beside the BESS, to ensure a greater distance between the substation and existing residential properties and to reduce landscape and visual impacts;
- Additional clarity regarding the proposed cabling route, together with confirmation that the route would be laid underground for the entire length following statutory consultation feedback, to reduce the landscape and visual impact associated with the Proposed Development;
- Changed approach to the intended construction and decommissioning routes, following the placing of a weight limit of 7.5t on the Chetwynd Bridge by Staffordshire County Council in late 2022;
- The revision of the construction and decommissioning accesses to the scheme, with a new temporary access from Walton Road in the north, across Park Farm and Fairfield Farm and Rosliston Road into the Oaklands Farm site;
- The removal of the HGV access point at Burton Road, which was no longer required due to removal of PV arrays on Park Farm;
- Clarity around the intended route of the permissive right of way, running between the existing Public Right of Way at Catton Lane/Lads Grave in the south east to the Cross Britain Way;
- Clarity over additional planting being proposed across the site to increase ecological benefits and to reduce landscape and visual impacts.

8.3.16 As noted in the list above some amendments to the scheme reflected the landowner position regarding Park Farm. Further changes, such as to the location of the BESS, reflected the ongoing preparation and refinement of the application itself and the technical assessments which inform it.

8.3.17 The result of the proposed changes was a reduction in the overall order limits from 218ha at the PEIR stage to 165ha. Consequently the potential generating capacity of the Proposed Development similarly reduced to some 138MW, alongside the 37.5MW BESS.

Preparation of the application – March 2023 to February 2024

8.3.18 Between March 2023 and submission of the application in February 2024 work continued to discuss the Proposed Development with statutory bodies and local authorities, to review any responses to the March 2023 informal consultation, to undertake environmental assessments and to prepare Works Plans for the purpose of the application, which reflected the evolving illustrative scheme prepared for the project. Due to changes made to the proposed illustrative scheme a further update, based on a conceptual layout plan and amended access point plan, was provided in October 2023 [**Appendix G**] to stakeholders in the vicinity of the northern part of the site, around the Drakelow substation.

8.3.19 The changes made to the Proposed Development during the final preparation of the application included:

- The refinement of the Order Limits north of Rosliston Road to remove land not necessary for the cable and construction/decommissioning access corridors (as shown in Figure 8.1 below);
- The refinement of the cable route within Drakelow, to the north of Walton Road;
- The refinement of the land within the Order Limits at Drakelow, to remove any land not necessary to construct, maintain and decommission the cable and point of connection into the substation;
- The addition of a permanent access junction north off Walton Road to provide construction and operational access for the laying and maintenance of the underground cabling into the Drakelow substation
- The proposal of a new 'in only' access from Walton Road at Park Farm to offer a one-way system for HGV ingress/egress for construction, and consequent adjustments to the intended construction and decommissioning access routes in that area;

- Access design refinements and production of detailed plans showing extent of works for all new and existing junctions, tracks and visibility splays required to deliver construction and operational access

- Design refinements along Coton Road to the boundary treatment proposed to ensure any potential for glint and glare had been fully addressed;

- The relocation of the southern construction compound to a location immediately to the south of Coton Road;

- Extending the permissive right of way to also include access to PROW SD13/1/1 in the eastern part of the site, following discussions with Derbyshire County Council.

8.3.20 The refinements to the scheme at this stage involved reviewing the individual Works set out within the draft DCO, using the technical assessments undertaken to inform the application to allow for a greater degree of refinement.

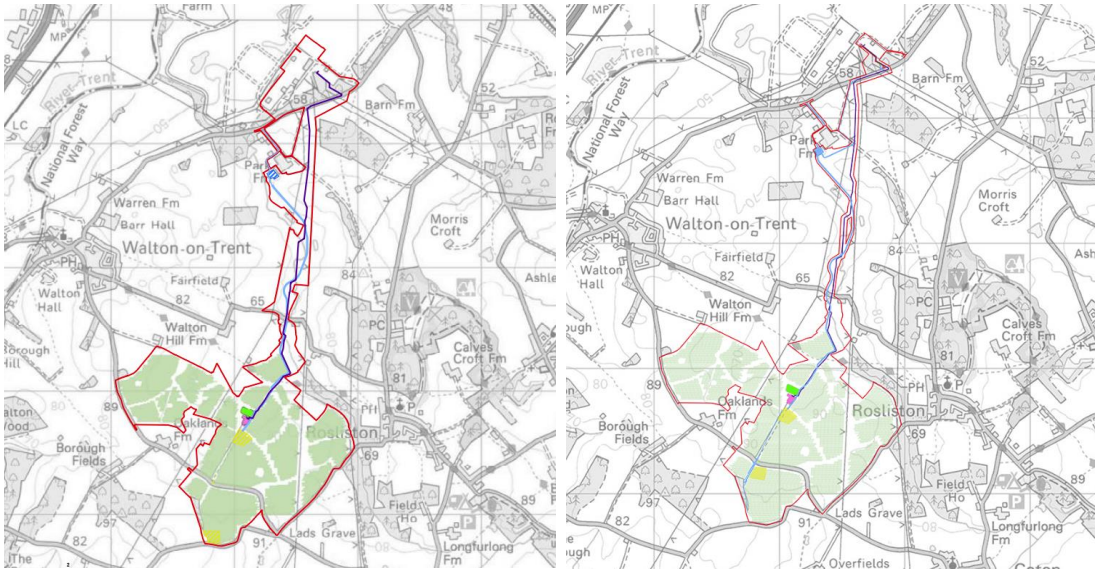


FIGURE 8.1 – REFINEMENT OF ORDER LIMITS BETWEEN MARCH 2023 AND OCTOBER 2023

8.3.21 The decision was taken to introduce a number of specific Works to deal with particular elements of the Proposed Development, particularly in the area around Drakelow, in order to allow for more precise Order Limits to be defined and avoiding the need for wider areas to be included in the Order Limits as had previously been the case.

8.4 SUMMARY OF DESIGN EVOLUTION

8.4.1 As demonstrated by this Section and by the accompanying appendices there has been a continued evolution of the design of the Proposed Development throughout the preparation of the application.

8.4.2 The use of an illustrative concept layout for the Site has been an important tool to ensure that appropriate features are being taken account of. The Works Plans are a coarser representation of the illustrative layout, in order to provide for the required flexibility, but with the illustrative layout providing certainty and comfort that the Works set out within the dDCO and the design parameters within the ES provide an appropriate framework through which to deliver the Proposed Development.

8.4.3 As this section demonstrates the illustrative design incorporated from the outset a number of specific design considerations which reflect the design objectives identified within this document. The Proposed Development was then refined to take account of the various environmental assessments being undertaken to support the Application and the input of consultees and stakeholders, with the continued intention of achieving the design objectives. As the preparation of the Application has progressed the Works Plans and design parameters which have emerged from the illustrative layout have then also been refined in the lead up to submission.

9 PROPOSED DEVELOPMENT

9.1.1 This Section describes the Proposed Development with particular reference to the Works Plans, Design Parameters and, where relevant, the illustrative details provided within the Application.

9.2 SOLAR PV INFRASTRUCTURE

9.2.1 Chapter 4 of the Environmental Statement [Document 6.1] describes the technology which would be employed by the solar photovoltaic panels in order to use light to produce electricity. In this case the solar photovoltaic panels would be formed into a series of arrays which comprise panels fixed to ground mounted structures, arranged in parallel south facing lines. The electricity created is transferred from the panels to string inverters; small installations strategically placed within the arrays which convert the electricity from direct current (DC) to alternating current (AC) for export to the grid, before being transferred via transformer stations set close to the solar arrays onto the central Project Substation.

9.2.2 The solar arrays proposed for the Proposed Development would have a maximum height of 2.7m above ground level, with a minimum height of 0.8m above ground level, providing flexibility for different panel sizes or technologies to be employed. The panels would be fixed in position and installed at an angle of between 15 and 22 degrees. The mounting structures would be installed using driven steel piles, set some 2m into the ground, apart from at one location on the site where concrete foundations may need to be used due to the presence underground of a local water main.

9.2.3 The solar photovoltaic panels would have glass which is coloured dark blue or black, to maximise efficiency. The frame of the panels and the mounting structures would be bare metal (either aluminium or stainless steel) in colour.

9.2.4 The full potential extent of the solar arrays is defined by Work No.1 on the Works Plans [Document 2.3]. However as demonstrated in the application by aspects such as the tree retention plan, and as then shown on the illustrative layout plan [Document 6.1 - Environmental Statement – Figure 4.1], in reality the location, layout and extent of the solar arrays would directly reflect existing field boundaries and the presence of existing mature trees.

FIGURE 9.1 – EXAMPLE OF SOLAR ARRAYS

9.3 BESS

9.3.1 At an early stage of design work the Applicant received confirmation that there was an opportunity to maximise the site capacity and performance through the inclusion of a large scale Battery Energy Storage System (BESS) within the scheme. It is acknowledged generally that BESS have an important role to play in the function of the national grid, by effectively managing supply and demand across the grid, something which is becoming increasingly important with the presence of variable renewable generation technologies across the UK.

9.3.2 The proposed BESS would perform two roles. In the first instance it would be designed to store electricity generated by the solar arrays in order to discharge that to the grid when market and grid conditions are most favourable. The proposed BESS would provide an ancillary service in being able to import electricity from the grid and storing it until it is most required.

9.3.3 As demonstrated through the Design Parameters the BESS comprises a fenced compound of up to 0.8ha containing a series of batteries within containers and ancillary equipment including power conversion system units, an auxiliary transformer and monitoring systems. There would be a maximum of 78 containers, each of which would fit within standard dimensions of 9.43m by 1.73m in footprint with a height of up to 2.52m and would be dark green or recessive grey in colour.

9.3.4 The BESS would then include up to 13 power conversion system units which would be containers of a similar design and scale to the battery containers, at a footprint of 6.1m by 2.44m and a height of up to 2.9m. A single BESS auxiliary transformer would be constructed which is larger, at up to 8.5m by 4.9m footprint and up to 3m high.

9.3.5 The illustrative layout (Figure 9.2) shows an example of how the BESS could be arranged. Each battery container would have an internal fire suppression system which would be automatically triggered in the event of a significant temperature increase. The illustrative layout then demonstrates how sufficient spacing can be provided between individual containers in order to prevent a thermal runaway incident from spreading across different battery containers. Provision has also been made within the design parameters for the inclusion of sufficient water supply and water containment as an alternative method of preventing thermal runaway across multiple units, together with containment infrastructure beneath and around the BESS to capture any fire fighting water for testing prior to its discharge or removal from site. The final design, layout and method of thermal runaway prevention would be subject to detailed discussions with the relevant authorities, so for the purposes of the DCO application it has been demonstrated that either approach could be used.

FIGURE 9.2 – INDICATIVE BESS LAYOUT

9.4 PROJECT SUBSTATION

9.4.1 The Project Substation acts as the connection point for the various string inverters and small transformers located throughout the solar arrays and increases the voltage of the Alternating Current electricity from 33 kilovolts to a level, in this case 132 kilovolts, which is suitable to be transferred to the National Grid. The Project Substation would comprise up to 2 large 33/132 kilovolt transformers, situated in an area of up to 0.6ha in the central part of the Site, adjacent to the BESS. The substation would contain various elements including a control building, Static Synchronous Compensator Units, a staff welfare unit, storage units, fire water storage and deluge system, parking and storage areas and associated CCTV systems, fencing and gates. The highest feature would be 132kV harmonic filter compound which would be up to 7m high.

9.4.2 The Project Substation would have specific parts set on impermeable foundations, with the remainder of the compound comprising permeable crushed stone and type 1 hardstanding.

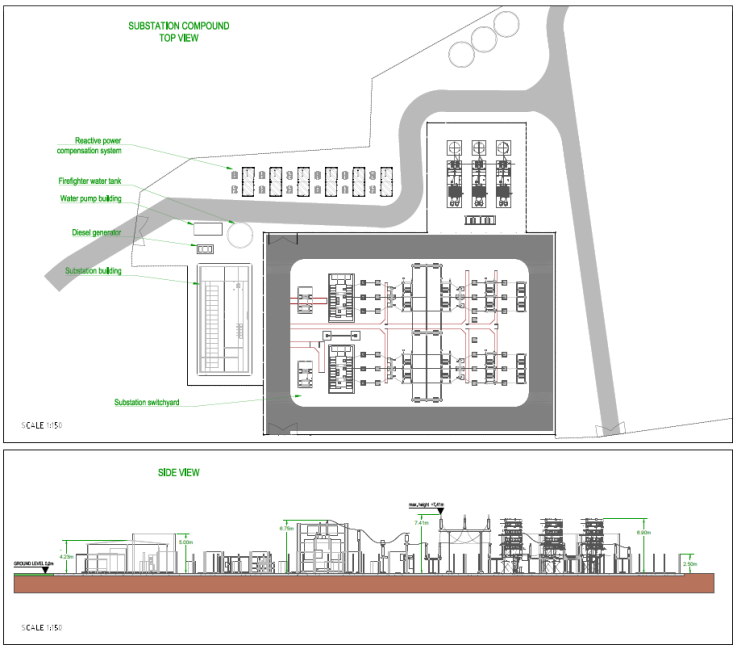


FIGURE 9.3 – EXAMPLE LAYOUT AND CROSS SECTION OF THE PROJECT SUBSTATION

9.5 CABLE ROUTE AND CROSSING POINTS

9.5.1 A 132kV cable would be laid from the Project Substation to the Drakelow substation to the north, to connect the Proposed Development to the national

grid. The cable would be laid entirely underground and would primarily be laid using an open trenching method, with the trench up to 3m deep and wide. Provision has been made for a corridor of 50m to provide flexibility as to the final routing of the cable and to allow for the works associated with the installation of the cable to take place within that corridor.

9.5.2 From the point at which the cable leaves the Project Substation it would head north through Oaklands Farm before reaching Rosliston Road, which would be crossed either using trenching or directional drilling, with a maximum depth of 20m should directional drilling be used. After crossing Rosliston Road the cable would continue to run north through Fairfield Farm and Park Farm before reaching Walton Road. During that section the cable would be required to cross a watercourse at several locations; one to the south of Rosliston Road, one at Rosliston Road itself and three just to the north of Rosliston Road, with provision made within Work No4B to stop up watercourses in order to install the cable and permanent or temporary culverts as necessary. If watercourses are crossed with trenching then the cable would be laid at 1.7m below the watercourse, or the cable would run through culvert structures if culverting was used.

9.5.3 At Walton Road the cable would cross into land associated with the Drakelow substation, using either trenching or directional drilling to cross Walton Road. Open trenching would then be used to route the cable through the land adjacent to Drakelow substation before the cable enters the Drakelow substation itself. That route would involve the removal of trees and vegetation as necessary in that area, with the assessment in the ES based on a worst case scenario in terms of the level of tree removals, but with the final route to be defined in order to avoid the loss of any high quality trees or trees with ecological features such as bat roost potential. Work No.5 then makes provision for the general technical works required to connect the cable to the substation itself, including jointing bays, fibre bays, cable ducts and electrical kiosks and cabinets.

9.6 FENCING AND ENCLOSURE

9.6.1 Work No.7 makes provision for various designs of fencing to be used across the Proposed Development, with some 11,000m of perimeter fencing proposed across the development in total. The standard approach would be to use standard deer fencing commonly used at solar farms which is wire mesh attached to 2.1m-high wooden posts which are piled into the ground. Where greater security is required, such as alongside public roads, 2.1m wire mesh fencing attached to steel posts would be used, potentially with a single line of barbed wire.

FIGURE 9.4 – EXAMPLE OF DEER PROOF BOUNDARY FENCING

9.6.2 The BESS and Project Substation would be surrounded by robust steel palisade security fencing of up to 3m high for added security and protection for from high voltage electrical infrastructure.

9.6.3 Other fencing used where appropriate within the development would be 1.5m post and wire agricultural stock fencing.

9.6.4 All access points will be secured with appropriate metal gates and security measures to prevent unauthorised access to the Proposed Development.

9.7 LIGHTING, CCTV AND OTHER ANCILLARY EQUIPMENT

9.7.1 CCTV would be installed at appropriate locations around the Solar Park site with up to 250 cameras proposed, with the CCTV to be mounted on 3.51m poles.

9.7.2 Temporary lighting would be used for construction around the construction compounds, with permanent lighting restricted to security lighting on buildings, storage and welfare units which would be downward facing.

9.7.3 Up to 10 small weather stations would be placed around the Solar Park site.

9.8 LANDSCAPING AND ECOLOGICAL ENHANCEMENTS

9.8.1 Various new habitats would be created across the site, with Work No.9 making provision for specific landscape areas and with Work No.7 providing more

generally for landscaping across the wider solar park site. An Outline Landscape and Ecological Management Plan is included in the application, with a full LEMP to be submitted under Requirement 8. The LEMP makes provision for the creation of new habitats, including woodland and scattered trees, grassland, hedgerow, standing water and running water, and then specifies the measures to manage and enhance that habitat. Overall the Proposed Development is assessed as creating a net gain of 125.07% in habitat units, 20.02% in hedgerow units and 19.82% in river units net gain in biodiversity across the Order Limits.

9.9 PERMISSIVE PATHS

9.9.1 A new permissive path is proposed within the solar array area, which would link PROW SD/13/4/1 to the south of the site through to PROW SD13/1/1 where it meets the eastern boundary of the order limits, and to SD38/6/4 which is the Cross Britain Way, thereby providing a direct footpath connection between those PROWs which does not exist at present. The path would either be a short mown corridor or wooden board walk and would be contained as necessary by fencing and landscaping.

9.10 DRAINAGE INFRASTRUCTURE

9.10.1 Surface water within the solar array areas will be allowed to percolate naturally into the underlying soil.

9.10.2 The BESS compound and Project Substation would include impermeable subbases to contain any fire water runoff. The BESS would be entirely placed on an impermeable subbase, with elements of the Project Substation being contained and with other elements being placed on permeable hardcore bases which would be naturally draining. Water arising from the impermeable areas of the BESS and substation would be contained with bunds and in the event of a fire event would be directed using control valves to be contained within a containment tank/pond.

9.10.3 Where access tracks are being constructed they would use compacted gravel so as to remain permeable, with a crossfall designed towards a drainage trench to contain and allow excess water to naturally infiltrate into the soil.

10 ACCESS ARRANGEMENTS

10.1 WIDER CONNECTIONS

10.1.1 The site sits between the A38 to the west as it runs between Burton-upon-Trent and Lichfield, and the M42/A42 to the east as it runs between Ashby-de-la-Zouch and Tamworth. The A444 connects both roads and runs to the north of the site. A network of roads then sit in the vicinity of the site and bisect the various parcels and farmsteads identified, including Walton Road to the north, Rosliston Road in the centre and Coton Road to the south.

10.2 CONSTRUCTION AND DECOMMISSIONING ACCESSES

10.2.1 During the construction phase the preferred route for construction vehicles accessing the site would be from the north west/west via the not yet constructed Walton Bypass, which would link the site to the A38 to the west and which would allow construction vehicles to enter the site from Walton Road in the north before travelling south through Park Farm and Fairfield Farm to reach the site itself.

10.2.2 However there continues to be doubt regarding the delivery of the Walton Bypass within the timeframe required. A series of backup routes have therefore been identified and assessed. Those comprise a primary Heavy Goods Vehicle (HGV) route entering the site via Walton Road from the north-east, having travelled from the A38 via Burton-on-Trent. Secondary access routes for light goods and small vehicles would be from the south and south-west or via that same primary HGV route. Any abnormal loads would reach the site from the east, from the A42 via Coton-in-the-Elms, which would also function as a secondary HGV route in the event of emergencies like temporary road blockages or closures.

10.2.3 Under that backup scenario the Primary construction and decommissioning access route for HGVs would be used, which involves the creation of a new temporary construction haul road across private agricultural land to avoid HGVs going through the villages of Walton-on-Trent and Rosliston. The new route would be created off Walton Road to the north, where separate entry and exit points are proposed. A circulatory, one-way arrangement would be established around Park Farm, with a new temporary construction haul road then installed across agricultural land to reach the Oaklands Solar site to the south, constructed from compacted stone and gravel, geo membrane or mown grass as appropriate. The haul road will run south to Rosliston Road, where HGVs would cross with appropriate traffic management to enter the main Oaklands Farm site. HGVs will return along this route running north to exit the Oaklands Farm site, ensuring that all HGV movements to and from site will utilise the new temporary haul road to avoid having to go through the villages of Walton-on-Trent and Rosliston, limiting impact on the local road network.

10.2.4 Small construction vehicles would also be able to access the Oaklands Farm site from the east and west via existing farm access points off Coton Road and Catton Lane. Abnormal loads would enter the site from Coton Road in the south, via an improved existing farm access.

10.2.5 A new access would be created to the north of Walton Road into the land adjacent to the Drakelow substation, for the purposes of constructing the cable connection as it crosses Walton Road and continues to link to the point of connection within the Drakelow substation.

10.2.6 During the construction phase the various construction accesses and exits from the site would be managed by a combination of temporary traffic lights or banksmen.

10.2.7 Following the completion of the construction process the temporary construction track north of Rosliston Road would be removed and the ground reinstated.

10.2.8 At the end of the life of the Proposed Development, a similar temporary haul road for HGVs following the same route and parameters as the described construction track, would be installed to facilitate decommissioning.

10.3 OPERATIONAL ACCESSES

10.3.1 During operation the main access to the site would be from Coton Road in the south, via the improved existing farm access. Small operational vehicles would continue to be able to access the site via existing farm accesses off Coton Road to the west and via Catton Lane, but with all vehicles exiting the site at the main entrance/exit on Coton Road. The construction access point and haul road installed to the south of Rosliston Road would be retained during operation but would be gated and only available for access to respond to emergency incidents such as accidents or injury to personnel.

10.3.2 At Drakelow substation the new junction and construction access installed by the Applicant for laying cabling to connect to the national grid would be retained for the purposes of any monitoring and management of the cable route. National Grid's existing operational access into the Drakelow substation would be used for any maintenance works required specifically within the substation itself, at the point of the cable connecting into the substation infrastructure.

10.4 INTERNAL TRACKS

10.4.1 A series of internal tracks would be constructed to provide operational access across the solar park and would be constructed from compacted stone and gravel with a weed membrane, or mown grass corridors. Culverts would be used where those tracks would cross existing watercourses.

11 MEETING THE DESIGN OBJECTIVES

11.1.1 Section 6 of this Statement identifies the key Design Objectives which have guided the design process during the preparation of the application and the development of the illustrative design and the design parameters. This Section demonstrates how those individual Design Objectives have been addressed and achieved. Reference is made throughout to the Environmental Statement [Document 6.1] and other documents within the wider application as necessary, with those documents providing the full technical assessment of the matters summarised in this section of the Design Statement.

11.2 DESIGN OBJECTIVE 1 - RENEWABLE ENERGY

To use the land available in an efficient way to generate a significant amount of renewable energy to contribute to the UK meeting its national net zero targets and targets for the deployment of solar generation.

11.2.1 The Proposed Development is expected to be capable of generating some 138MW of renewable electricity, which alongside other solar farm projects across the country will make an important contribution to the UK transitioning to meet its net zero targets, which is to achieve 70GW of solar generation by 2035, and in the context of the delivery of low carbon renewable generating infrastructure being identified through National Policy Statements as a critical national priority.

11.2.2 The Proposed Development maximises the land available for the deployment of solar arrays, whilst taking appropriate account of factors such as existing field boundaries, the presence of ecological and arboricultural features and receptors and the presence of existing properties, viewpoints and routes through and around the site.

11.2.3 The Design Objective is specifically secured within the application through:

- The Works Plans – which define the maximum area available for the siting of solar panel arrays;
- The Design Parameters – which define the maximum design dimensions for the panel arrays and which include an element of flexibility to allow for the latest solar technologies to be employed at the time of construction.
- The DCO – the draft DCO does not place an upper limit on the generating capacity of the Proposed Development, providing flexibility for the site to generate additional electricity should the technology and efficiency of solar photovoltaic panels improve in the future.

11.3 DESIGN OBJECTIVE 2 - GRID RESILIENCE

To contribute to the resilience of the energy grid by providing for additional diversification of production and by providing for the storage of energy for when it is most needed.

11.3.1 The inclusion within the Project of a 37.5MW Battery Energy Storage System directly addresses Design Objective 2. BESS facilities across the country play an important role in managing supply and demand across the grid. The primary role of the BESS in that respect is to collect and store electricity generated by the solar photovoltaic arrays, at times when it is not possible or desirable to transfer that electricity directly to the national grid. The BESS facility would also then have a secondary function of being able to import electricity from the national grid, providing a grid balancing role by again storing that electricity until it is desirable and possible to export that back to the national grid.

11.3.2 The Design Objective is therefore met through the inclusion of the BESS within the scheme, through Work No.2. As documented within this Statement, during the evolution of the scheme the position of the proposed BESS within the wider scheme has changed in order ensure that it is proposed in the most appropriate location, having regarding to factors such as the presence of noise sensitive receptors in the vicinity of the site and levels of flood risk.

11.4 DESIGN OBJECTIVE 3 - AGRICULTURAL LAND

To minimise where possible the temporary loss of and impact on Best and Most Versatile Agricultural Land

11.4.1 The agricultural land quality of the site varies from Grade 2 (very good) to 3a (good) and 3b (moderate) across the Oaklands Farm area of the site, with the cable connection route being primarily moderate 3b quality land. Within the confines of the Site that means there is a contradiction between Design Objectives 1 and 3 in particular. Design Objective 3 therefore reflects the starting position that taken within National Policy, that where possible large scale solar schemes should avoid the use of Best and Most Versatile Land but that the use of agricultural land for large scale renewable energy infrastructure is not prohibited.

11.4.2 The Environmental Statement provides a full assessment of the effects on agricultural land at Chapter 15. The ES confirms that some 3.7ha of BMV land and 2.8ha of Grade 3b land would be affected by tracks, fixed infrastructure and the substation. Those fixed elements would therefore result in the use of some 1.5% of the 191 hectare Site area overall. Those areas could be restored following the decommissioning of the scheme, albeit for robustness the ES takes the position that it would not be possible to restore those to a comparable quality.

11.4.3 The remaining elements of the scheme, including the solar panels themselves, would not result in the permanent loss of agricultural land, particularly as the method of installing the panels ensures that ground intrusion is minimised. The use of appropriate techniques would ensure that soils disturbed for the installation of the cable connection would be replaced in situ.

11.4.4 The Environmental Statement accordingly concludes a limited adverse effect on agriculture and soils, based on mitigation measures which include the use of a Soil Management Plan embedded within the CEMP and OEMP, which would be provided to satisfy Requirements 9 and 11 of the dDCO [Document 3.1], together with the temporary nature of the use and the mix of quality of agricultural land across the Site.

11.4.5 Design Objective 3 has therefore been reflected in the site selection process, in the evolution of the layout of the Proposed Development, particularly in respect of the location of permanent elements like the BESS and substation, and through the design and mitigation measures proposed for the solar arrays and cable.

11.5 DESIGN OBJECTIVE 4 - LANDSCAPE AND VISUAL IMPACTS

To develop the site sensitively to limit the impact of the Proposed Development on the wider landscape and on views from residential properties and users of the surrounding area.

11.5.1 The Design Evolution section of this Statement confirms that at the outset of the project the Applicant had regard to the presence of any designated landscape when undertaking the site selection process. From the outset of the design process there has been a commitment to retaining existing hedgerows and mature trees, to preserve those within the wider landscape and to benefit from the natural screening those features provide. The scheme presented at the PEIR stage reflected a number of reduced panel arrays which took account of larger buffers around residential properties, with one aim of that approach being to minimise the impact of the proposals visually on those properties. The location of features like the Project Substation and BESS has evolved during the preparation of the application, but ensures that natural topography and existing natural features are used to effectively screen those features from view.

11.5.2 The development of the site in a manner which limits the impact of the Proposed Development in landscape and visual terms is therefore embedded across the application, through the extent of works plans and the identified design parameters, as well as in other environmental commitments.

11.5.3 Chapter 5 of the ES, regarding landscape and visual impact, concludes that there will inevitably be significant adverse impacts in landscape and visual terms at the site level and in views from roads and other points in the immediate vicinity due to the type of development proposed and the change to the site itself. However,

the extensive landscaping proposed across the development does serve to reduce that impact. The Proposed Development was assessed as not breaching the residential Visual Amenity Threshold in any of the views from residential properties in the surrounding area.

11.5.4 With the development not being able to entirely avoid some landscape and visual impacts, the approach under Design Objective 4 has been to demonstrate that at the outset the site selected allows for those impacts to be managed and minimised. The Proposed Development then takes those opportunities to develop the site sensitively in order to minimise those impacts to an acceptable level. The lack of statutory landscape designations and the topography of the site, combined with the layout and design parameters and retention of existing landscaping and provision of new landscaping ensures, in that respect, that Design Objective 4 has been achieved.

11.6 DESIGN OBJECTIVE 5 - ECOLOGY AND BIODIVERSITY

To sensitively take account of existing ecological and biodiversity receptors on the site and to deliver a significant level of Biodiversity Net Gain across the site as a result of the Proposed Development.

11.6.1 From the outset of the project the design proposals took account of immediately perceptible ecological and biodiversity features such as veteran trees and watercourses, by ensuring that sufficient offset distances between those features and aspects of the Proposed Development were incorporated into the illustrative layout.

11.6.2 More detailed survey and assessment work has then been conducted to ensure that a comprehensive understanding has been achieved of the wider ecological and biodiversity features across the site, and the scheme has similarly been adjusted to address those features where present.

11.6.3 The Proposed Development has then been designed to enhance the biodiversity value of the site, with the works plans and illustrative layout plans incorporating various areas of dedicated landscaping and new planting around the scheme, the result of which would be the achievement of a net gain of 125.07% in habitat units, 20.02% in hedgerow units and 19.82% in river units, with that enhancement to be managed through a Landscape and Ecological Management Plan.

11.6.4 The Environmental Statement concludes that at construction stage significant impacts on ecology and biodiversity would be avoided through the use of species specific measures, with some benefits achieved though the removal and management as necessary of invasive species.

11.6.5 Overall the development has the potential to have a significant adverse effect on ecology, but through the various species specific mitigation measures identified and the creation of new areas of habitat creation those significant impacts are avoided. The nature of the Proposed Development means that the Environmental Statement [Document 6.1] concludes that significant adverse effects at the local level on skylarks cannot be entirely avoided, as that species relies on open habitats and the Proposed Development would result in the open nature of the site being lost. The creation of habitat areas, particularly species rich grassland in some areas of the site and the Biodiversity Net Gain provided across the site generally is expected to deliver both nesting and foraging opportunities for skylark. As those effects are significant at the local level they are not assessed as significant within the Environmental Statement [Document 6.1].

11.6.6 The Applicant therefore considers that the Proposed Development has achieved Design Objective 5.

11.7 DESIGN OBJECTIVE 6 - HERITAGE

To minimise impacts on heritage assets where those are present.

11.7.1 The assessment of the site and its surroundings has not identified any statutory heritage assets within the site which would be directly affected by the Proposed Development. The measures taken through the design of the scheme to address other matters such as residential amenity and landscape and visual impacts, as documented in this Statement, have also served to ensure that the Proposed Development would not have any significant effects on the setting of statutory heritage assets which sit outside the order limits.

11.7.2 Requirement 18 of the draft DCO ensures that a suitable programme of archaeological surveying and mitigation measures will be undertaken, which is expected to comprise a staged programme of archaeological works involving advanced surveying works and construction monitoring.

11.7.3 The embedded design of the Proposed Development and the commitment to further archaeological work ensures that the scheme successfully addresses Design Objective 6.

11.8 DESIGN OBJECTIVE 7 - HIGHWAYS

To develop the scheme in a way which avoids adverse impacts on the local and wider highways network in the vicinity of the site, as well as on the users and the residents along that highways network.

11.8.1 The nature of the development is one where at the operational stage vehicle movements are typically very low, with the assessment presented within the

Environmental Statement [Document 6.1] therefore focusing on construction related highways impacts, and assessing a range of potential scenarios in that respect.

11.8.2 The preferred option has been to use the proposed Walton-on-Trent bypass as a means of construction traffic taking the shortest route from the strategic road network to the site. However, with uncertainty remaining regarding the delivery of that route, alternative and back up construction access routes have been assessed, together with specific routes for the low number of abnormal loads which would be required at points during the construction process.

11.8.3 A Traffic Management Plan will be used to control and manage construction vehicles, and will include measures such as restricting deliveries during peak periods and ensuring that appropriate signage and traffic controls are in place. The outline Traffic Management Plan provided with the application is based on a comprehensive review and understanding of the local road network, with a full Traffic Management Plan to be provided under the Requirements included in the dDCO. The Traffic Management Plan will then be a live document, and therefore able to evolve to ensure that any other issues are effectively addressed. The use of a Traffic Management Plan will also ensure that any potential cumulative effects of the Proposed Development together with other developments in the area are properly managed and avoided. The Traffic Management Plan also directly addresses matters such as the impact of noise arising from construction vehicle movements on residential properties in the vicinity of the site, through the measures it includes such as controls on the time of construction vehicle movements.

11.8.4 This Statement records how the arrangements for construction and operational accesses to the development site itself have evolved during the design process. The Applicant has provided indicative designs of the key access points with the application, which demonstrate that work has been undertaken to design those accesses to a point where there is confidence that those can be physically delivered as part of the Proposed Development.

11.8.5 The Environmental Statement concludes that construction related highways impacts, with the implementation of a Traffic Management Plan, would be negligible to slight and therefore not significant. The low level of movements required for the operation of the Proposed Development similarly ensures that the operation of the Proposed Development would not create any significant impacts on the highway network. Design Objective 7 has therefore been met.

11.9 DESIGN OBJECTIVE 8 - LOCAL AMENITY

To ensure that the construction, operation and decommissioning of the site does not adversely affect local residents and other users of the surrounding

area by impacting on their safety or amenity through matters such as noise, and unexpected events.

11.9.1 Design Objective 8 focuses on the potential impacts on amenity arising from construction and operational noise, air quality and accidents/unexpected events. The visual impact of the proposals on residential properties is dealt with under Design Objective 4 and any impacts of noise arising vehicle movements associated with construction and operation is dealt with under Design Objective 7.

11.9.2 As this Statement demonstrates, the locations of the closest permanent residential receptors have influenced the design of the scheme. Refinements were made to the Proposed Development following noise assessment work, including the relocation of string inverters within the solar arrays and the relocation of the substation and BESS, to minimise impacts on residential properties. The Environmental Statement [Document 6.1] concludes that operational noise impacts are not significant due to those embedded design measures.. Further mitigation measures are secured through the dDCO, including the requirement for a CEMP to be produced, which includes measures to manage and control noise and any air quality impacts during construction, with the Traffic Management Plan then managing impacts arising from construction related vehicle movements.

11.9.3 The Environmental Statement [Document 6.1] addresses the issue of glint and glare, noting that potential significant effects were only identified along one specific part of Coton Road. Those effects have been dealt with through the design of the scheme and the provision in that area of screening through new hedgerow planting, with temporary screening to be used whilst that new planting becomes established.

11.9.4 The primary risk of accidents assessed within the Environmental Statement [Document 6.1] is thermal runaway/fire occurring within the BESS facility. As documented in this Statement the location of the BESS has changed as the scheme has evolved, with one consideration being to ensure that aspect of the Proposed Development is located at an appropriate distance from the nearest residential receptors. The design of the BESS facility itself will also include embedded mitigation measures, such as ensuring appropriate separation distances between individual battery units. An Outline Battery Safety Management is provided within the application, with a full Battery Safety Management Plan to be provided under the Requirements in the dDCO, which ensures that the risk of any thermal runaway events occurring is further minimised, with the Environmental Assessment [Document 6.1] concluding that a very low risk remains of the Proposed Development resulting in a major accident or disaster.

11.9.5 The Proposed Development, through the use of embedded design measures and further best practice management of the construction, operation and decommissioning stages, ensures that significant impacts on human amenity of those residents present in the vicinity of the site will be avoided and on that basis ensures that Design Objective 8 is achieved.

11.10 DESIGN OBJECTIVE 9 - FLOODING

To ensure that the construction, operation and decommissioning of the site does not adversely affect the local area by increasing the risk of flooding.

11.10.1 There is a tributary of the River Mease present which means that areas of the site are within Flood Zones 2 and 3. This Statement documents how during the evolution of the Proposed Development regard was had to the need to avoid placing particularly flood sensitive aspects of the development, such as the substation and BESS, within those areas of higher flood risk, which along with other factors influenced the proposed location of those elements of the scheme.

11.10.2 The scheme then ensures, through the CEMP and outline drainage strategy, that the Proposed Development would be constructed and designed in such a way as to avoid the construction process or the development itself giving rise to additional levels of uncontrolled surface water runoff. The Environmental Statement concludes that no significant effects have been identified in respect of flooding and drainage and Design Objective 9 has therefore been achieved.

11.11 DESIGN OBJECTIVE 10 - PUBLIC RIGHTS OF WAY

To protect and where possible enhance the local Public Rights of Way network.

11.11.1 The Cross Britain Public Right of Way crosses the Order Limits at the northern end of the Oaklands Farm solar array area.

11.11.2 During construction the PROW would be managed to allow it to continue to function throughout the installation of the solar panels and other associated features of the scheme, with management measures including manning crossing points with site operatives. The Cross Britain Public Right of Way would then remain on its current routing, with landscaping provided to minimise the impact of the Proposed Development on that route.

11.11.3 A new permissive path is proposed within the solar array area, which would link PROW SD12/4/1 to the south of the site through to PROW SD13/1/1 where it meets the eastern boundary of the order limits, and to SD38/6/4 which is the Cross Britain Way, thereby providing a direct connection between those PROWs which does not exist at present. The new permissive path would therefore serve to enhance the PROW network in the vicinity of the site and together with the appropriate management of the Cross Britain Way during the construction process would ensure that Objective 10 is achieved.

12 SUMMARY AND CONCLUSION

12.1.1 This Statement recognises the need established through policy for Nationally Significant Infrastructure Projects to demonstrate that they achieve 'good design', which incorporates considerations of the response of schemes to the site context and the attractiveness, durability, functionality, adaptability of Proposed Developments.

12.1.2 This Statement demonstrates that the design process for the Proposed Development began by developing a comprehensive understanding of the site context, which formed the basis for a number of Design Objectives to then be defined which reflect those opportunities and constraints and the aspirations of the project.

12.1.3 The site opportunities and constraints and the Design Objectives led to the introduction of key design parameters from the outset of the project. Those have been developed as the project has progressed through the technical work which underpins the application, particularly through the environmental impact assessment process. That technical work has led to a fuller understanding of the individual constraints and opportunities, which have allowed the design parameters to be further refined through an iterative process during the preparation of the application.

12.1.4 As illustrated by this Statement the design of the scheme has continued to evolve and develop throughout the preparation of the application, reflecting work to refine the proposals in the light of technical assessments as well as to reflect engagement with consultees and stakeholders through the development of the ES. This Statement demonstrates how the individual design objectives have been achieved, with reference to other aspects of the application where necessary. That achievement of the design objectives shows that the Proposed Development is sensitive to its context and that it is a development which will ultimately be a well designed scheme which fully, but sensitively, utilises the site area available to generate renewable energy and to deliver grid resilience.

Appendix A
Environmental Site Constraints plan

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 1.5: Site Constraints

- Order Limits / Site Boundary
- Residential property within close proximity

Designated heritage asset

Listed Building (LB)

- Grade II*
- Grade II
- Scheduled Monument (SM)
- Conservation Area (CA)

Public Rights of Way

- Public rights of way
- Cross Britain Way / National Forest Way long distance footpath

Hydrology

- Watercourse
- Flood zone 2
- Flood zone 3

Ecology

- Local wildlife site
- Ancient woodland

Tree preservation order (TPO)

- TPO woodland
- TPO point
- TPO tree group
- TPO area

Notes:
For ecological survey results please see figures within Appendices 6.3-6.15.

All utility and telecommunications infrastructure is shown on Figure 16.1.

PINS reference: EN010122

Map scale 1:17,000 @ A3

Appendix B
Design Parameters Table

Scheme Component	Parameter Type	Applicable Design Parameter
Work No.1 – a ground mounted solar photovoltaic generating station – total area 113.34ha		
Solar PV modules	Maximum height of solar PV modules above ground level (AGL)	The maximum height of the highest part of the solar PV modules will be 2.7m AGL.
	Minimum height of the solar PV modules AGL	The minimum height of the lowest part of the PV Panels will be 0.8m AGL.
	Slope and orientation of the solar PV modules from the horizontal	South facing (fixed) with horizontal tilting between 15 and 22 degrees.
	Module glass colour	Dark blue or black
	Frame type	Brushed aluminium/ stainless steel; bare metal in appearance.
Solar PV Module Mounting Structures	Mounting rack	Aluminium or stainless steel
	Foundation type	Steel piles rammed/pushed into the ground. Alternatives include pillars fixed to a concrete foundation. Maximum depth of piling is 2m below ground level.
	Separation distance between rows	2.5 – 3m
Inverters	Type	String Inverters
	Number	480
	Colour	White/grey
Transformer Station	Minimum/Maximum dimensions	Smaller Transformer Unit (630–1800kVA) = 2.4m x 3.4m x 2.25m (height, length, width) Larger Transformer Unit (2000-3150kVA) = 3m x 4.1m x 2.9m (height, length, width)
	Number	70
	Colour	Dark Green or Recessive Grey
	Foundations	Crushed stone material foundations 0.5m below surface, with earth bunds built up around the base and 50cm wide x 5cm thick concrete paving surrounding transformer station (no concrete underneath transformer)
Low Voltage (LV) Direct Current (DC) solar PV cabling	-	Low voltage (LV) electrical cabling collects electrical output from solar PV modules, running in ducting trays fastened to underside of PV modules to the string inverters at the end of each row of PV modules.
Work No.2 - Battery Energy Storage System (BESS) compound – 0.68ha		

BESS Compound (compound to house the BESS components and the containers)	Maximum area	0.68ha
Battery Energy Storage System (BESS) Battery Containers	Maximum number	78
	Dimensions (in metres)	9.34 x 1.73 x 2.52 (length, width, height)
	Colour	Dark Green or Recessive Grey
	Foundation	Containers will sit on concrete piles or blocks, raised to a maximum of 0.6 metres above ground level. For drainage and fire-fighting water control, a drainage and containment system will be implemented into the sub-base of the BESS compound. The worst case would be an impermeable area covering the whole BESS compound.
BESS Power Conversion System (PCS) Units	Maximum number	13
	Dimensions (in metres)	6.1 x 2.44 x 2.90 (length, width, height)
	Colour	Dark Green or Recessive Grey
	Foundation	Containers will sit on concrete piles or blocks, raised to a maximum of 0.6 metres above ground level. For drainage and fire-fighting water control, a drainage and containment system will be implemented into the sub-base of the BESS compound. The worst case would be an impermeable area covering the whole BESS compound.
BESS Auxiliary Transformer	Number	1 up to 5 Megavolt-amps (MVA)
	Dimensions (in metres)	8.5 x 4.9 x 3 (length, width, height)
	Colour	Dark Green or Recessive Grey
	Foundation	Sits on concrete pad up to 50mm thick, with suitable bund around the base for containment of oil. The worst case would be an impermeable area covering the whole BESS compound.
Internal BESS Unit Fire Suppression System	Type	Built into the interior of battery container units with detection and automatic initiation. Water-based (sprinkler or mist system), or inert gas delivery system. Associated storage of water or inert gas with infrastructure for deliveries/removal, or connection to existing piped agricultural water supply. “Dry Risers Pipes” may be utilised on units which allow for injection of water into burning containers without personnel having to access.
External BESS Fire Suppression	Type	Provision for controlled burn of units is a potential option to manage fires, with fire-

		fighting strategy consisting of cooling surrounding components and units to prevent spread of fire (managed by spacing of units to prevent runaway/spread, containment of emissions/residues, and automatic shut-down of BESS compound). Water is to be used to 'dowse' and cool surrounding battery units to prevent spread of fire, allowing a burning battery unit to extinguish itself. Deluge system consists of water supply (tanks or piped supply), piping, nozzle/delivery components, containment of used water and contaminants via mitigation measures (bunding and/or containment ponds/tanks with shut-off and separating capabilities to test water before discharging to environment).
	Number and dimensions of water storage tanks (in metres)	Up to 3 water storage tanks capable of storing c.300m^3. Water tank = 6 metre diameter, 4 metre height to achieve c.100m3
BESS Compound Access gates and palisade fencing	Type	Steel palisade security fencing with lockable double-leaf access gates
	Height	Up to 3m
Work No. 3 - Works in connection with a new 132/33kV onsite substation – 0.66ha		
Substation Compound	Maximum area	**0.66ha**
	Foundations	Parts of the compound will require an impermeable foundation. Worst case would be an impermeable area of up to 20% by area. The remainder of the compound will comprise permeable crushed stone/type 1 hardstanding.
Substation Transformer(s)	Number	2 maximum (each is 90MVA and 132kV)
	Dimensions (in metres)	7.2 x 5.3 x 3.7 (length, height, width)
	Foundations	Sunken concrete chamber up to max depth of 2 metres and 20 x 20 metre footprint, with transformer unit(s) mounted at or below ground level with adequate bunding underneath the transformer unit(s).
	Concrete blast wall (in case of fire/explosion)	Concrete wall up to 0.5 metres thick sitting in between the 2 transformer units, up to 5.2 metres high above ground level

Substation Busbars and Overhead Electrical Infrastructure	Dimensions	Overhead Busbar height = 7.4m (tallest parts of substation)
Substation welfare units adjacent to substation control building	Number	1 Large or 1 Small Unit
	Dimensions of dedicated welfare units (in metres)	Large unit = 12.2 x 2.45 x 2.9 (length, width, height) Small unit = 6.1 x 2.45 x 2.9 (length, width, height)
	Foundations	Worst case – concrete pad. Dimensions of pad foundation (Large Unit) = 4.45 x 14.2 x 0.1 (width, length, thickness) Dimensions of pad foundation (Small Unit) = 4.45 x 8.1 x 0.1 (width, length, thickness)
	External appearance	Dark green or recessive grey shipping containers, with metal steps and handrails as necessary for safety
Storage containers	Number	4 storage units adjacent to substation control building
	Dimensions (in metres)	Storage unit = 12.2 x 2.45 x 2.9 (length, width, height)
	Foundations	Concrete pad or permeable, crushed aggregate hard-standing base depending on ground conditions at time of construction. Dimensions of foundation (Storage Large Unit) = 4.45 x 14.2 x 0.1 (width, length, thickness)
	External appearance	Dark green or recessive grey metal shipping containers, with metal steps and handrails as necessary for safety
Substation control building	Dimensions (in metres)	10 x 22 x 4 (width, length, height)
	Foundations	Worst-case – concrete pad. Concrete foundation for Substation control building will be set up to 1 metre below ground, with dimensions of 11 x 23 x 1 (width, length, depth)
	External appearance	Will be constructed per relevant substation regulations and specifications. Walls made of concrete blocks, glass reinforced plastic (GRP) or steel construction with cladding. Finished in dark green or recessive grey paint. Roof could be tiled, metal or other materials depending on final design and requirements.
Statcom (Static Synchronous Compensator) Units	Number	12
	Dimensions (in metres)	6.1 x 2.45 x 2.9 (length, width, height)

	Foundations	Worst-case – concrete pad under each container unit, up to 50mm thick with bunding for containment of oil
	External appearance	Metallic containers finished in Dark Green or Recessive Grey paint as necessary
132KV harmonic filter compound	Dimensions (in metres)	21 x 23 x 7 (width, length, height)
	Foundations	Concrete pad.
Substation Compound Fire Fighting and Water Containment	Type	Deluge system to douse transformers in case of fire. Deluge system consists of metal piping, nozzle/delivery components, containment of used water and contaminants via mitigation measures (bunding and/or containment ponds/tanks with shut-off and separating capabilities to test water before discharging to environment)
	Volume/dimensions (in cubic metres/metres)	Water tank = 6 metre diameter, 4 metre height to achieve c.100m^3
Hardstanding parking and storage areas	Type	Permeable hardstanding, crushed aggregate Type 1
Access gates and fencing	Type	Steel palisade security fencing with lockable double-leaf access gates
	Height (in metres)	3
CCTV Cameras	Type	Remotely monitored dome cameras mounted on metal poles, placed around BESS and Substation Compound for operational Health & Safety and crime prevention.
	Number	Up to 10
	Height (in metres)	3.50
Work No. 4 - Works to trench and lay 132 kilovolt electrical cables connecting Work No. 3 to Work No. 5		
Cable laying	Type	132kv underground cable
	Number	One continuous trench (with sections of directional drilling and watercourse crossing infrastructure as necessary)
	Maximum width of trench (in metres)	3
	Maximum depth of trench (open trenching, in metres)	3
	Maximum depth of directional drilling (in metres)	20m
	Maximum working width of cable corridor construction (in metres)	50m to facilitate storage/laydown/access and working machinery
	Associated works	Works associated with cable laying including trenching, jointing bays, fibre bays, cable ducts, cable protection, joint protection, manholes, kiosks, marker

		posts, underground cable marker, tiles and tape, send and receive pits for horizontal directional drilling, trenching, lighting, and a pit or container to capture fluids associated with drilling. All these works will be undertaken within the maximum parameters described above.
Jointing Bays within the cable corridor	Maximum number	6
	Dimensions (in metres)	12 x 2 x 2.6 (length, depth, width)
Work No 4A – crossing Rosliston Road with electrical cabling		
Cable laying	Type	132kV below ground cable, laid either by directional drilling or trenching. With directional drilling, a pipeline would be bored under Rosliston Road to emerge at a target point on the opposite side. Location of the drill bit is monitored using the Horizontal Directional Drilling (HDD) locating system. If trenching is chosen instead of directional drilling, standard trenching techniques to break open the highway to install trench and ducting for cabling will be used, per final detailed construction designs.
	Maximum depth of directional drilling (in metres)	20m
	Associated works	Works associated with cable laying including trenching, jointing bays, fibre bays, cable ducts, cable protection, joint protection, manholes, kiosks, marker posts, underground cable marker, tiles and tape, send and receive pits for horizontal directional drilling, trenching, lighting, and a pit or container to capture fluids associated with drilling. All these works will be undertaken within the maximum parameters described above.
Work No. 4B - Temporary stopping up of water courses to trench and lay cables, installation of culverts, drainage and other features to cross watercourses		
Culverts/watercourse crossing	Type	Permanent or temporary. Permanent would be concrete with soil or other organic material for load-bearing and to secure culvert structure. Temporary would be modular steel construction bridges for crossing water courses.
	Number	For Haul Road (Construction Track) = 3 crossing culverts For underground 132kV cabling = 5 crossing solutions
	Dimensions (in metres)	Culvert Pipe diameter of up to 1m, length of crossing to be determined at

		construction but the maximum span required is likely less than 10m
Cable trenching	Dimensions (in metres)	Width 3m, 3m depth – rivers 2m and ditches 1.7m below bed of watercourse. Unless permanent culvert in which case cabling runs through culvert structure
Work No. 4C – crossing Walton Road with electrical cabling		
Cable laying	Type	132kV below ground cable, laid either by directional drilling or trenching. With directional drilling, a pipeline would be bored under Walton Road to emerge at a target point on the opposite side. Location of the drill bit is monitored using the HDD locating system. If trenching is chosen instead of directional drilling, standard trenching techniques to break open the highway to install trench and ducting for cabling will be used, per final detailed construction designs.
	Maximum width of trench (in metres) if required	3
	Maximum depth of trench (open trenching, (in metres) if required	3
	Maximum depth of directional drilling if required (in metres)	20
	Associated works	Works associated with cable laying including trenching, jointing bays, fibre bays, cable ducts, cable protection, joint protection, manholes, kiosks, marker posts, underground cable marker, tiles and tape, send and receive pits for horizontal directional drilling, trenching, lighting, and a pit or container to capture fluids associated with drilling. All these works will be undertaken within the maximum parameters described above.
4D - Crossing Coton Road with electrical cabling		
Cable laying	Type	33kV or less below ground cable, laid either by directional drilling or trenching. With directional drilling, a pipeline would be bored under Coton Road to emerge at a target point on the opposite side. Location of the drill bit is monitored using the HDD locating system. If trenching is chosen instead of directional drilling, standard trenching techniques to break open the highway to install trench and ducting for cabling will be used, per final detailed construction designs.

	Maximum width of trench (in metres) if required	3
	Maximum depth of trench (open trenching, (in metres) if required	3
	Maximum depth of directional drilling if required (in metres)	20
	Associated works	Works associated with cable laying including trenching, jointing bays, fibre bays, cable ducts, cable protection, joint protection, manholes, kiosks, marker posts, underground cable marker, tiles and tape, send and receive pits for horizontal directional drilling, trenching, lighting, and a pit or container to capture fluids associated with drilling. All these works will be undertaken within the maximum parameters described above.
Work No. 5 - connection and installation works to the existing transmission network substation, including works to trench and lay 132 kilovolt electrical cables connecting to Work No. 4C		
Grid connection	Type	Installation of a 132kV below ground cable connecting to Point of Connection within Drakelow National Grid substation operational land. The installed trench width will be 1.5m, with a permanent easement width (including setback and access requirement) of up to 3m (1.5m either side of centreline)
	Maximum width of trench (in metres)	3m
	Maximum depth of trench (in metres)	3
	Maximum depth of directional drilling if required (in metres)	20
	Maximum working corridor (in metres)	Construction corridor for installing 132kv cable in Drakelow is up to 16m.
	Associated works	Works including trenching, directional drilling, clearing of vegetation and felling of trees, installation of jointing bays, fibre bays, cable ducts, cable protection, joint protection, manholes, electrical kiosks/cabinets, marker posts, underground cable marker, tiles and tape, send and receive pits for horizontal directional drilling, trenching, lighting, and a pit or container to capture fluids associated with drilling, storage of equipment, plant, materials, installing drainage features, lighting, and welfare

		facilities, facilities for storage and removal of waste. All these works will be undertaken within the maximum parameters described above.
Work No. 5A - construction, operational maintenance and decommissioning access for Work No. 5		
• Works to create a new permanent access junction from the public highway (as detailed on the access design drawings provided in **Figures 4.5 to 4.9**, and **Appendix 4.7: Detailed Site Access Engineering Drawings**), and install temporary traffic lights or other measures to manage traffic. • Works to widen and surface the public highway within the highway boundary. • Works to excavate and store soil, clear vegetation and fell trees, level, shape and prepare surface for construction track and permanent operational track to be installed. • Installation of permanent 3.5m wide track made up of 200mm of type 1 compacted stone/gravel and/or porous geotextile and stone system for operational maintenance. • Installation of a temporary 5m wide track to facilitate construction made up of 200mm of type 1 compacted stone/gravel and/or porous geotextile and stone system. • Security features such as installing fencing and gates.		
Work No. 5B - access to National Grid operational land for the construction, maintenance and decommissioning of Work No.5		
• Vehicular access to National Grid operational land during construction, operation and decommissioning of Work No.5		
Work No. 6 - temporary construction and decommissioning of access tracks and compounds		
Access roads, compounds and laydown areas	Maximum width of construction access track (in metres)	Up to 6m comprising either 200mm type 1 compacted stone/gravel and/or porous geotextile and stone system, or steel matt tracking, with associated drainage alongside
	Number and size of construction compounds/laydown areas	3 main construction compounds North: 1 acre (Park Farm) Central: 3 acres (Main Construction compound on Oaklands) Southern: 2 acres (Smaller, southern construction compound on Oaklands)
	Associated works	Ground levelling, installing permeable hard-standing and road surfacing, security features such as installing fencing, gates, checkpoint kiosks, signage, storage of equipment, plant, materials, installing drainage features, lighting, and welfare facilities, facilities for storage and removal of waste. (a) works to improve existing farm access from public highway, and install temporary traffic lights, banksmen or other measures to manage traffic; (b) works to excavate and store soil, clear vegetation and obstacles, level, shape and prepare surface for construction track to be installed;

		(c) storage of equipment and materials; (d) civils investigations and works to reinforce ground with weight-bearing support infrastructure, maintain integrity of structures beneath road surface (e) creation of temporary construction access tracks, laydown and working areas; (f) works required for crossing, moving, re-routing or over/undergrounding of existing utility assets (including water, gas, sewer pipes, electricity distribution/transmission cabling, telecommunications etc.); (g) temporary stopping up of watercourses for installation of culverts, drainage and other features to cross water courses; (h) areas of hardstanding; (i) car parking; (j) site and welfare offices, canteens and workshops; (k) area to store materials and equipment; (l) storage and waste skips; (m) area for download and turning; (n) security infrastructure; (o) site drainage and waste management infrastructure; and (p) electricity, water, waste water and telecommunications connections.
Work No.7 - general works		
Onsite cabling (between battery containers, Power Conversion System (PCS) units, and from PCS to transformers)	Type	Low or medium voltage
	Maximum cable trench dimensions (in metres)	Maximum dimensions: 1.5m deep and 1.2m wide.
Onsite cabling (between the transformer stations and the Proposed Development substation)	Type	Low or medium voltage
	Maximum cable trench dimensions (in metres)	Maximum dimensions: 1.5m deep and 1.2m wide.
Onsite cabling (between PV modules and inverters and from inverters to transformers)	Type	Low or medium voltage (typically electrical cabling is required to connect the inverters to the transformers onsite, this cabling runs from ducts fastened to underside of PV module mounting structure and down one of the mounting piles to ground, where it runs in trench to the nearest transformer station) Cabling between the inverters and the transformer will be buried within underground trenches.

	Maximum cable trench dimensions (in metres)	Maximum dimensions: 1.5m deep and 1.2m wide.
	Associated works	None
Perimeter fencing	Type and height (in metres)	Two designs: **Standard Solar 'Deer' Fencing** 2.1m stock wire mesh deer fencing with wooden posts piled into ground up to 2m. Including mammal gaps, and may utilise a single line of barbed wire. **Fencing When Greater Security Required** 2.1m wire mesh with steel posts piled into ground up to 2m. Including mammal gaps, and may utilise a single line of barbed wire. Temporary screening (such opaque netting attached to the deer fencing) (up to ten years) in key locations to mitigate glint and glare hazards on road users. Fencing to be removed once hedge /screening planting has matured. Approx. 11,000m of perimeter solar fencing throughout site (vast majority will be deer fencing).
Fencing (other)	Type and height (in metres)	1.5 m post and wire agricultural stock fencing
CCTV poles	Maximum height (in metres)	3.51m
	Maximum number	Up to 250 CCTV cameras around solar perimeter spaced approximately 45m apart, 15 around BESS and Proposed Development Substation compounds
Temporary lighting columns (for construction)	Number and height (in metres)	Up to 6 per construction compound (3 main compounds for project, so up to 18 total). Maximum height 5m.
Permanent lighting	Type	Security lighting on buildings, storage and welfare units which will be downward facing.
Weather Stations	Maximum height (in metres)	Small aerials/sensors built into top of select transformer stations placed throughout site. Maximum height 1m.
	Maximum number	10.
Landscaping and biodiversity mitigation and enhancement measures including planting.	As detailed in the Outline LEMP in **Appendix 5.6**.	
Permanent internal access tracks (operational)	Width (in metres) and construction make up	3.5 – 6.0m wide made up of 200mm of type 1 compacted stone/gravel with a geotextile membrane, or mown grass corridor
Temporary internal access tracks (construction)	Width (in metres) and construction make up	3.5 – 6.0m wide made up of 200mm of type 1 compacted stone/gravel with a geotextile membrane and/or porous

		geotextile and stone system, mown grass corridor or metal mats/sheets.
Drainage and irrigation infrastructure	No formal surface water collection system is required for the solar panel areas (Work No. 1) and water will be allowed to percolate into the underlying soil . Work No. 2 BESS – The BESS compound surface will consist of impermeable sub-base to contain fire-water runoff or potential battery contaminants in the unlikely event of a battery fire. This will consist of drainage infrastructure built into or below a sub-base of granular material directing runoff to a containment tank/pond, with testing, flow control and pumping equipment therein to ensure the safe discharge or removal of water following a battery fire. Control valves will be engaged at the earliest detection of a fire to initiate surface and fire-water containment. The BESS units will be surrounded by suitable bunds and the containment tank/pond lined to ensure fire-fighting water and associated contaminants do not leach into the environment.. Under normal operations surface water runoff will bypass the containment tank/pond and drain to the northwest towards the existing drainage channel, ultimately discharging into watercourse approximately 300m north-west of the BESS/Proposed Development substation. Work No. 3 Proposed Development Substation – where required areas of the substation compound will be impermeable. The remaining areas will be permeable. Access tracks (Work No. 7) will be constructed of compacted gravel such that they are permeable. Each track shall be designed with a crossfall towards a gravel filled longitudinal trench into which excess water will flow. These trenches will act as attenuation and treatment prior to infiltration.	
Temporary, mobile satellite construction compounds	Maximum number	10
Permanent satellite operation areas	Maximum number	5
Storage containers	Maximum number, dimensions, and foundation	10 across site Storage unit = 12.2 x 2.45 x 2.9 (length, width, height) Dimensions of concrete slab foundation (Storage Unit) = 4.45 x 14.2 x 0.1 (width, length, thickness)
Work No. 8 - works to facilitate access for all works excluding Work No. 5		
Works to create new permanent access from public highway (as detailed on the access design drawings in **Appendix 4.7**), and install temporary or permanent traffic lights, visibility splays or other measures to manage traffic. • Works to widen and surface the public highway. • Works to excavate and store soil, clear vegetation and fell trees, level, shape and prepare surface for construction track and permanent operational track to be installed. • Security features such as installing fencing and gates.		
Work No. 9 - works for areas of habitat management		
Landscape and biodiversity enhancement measures; and habitat creation and management including earthworks, landscaping, means of enclosure and the laying and construction of drainage infrastructure.		
Work No. 10 - works to implement new permissive path through Order limits		

Permissive path	Width of path	4m with associated deer fencing and hedgerow as required
	Surface type	Mown grass path. Wooden board walk may be utilised in specified location

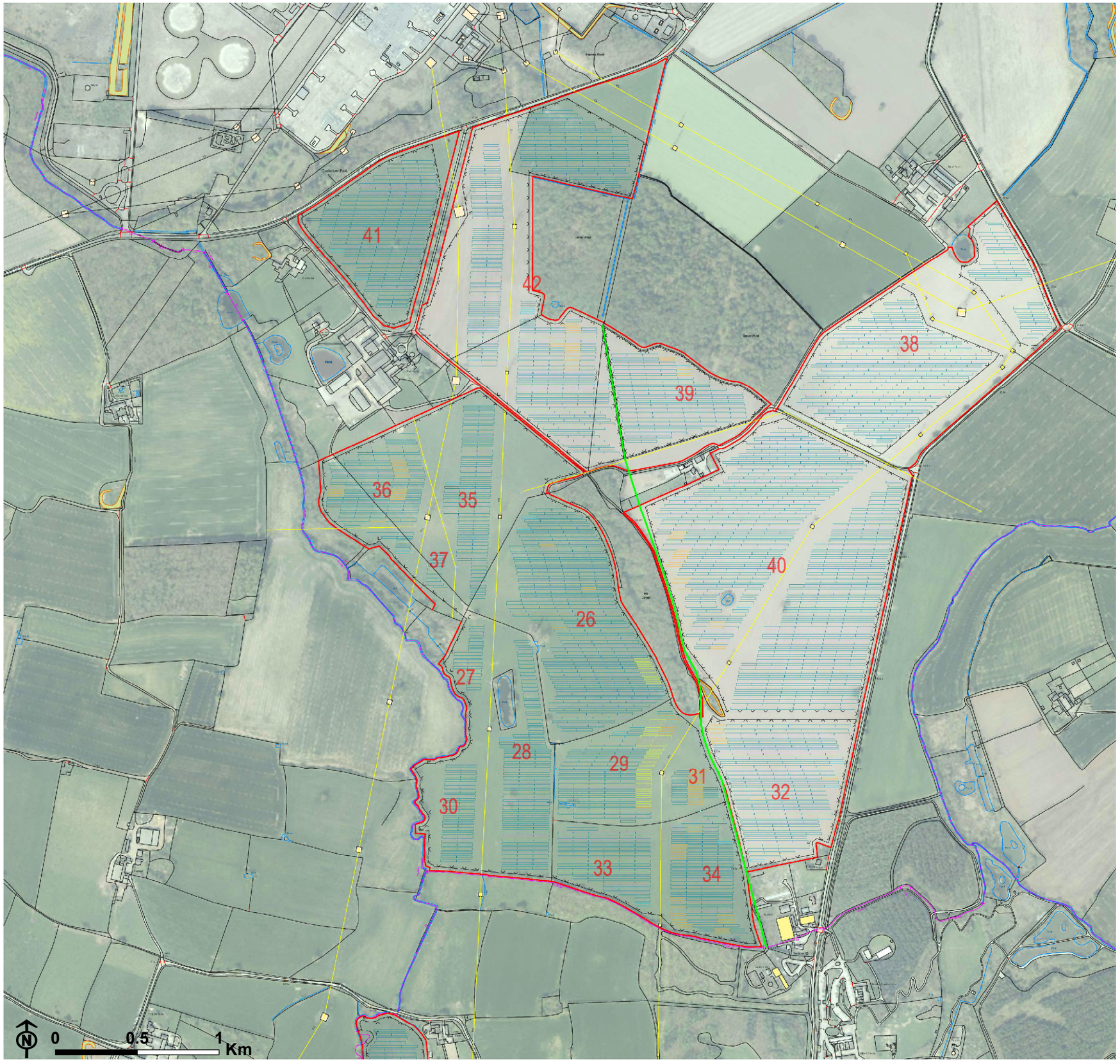
Appendix C

Original Layout – February 2021

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 3.2b: Original Oaklands and Park Farm Layout (February 2021)

Site Boundary
Module unit
Fence

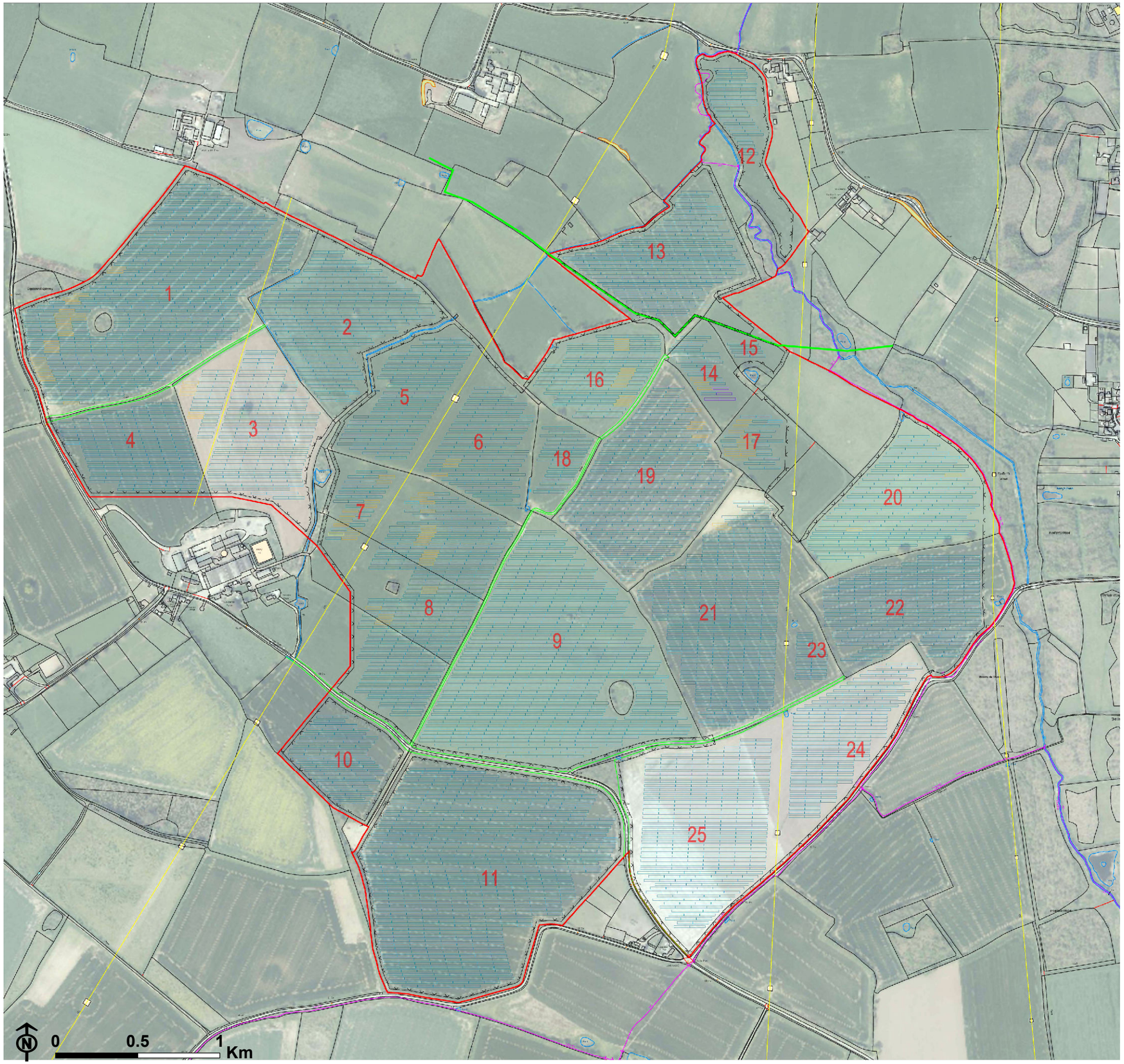


PINS reference: EN010122

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 3.2a: Original Oaklands and Park Farm Layout (February 2021)

Site Boundary
Module unit
Fence



PINS reference: EN010122

Appendix D

Scoping Request Layout – August 2021

Oaklands Farm Solar Park
for Oaklands Farm Solar Ltd

Figure 3.3a: Scoping layout August 2021

- Site Boundary
- Indicative solar panel layout
- Cable route and site access search area

Map scale 1:11,000 @ A3

PINS reference: EN010122

Oaklands Farm Solar Park
for Oaklands Farm Solar Park Ltd

Figure 3.3b: Scoping layout August 2021

- Site Boundary
- Indicative solar panel layout
- Cable route and site access search area

Map scale 1:11,000 @ A3

0 0.5 1 Km

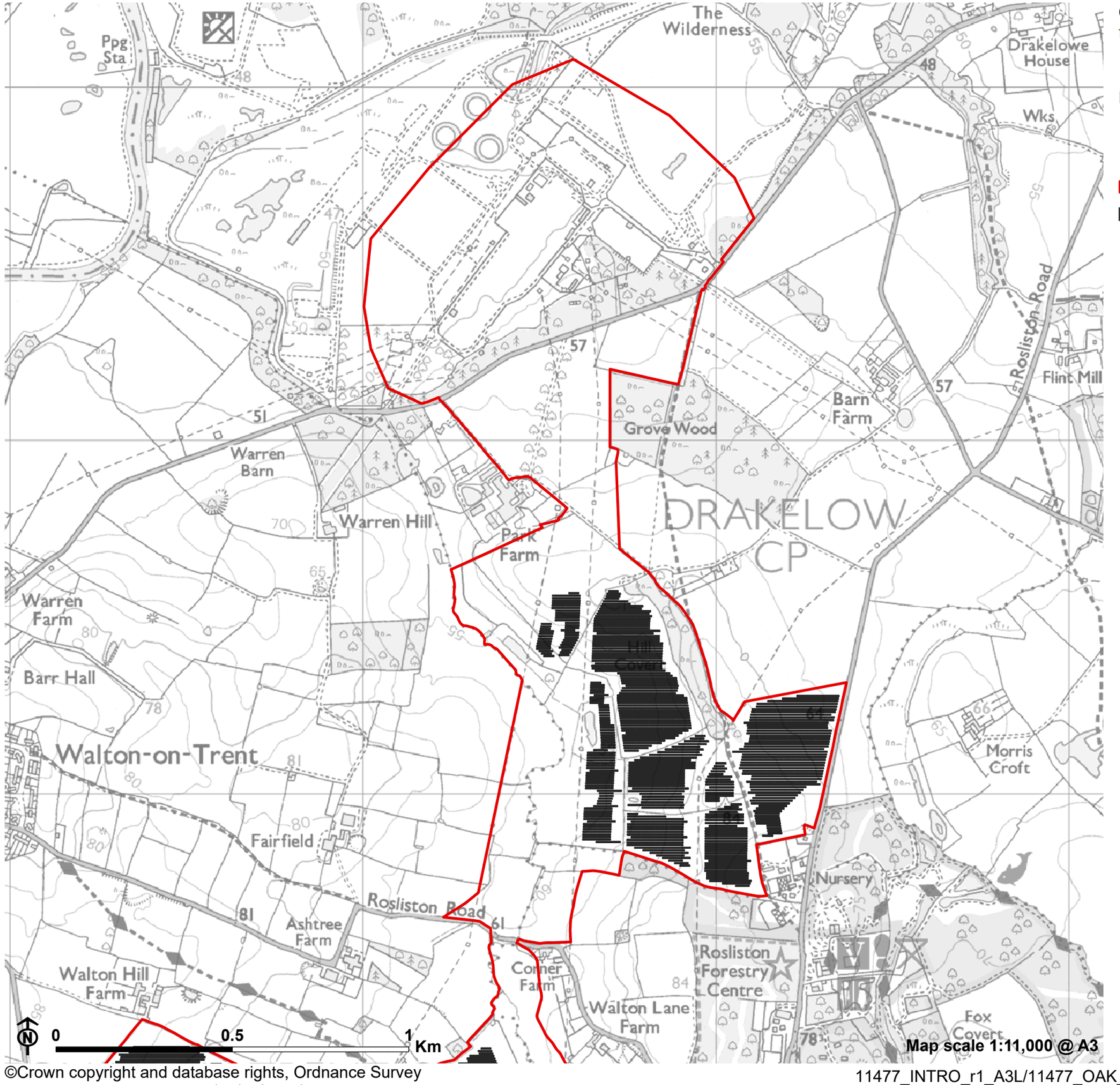
PINS reference: EN010122

Appendix E
PEIR Layout – April 2022

Oaklands Farm Solar Park
for Oaklands Farm Solar Park Ltd

Figure 3.4a: PEIR layout April 2022

Site Boundary
PV panel



Map scale 1:11,000 @ A3

PINS reference: EN010122

Oaklands Farm Solar Park
for Oaklands Farm Solar Park Ltd

Figure 3.4b: PEIR layout April 2022

- Site Boundary
- Battery storage area
- PV panel
- Substation area

0 0.5 1 Km

Map scale 1:11,000 @ A3

PINS reference: EN010122

Appendix F

Updated Site Layout – March 2023

Oaklands Farm Solar Park
for Oaklands Farm Solar Park Ltd

Figure 3.5: Updated site layout March 2023 (additional consultation)

- Site Boundary
- Temporary construction access
- Underground grid cable
- Battery storage area
- Substation area
- Delivery/construction compound
- Onsite construction compound

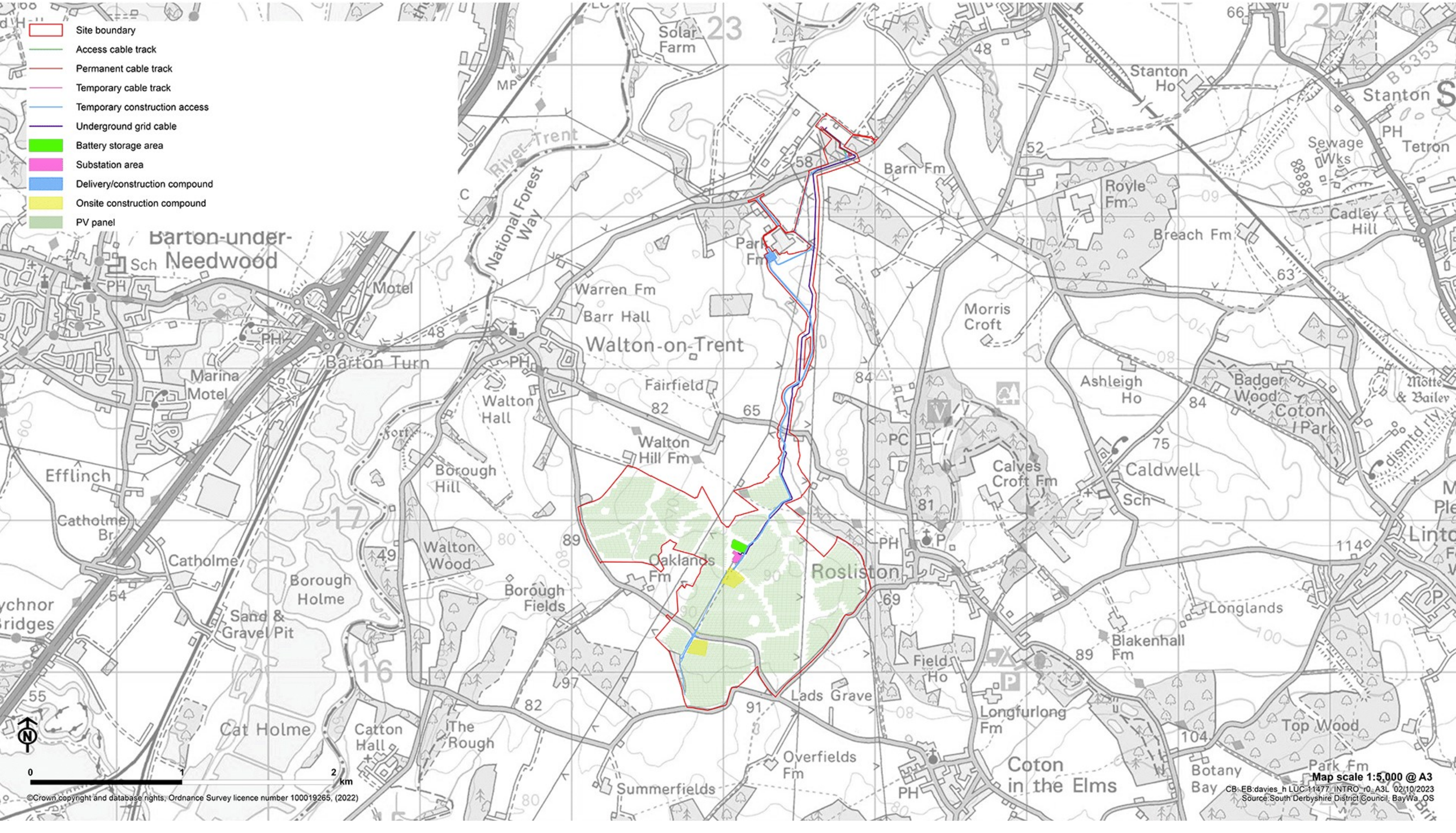
0 0.5 1 Km

Map scale 1:17,000 @ A3

PINS reference: EN010122

Appendix G

Updated Site Layout – October 2023


Site boundary
Access cable track
Permanent cable track
Temporary cable track
Temporary construction access
Underground grid cable
Battery storage area
Substation area
Delivery/construction compound
Onsite construction compound
PV panel
Solar Farm
River Trent
National Forest Way
Barton-under-Needwood
Sch
PH
Motel
Marina Motel
Barton Turn
Efflinch
Catholme Br
Catholme
Borough Holme
Sand & Gravel Pit
Cat Holme
Catton Hall
The Rough
Warren Fm
Barr Hall
Walton-on-Trent
Fairfield
Walton Hall
Borough Hill
Walton Hill Fm
Walton Wood
Borough Fields
Oaklands Fm
Summerfields
Overfields Fm
Lads Grave
Roslston
Barn Fm
Park Fm
Stanton Ho
Royle Fm
Breach Fm
Morris Croft
Ashleigh Ho
Calves Croft Fm
Caldwell
Sewage Wks
Cadley Hill
Badger Wood
Coton Park
Field Ho
Blakenhall Fm
Longlands
Longfurlong Fm
Coton in the Elms
Botany Bay
Top Wood
Park Fm
0
1
2
km
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Map scale 1:5,000 @ A3
CB: EB:davies_h LUC 11477_INTRO_r0_A3L 02/10/2023
Source: South Derbyshire District Council, BayWa_OS