Green Hill Solar Farm
EN010170

Design Approach Document

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Issue Sheet

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DCO Submission

Design Approach Document

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Executive Summary

This Design Approach Document supports the application for a Development Consent Order (DCO) for the construction, operation, maintenance and decommissioning of a ground mounted solar energy generating station, energy storage facility, substations and grid connection (hereafter referred to as 'the Scheme'). The Applicant is Green Hill Solar Farm Limited, part of Island Green Power. The Scheme is located to the northeast and southeast of Northampton, and west and south of Wellingborough, within the administrative boundaries of North Northamptonshire, West Northamptonshire, and Milton Keynes.

The Scheme will make a significant contribution to the production, supply and storage of a renewable and more sustainable form of energy. This Design Approach Document has been provided to support the DCO application by describing the design evolution process adopted for the Scheme.

The Scheme design team is comprised of qualified and experienced professionals, including solar energy specialists, highway and drainage engineers, planners, landscape professionals, heritage specialists, ecologists, and other environmental specialists. The design team has worked collaboratively with the Applicant to develop the scheme design as well as collaboratively with local stakeholders, residents, and other consultees to ensure that the design has been informed by local knowledge and expertise.

The overarching vision for the development seeks to ensure that the Scheme contributes to renewable energy policy targets and objectives, which includes responding positively to the existing site context, baseline analysis and assessment of potential impacts. The Scheme seeks to deliver a design that positively responds to its locational context, delivers on the potential substantial benefits to energy production, climate change, and biodiversity enhancement, whilst keeping negative impacts on the local and wider environment to a minimum. Design objectives were set by the Applicant and the project team to meet these criteria. These were:

- Delivery of a significant amount of affordable, renewable energy to contribute to national targets for reducing carbon emissions to net zero by 2050;
- Delivery of improved energy resilience by diversifying energy production and storing energy for when it is needed most;
- Contribution towards strategic improvements to local ecology and biodiversity;
- Develop the Scheme sensitively to the surrounding landscape, limiting the impact on views for key landscape receptors, residential properties, and recreational routes;
- Develop the Scheme sensitively in response to the presence of heritage assets and their settings;
- Safeguard surrounding hydrological systems, and ensure the Scheme is resilient to flooding and will not increase flood risk elsewhere, taking account of the impacts of climate change; and
- Ensure the protection, and where possible enhancement, of existing Public Rights of Way and ensure the continued safe use of the public highway network.

1 Introduction

1.1 Context

1.1.1 This Design Approach Document supports the application for a Development Consent Order (DCO) for the construction, operation, maintenance and decommissioning of a ground mounted solar energy generating station, energy storage, substations, grid connection and associated development (hereafter referred to as 'the Scheme'). The Applicant is Green Hill Solar Farm Limited, which is part of Island Green Power.

1.1.2 The DCO application will be submitted under Section 37 of the Planning Act 2008 (the Act) (Ref.1) to the Secretary of State for Department for Energy Security and Net Zero. As the Scheme will have a generating capacity of over 50 MW of electricity it is defined as a Nationally Significant Infrastructure Project (NSIP) under 14(1)(a) and 15(2) of the Act.

1.1.3 This document has been prepared with reference to the following guidance documents:

- Design and Access Statement: How to Read, Write and Use Them, produced by CABE (2007) (Ref.2);
- Guidance on Information Requirements and Validation, published by the Department for Communities and Local Government (2010) (Ref.3); and
- National Infrastructure Commission's 'Design Principles for National Infrastructure' (Ref.4).

1.1.4 The Scheme will make a nationally significant contribution to the production, supply and storage of a renewable and more sustainable form of energy. This Design Approach Document has been provided to support the DCO application by describing the design evolution process adopted for the Scheme, culminating in the proposals which are the subject of the application. This document should therefore be read in conjunction with the DCO application documents as referenced in-text.

1.1.5 This Design Approach Document provides, in accordance with the Overarching National Policy Statement for Energy (2024) (NPS EN-1) (Ref.5), information regarding the context of the Scheme's location; how the design has evolved, including how it has been influenced by planning policy and stakeholder engagement; and the proposed outline design solution including access. This document sets out how the fundamental principle of good design has been embedded in the Scheme.

1.1.6 The spatial extent of the Scheme is referred to as the Order limits and is shown on the Works Plans **[EN010170/APP/GH2.4]** accompanying the DCO application which are secured by Article 3 of the Draft DCO **[EN010170/APP/GH3.1]**. The Environmental Impact Assessment (EIA) presented in the Environmental Statement (ES) **[EN010170/APP/GH6.1** to **EN010170/APP/GH6.5]** has been undertaken based on the maximum extents of each of the Work packages described in Schedule 1 to the Draft DCO as shown on the Works Plans. This approach is known as the use of a 'Rochdale Envelope' which is described in footnote 106 to paragraph 4.3.14 of NPS EN-1 as being an assessment that

"*establishes that while it is not necessary or possible in every case to specify the precise details of development, the information contained in the ES should be sufficient to fully assess the project's impact on the environment and establish clearly defined worst case parameters for the assessment*".

1.1.7 Due to the rapidly evolving technology within the solar photovoltaics and energy storage system sectors, the in-built flexibility allows for the most up-to-date technology to be utilised for the development of the Scheme. The full detail design at the point of construction will be managed post-consent through the Requirements set out in Schedule 2 of the Draft DCO **[EN010170/APP/GH3.1]**.

1.1.8 The Scheme design team is comprised of qualified and experienced professionals, including solar energy specialists, highway and drainage engineers, planners, landscape professionals, heritage specialists, ecologists, and other environmental professionals. The contributions of all disciplines have been crucial to informing the design approach to the Scheme. The design team has also worked collaboratively with stakeholders to ensure that the design was informed by local knowledge and expertise.

1.1.9 Further details regarding the need for the Scheme are provided in the Statement of Need **[EN010170/APP/GH7.12]** and Planning Statement **[EN010170/APP/GH7.15]**, and details of the site selection process are provided in ES Chapter 5: Alternatives and Design Evolution **[EN010170/APP/GH6.2.5]** and its associated Appendix 5.1 **[EN010170/APP/GH6.3.5.1]**.

1.2 Document Structure

1.2.1 The following sections comprise the remainder of this Design Approach Document.

Section 2: Design Policy and Guidance

1.2.2 This section sets out the policy context and guidance relating to large scale energy infrastructure including design objectives and strategies, and definitions of what constitutes 'good design'.

Section 3: Scheme Location and Context

1.2.3 Section 3 presents an overview of the Order limits and their surroundings. This section goes on to identify the characteristics and key environmental features that have informed the development of the Design Principles identified in the following section.

Section 4: Design Approach

1.2.4 This section establishes the overall vision and objectives that have guided and informed the iterative design process.

Section 5: Design Evolution

1.2.5 This section sets out the sequential and iterative development of the design, showing the evolution of the Scheme at the different project stages in response to the baseline information gathered from desk and field-based assessments, from feedback from stakeholders and ongoing design workshops.

Section 6: Design Masterplan

1.2.6 The Design Masterplan visually illustrates how the spatial design of the Scheme meets its objectives.

Section 7: Access

1.2.7 This section sets out the access strategy for construction and operational traffic to the Sites. This section also shows the existence of public rights of way, the nature of temporary diversions or closures, and the creation of new permissive paths as part of the Scheme.

Section 8: Commitments

1.2.8 This section explains how the delivery of the design features and commitments presented in this document will be secured by the DCO.

2 Design Policy and Guidance

2.1 Overview

2.1.1 This section considers guidance and policy relevant to the design of major energy infrastructure. This includes policies set out in the adopted and draft National Policy Statements for Energy, the National Planning Policy Framework (NPPF) and relevant local planning policy considered important and relevant to the Secretary of State's decision. Other sections of this Design Approach Document and supporting plans demonstrate how the Scheme complies with these policies, as supported by the Planning Statement **[EN010170/APP/GH7.15]** submitted as part of the DCO Application.

2.2 National Policy

National Policy Statements for Energy

2.2.1 National Policy Statements (NPS) for energy infrastructure were published by the Department for Energy Security and Net Zero in November 2023 and were designated in January 2024. The NPS set out the policy basis for energy NSIPs.

2.2.2 The Secretary of State must therefore decide the DCO application in accordance with following NPSs that have effect in respect of the Scheme:

- Overarching National Policy Statement for energy (EN-1), November 2023 (Ref.5);
- National Policy Statement for renewable energy infrastructure (EN-3), November 2023 (Ref.6). and
- National Policy Statement for electricity networks infrastructure (EN-5), November 2023 (Ref.7).

2.2.3 NPS EN-1 sets out the national policy for delivering major energy infrastructure in England and Wales. NPS EN-1 confirms there is a critical national priority for low carbon and renewable energy infrastructure, including large-scale solar development. Solar projects are essential in the UK's energy landscape, particularly in achieving renewable energy targets set by key Government policies such as the NPSs.

2.2.4 NPS EN-1 outlines that the Secretary of State should give '*substantial weight*' to the contribution that projects would make toward satisfying this need when considering applications for development consent.

2.2.5 NPS EN-3 provides the primary basis for informing the Secretary of State's decisions on nationally significant renewable energy infrastructure applications. NPS EN-3 includes specific policy on solar photovoltaic generation at Section 2.10 covering key areas such as need, site selection and design, assessment of impacts and mitigation.

2.2.6 Paragraph 2.5.2 states: "*Proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence/ co-location with other marine and terrestrial uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage*."

2.2.7 Section 2.10 of EN-3 sets out the influencing factors on the design of solar farms. Paragraph 2.10.59 states that "*Applicants should consider the criteria for good design set out in EN-1 Section 4.7 at an early stage when developing projects*".

2.2.8 NPS EN-5 forms part of the wider suite of energy NPSs, focusing on the electricity network infrastructure required to support renewable energy infrastructure applications.

National Planning Policy Framework

2.2.9 In December 2024 the UK Government published the revised National Planning Policy Framework (NPPF) (Ref.8). This version replaced the December 2023 Framework. The NPPF sets out the Government's economic, social and environmental planning policies for England.

2.2.10 NPPF Paragraph 5 sets out that the document does not contain specific policies for NSIPs and that applications in relation to NSIPs are to be determined in accordance with the decision-making framework set out in the Planning Act 2008 and relevant NPSs, as well as any other matters that are relevant.

2.2.11 Paragraph 161 states that "*The planning system should support the transition to net zero by 2050 and take full account of all climate impacts … and support renewable and low carbon energy and associated infrastructure"*.

2.2.12 Paragraph 168 states that, when determining planning applications for all forms of renewable and low-carbon energy developments and their associated infrastructure, local planning authorities should "*give significant weight to the benefits associated with renewable and low-carbon energy generation and the proposal's contribution to a net zero future*".

Planning Practice Guidance: Renewable and low carbon energy, as amended August 2023

2.2.13 The National Planning Practice Guidance (Ref.9) should be read in conjunction with the NPPF. It provides detailed guidance on various aspects of planning policy.

2.2.14 National Planning Practice Guidance supports the policies set out within the NPPF. The guidance on 'Renewable and Low Carbon Energy' sets out at paragraph 013 (reference ID: 5-013-20150327):

> *"The deployment of large-scale solar farms can have a negative impact on the rural environment, particularly in undulating landscapes. However, the visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if planned sensitively."*

2.2.15 The guidance on renewable and low carbon energy was updated in August 2023 to acknowledge Battery Energy Storage Systems (BESS) and the potential benefits of BESS as referenced in paragraph 032 (reference I: 5-032-20230814) "*to use energy more flexibly and de-carbonise our energy system cost-effectively*".

2.2.16 One planning consideration set out by the guidance in relation to large scale ground-mounted solar photovoltaic farms is that solar developments are normally temporary structures and planning conditions can be used to ensure that the

installations are removed when no longer in use and the land is restored to its previous use as set out in paragraph 013 (reference ID: 5-013-2015032) .

2.2.17 Other factors for solar farms to consider include care to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting; the potential to mitigate landscape and visual impacts through, for example, screening with native hedges; and the energy generating potential, which can vary for several reasons including latitude and aspect as set out in paragraph 013 (reference ID: 5-013-2015032).

2.3 Local Policy

2.3.1 The below section provides an overview of design related policy identified within the relevant local development plans and neighbourhood plans. No supplementary design guidance documents have been identified as relevant to the Scheme due to its non-residential nature.

North Northamptonshire

- North Northamptonshire Joint Core Strategy 2011-2031 (Adopted 2016) (Ref.10);
- Wellingborough Local Plan Part 2 (Adopted 2019) (Ref.11); and
- Emerging North Northamptonshire Local Plan (Issues and Scope Consultation, March 2022) (Ref.12).

West Northamptonshire

- West Northamptonshire Joint Core Strategy Local Plan Part 1 (Adopted 2014) (Ref.13);
- Daventry Local Plan 2011-2029 Part 2 (Adopted 2020) (Ref.14); and
- Emerging West Northamptonshire Local Plan (public consultation on Regulation 18 draft local plan, April to June 2024) (Ref.15).

Milton Keynes City

- Milton Keynes Plan: MK 2016 to 2031 (Adopted 2019) (Ref.16); and
- Emerging MK City Plan 2050 (public consultation on Regulation 18 local plan, July 2024) (Ref.17).

2.4 Industry Guidance

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

2.4.1 Design Principles for National Infrastructure (Ref.18) are a set of key design principles developed by the National Infrastructure Commission's (NIC) design group to guide the planning and delivery of major infrastructure projects. These key principles are:

- Climate: Mitigate carbon emissions and adapt to climate change;
- People: Reflect what society wants and share benefits widely;

- Places: Provide a sense of identity and improve our environment; and
- Value: Achieve multiple benefits and solve problems well.

2.4.2 These principles aim to promote a holistic approach to infrastructure design that improves environmental performance whilst focussing design measures around improving the scope of beneficial impacts infrastructure can bring.

Solar Energy UK: 11 Commitments on Solar Farms

2.4.3 Solar Energy UK is a non-profit trade association which represents a significant portion of the UK's solar energy businesses. Members of the association are expected to comply with best practice industry guidance through the adoption of 11 key commitments on their solar sites (Ref.19). Those related directly to design are:

- For design measures to enhance the biodiversity and natural capital value of all solar sites;
- Being sensitive and complementing nationally and locally protected landscapes and nature conservation areas;
- Deliver multi-functional land use by proposing co-location with agriculture and/or nature recovery projects for solar and energy storage developments;
- Accommodate needs for rights of way and sites of archaeological importance; and
- To minimise visual impact where possible, making visual enhancements, and including appropriate screening.

Building Research Establishment: Planning guidance for the development of large-scale ground mounted solar PV system (2014)

2.4.4 The Building Research Establishment (BRE) provides research, advice, training, testing, certification and standards for both public and private sector organisations in the UK and abroad within the construction sector.

2.4.5 BRE have published guidance on the development of large-scale solar farms (Ref.20), which addresses documents that need to be provided within a planning application, as well as relevant considerations to the determination of planning applications for large scale solar.

3 Scheme Location and Context

3.1.1 This section outlines the existing setting and key features of the Sites and surrounding area.

3.1.2 The design process involved identifying both opportunities and constraints related to the Site's landscape character, green infrastructure, ecology and biodiversity, hydrology, access and movement, and cultural heritage. These insights were gathered through a combination of detailed desk-based research and on-site surveys. These site characteristics have directly influenced the design of the Scheme.

3.2 Order Limits and Locational Context

3.2.1 The Scheme comprises a total of 1,441.4 hectares (ha). The Scheme is located at the tripoint of the East of England, East Midlands and the South east, within the boundary of three unitary authorities, these being North Northamptonshire, West Northamptonshire and Milton Keynes.

3.2.2 The Scheme is located between settlements to the west and south of Wellingborough and north and south east of Northampton, near to the villages of Old, Walgrave, Mears Ashby, Earls Barton, Bozeat, Grendon and Lavendon, on fields located within a 20 kilometre (km) radius from Grendon Substation.

3.2.3 The Scheme consists of nine distinct Sites known as Green Hill A, A.2, B, C, D, E, F, G, and BESS, connected to each other and to the grid connection point at Grendon National Grid Substation, by underground cables, to be located within the Cable Route Corridor. These are collectively referred to as 'the Sites'.

3.2.4 The Sites are largely characterised by agricultural fields, hedgerows and scattered trees and occasional areas of woodland.

3.2.5 The Order limits and scheme location are shown in **Location Plan [EN010170/APP/GH2.1].**

3.2.6 A full description of the Sites is set out at ES Chapter 3: The Development Site **[EN010170/APP/GH6.2.3]**. A detailed appraisal of the baseline conditions issues is presented in the technical assessments of the Environmental Statement **[EN010170/APP/GH6.2.7 to GH6.2.25].** The following provides an initial description of the sites north to south within the Scheme and surrounding area.

3.2.7 The following figures support the locational context of the Scheme:

- Figure 8.5: Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**;
- Figures 9.3.1 to 9.3.7 of Appendix 9.3: Desk Study **[EN010170/APP/GH6.3.9.3]**;
- Figures 11.1 to 11.5 Mineral Resources **[EN010170/APP/GH6.4.11.1 to GH6.4.11.5]**;
- Figures 12.1.1 to 12.1.6 Designated and Non-designated Heritage Assets Scoped in for Assessment **[EN010170/APP/GH6.4.12.1.1 to GH6.4.12.1.6]** ; and
- Figure 20.2 Agricultural Land Classification **[EN010170/APP/GH6.4.20.2].**

Green Hill A

3.2.8 Green Hill A is situated in the parishes of Old and Walgrave in West Northamptonshire. Green Hill A is located approximately 300m east of Old and 600m north of Walgrave.

3.2.9 Green Hill A consists of two groups of agricultural fields in the parishes of Old and Walgrave, within the West Northamptonshire Council area. The land is characterised by fields separated by hedgerows and scattered trees. Surrounding Green Hill A, the landscape is similar to the agricultural farmland contained within the site itself, delineated by low hedge lines and treed hedgerows, with the occasional scattered wooded block.

3.2.10 Broughton Road forms the northern boundary of the site, connecting to Newland Road, which runs to Walgrave. Walgrave Road, south west of the site, becomes Old Road, linking the villages of Old and Walgrave. A Public Right of Way (PRoW), footpath NN|DF|4, lies near the western edge of Green Hill A and runs northeast to Mawsley.

3.2.11 The nearest main river to Green Hill A is an unnamed river which lies 800m to the west and runs into the Scaldwell arm of Pitsford Water. The entirety of Green Hill A is situated in Flood Zone 1, indicating a very low risk of fluvial flooding.

3.2.12 There is a cluster of 17 listed buildings at Old village to the west of Green Hill A, the nearest being the Grade II listed Jasmine Cottage (National Heritage List for England (NHLE) 1376865), approximately 130m west from Green Hill A. There is a cluster of 10 listed buildings at Walgrave to the south of Green Hill A, the nearest being the Grade II listed North Hall (NHLE 1203361), approximately 615m from Green Hill A southern boundary. White Lodge Farmhouse, approximately 320m to the east of Green Hill A is a Grade II listed building (NHLE 1203302). Walgrave Moated scheduled monument (NHLE 1011036) is located approximately 500m to the south of Green Hill A. Two parts of the abandoned areas of Walgrave Medieval Village Scheduled Monument (NHLE 1418583) are located approximately 865m to the south, and 900m to the south east of Green Hill A respectively.

3.2.13 Pitsford Reservoir site of Special Scientific Interest (SSSI) is located approximately 1.33km (at the closest point) south west of Green Hill A and the closest Local Wildlife Site (LWS) is Walgrave East Meadow located 600m southeast of Green Hill A. Broughton Green Lane LWS lies approximately 700m to the east, while Old Poors Gorse LWS is about 900m to the north of Green Hill A.

3.2.14 Green Hill A is located within two of the National Character Areas (NCA's) as illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]** and defined by Natural England as NCA Profile: 89 Northamptonshire Vales (NE527), and NCA Profile: 95 Northamptonshire Uplands (NE565). Green Hill A is located within one Landscape Character Type (LCT), LCT 5 Clay Plateau which contains one Landscape Character Area (LCA), LCA 5b Sywell Plateau, as defined by Northamptonshire Council Current Landscape Character Assessment 2010 and illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**.

3.2.15 The majority of Green Hill A lies within two Minerals Safeguarding Areas (sand and gravel) as defined in the adopted Northamptonshire Minerals and Waste Local Plan (2017) (Ref.21).

Green Hill A.2

3.2.16 Green Hill A.2 is approximately 900m east of Walgrave and 900m north east of Hannington. Rectory Farm and New Lodge Farm border the site.

3.2.17 Green Hill A.2 consist of two groups of agricultural fields in the parishes of Old and Walgrave, within the West Northamptonshire Council area. The landscape surrounding Green Hill A.2 is similar to the agricultural farmland contained within the site itself, delineated by low hedge lines and treed hedgerows, with the occasional scattered wooded block.

3.2.18 Green Hill A.2 is bordered by Kettering Road to the north and the A43 to the east. The nearest bridleway (NN|CT|3) runs south of the site.

3.2.19 Hold Farm Airstrip lies approximately 500m south east of Green Hill A.2.

3.2.20 Green Hill A.2 lies entirely within Flood Zone 1, indicating a very low risk of fluvial flooding.

3.2.21 The Grade II listed Pytchley Lodge lies 1km north east, and a Medieval Village Scheduled Monument is situated approximately 700m west of Green Hill A.2.

3.2.22 The nearest block of Ancient Woodland is Badsaddle Wood (ancient and semi-natural woodland), located 308m east of Green Hill A.2.

3.2.23 Two SSSIs, Badsaddle, Withmale Park, and Bush Walk Woods, located approximately 300 to 900m to the east and southeast of Green Hil A.2.Walgrave East Meadow LWS is approximately 150m west of Green Hill A.2 and comprises a diverse grassland with streams and rush pasture. Highcroft Farm Meadow is located 500m to the north of Green Hill A.2.

3.2.24 Green Hill A.2 is located within one NCA as illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]** and defined by Natural England as NCA Profile: 89 Northamptonshire Vales (NE527).Green Hill A.2 is located within one LCT, LCT 5 Clay Plateau which contains one LCA, LCA 5b Sywell Plateau, as defined by Northamptonshire Council Current Landscape Character Assessment 2010 and illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**.

3.2.25 Most of Green Hill A.2, along with Green Hill A, lies within Minerals Safeguarding Areas for sand and gravel, as designated in the Northamptonshire Minerals and Waste Local Plan (2017).

Green Hill B

3.2.26 Green Hill B is located within the parish of Holcot in West Northamptonshire, approximately 850m south of Holcot and 1.2km north east of Moulton.

3.2.27 Green Hill B consists of agricultural fields separated by hedgerows, with some woodland in the western part. The landscape surrounding Green Hill B is similar to the agricultural farmland contained within the site itself, delineated by a mix of

low hedge lines, outgrown and treed hedgerows, and the occasional scattered wooded block.

3.2.28 Green Hill B is bordered by Holcot Road to the west, which becomes Moulton Road near the northern boundary. A private entrance to Tithe Farm Barns connects from Moulton Road, while another access route from Sywell Road runs past the eastern boundary of Green Hill B toward the A43 at New Inn Spinney. A public footpath (NN|CW|1) passes the easternmost part of Green Hill B, heading north to Holcot and south into Overstone parish, where it becomes NN|DG|2.

3.2.29 Green Hill B lies entirely within Flood Zone 1, indicating a very low risk of fluvial flooding.

3.2.30 There is a cluster of eight listed buildings at the village of Holcot, including Pollys Cottage (Grade II, 725 m northeast), the Church of St Mary and All Saints (Grade I, 750 m northeast), and The Old Farmhouse and Attached Stables (Grade II, 500 m southeast). Overstone Old Rectory (275 m southeast) and Rectory Farmhouse (70 m southeast) are also Grade II listed.

3.2.31 Pitsford Reservoir SSSI, located 800m to the north west, supports a wide variety of bird species and diverse plant life. Hog Hole Spinney LWS, 1.1km south west, is a broadleaved woodland with a dense understorey.

3.2.32 Green Hill B is located within two of the NCA's as illustrated on Volume 2, Figure 8.5 **[EN010170/APP/GH6.4.8.5]** and defined by Natural England as NCA Profile: 89 Northamptonshire Vales (NE527), and NCA Profile: 95 Northamptonshire Uplands (NE565).Green Hill B is located within one LCT, LCT 5 Clay Plateau which contains one LCA, LCA 5b Sywell Plateau, as defined by Northamptonshire Council Current Landscape Character Assessment 2010 and illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**.

3.2.33 The western half of Green Hill B lies within a Minerals Safeguarding Area for sand and gravel, as designated in the Northamptonshire Minerals and Waste Local Plan (2017).

Green Hill C

3.2.34 Green Hill C is located within parishes of Sywell and Mears Ashby in North Northamptonshire, approximately 1km north east of Sywell. The land features medium-sized fields separated by hedgerows and substantial tree belts, and it is adjacent to Sywell Wood.

3.2.35 Green Hill C is bordered to the south by Wellingborough Road, which provides gated access to the adjacent Sywell Solar Farm. A bridleway (NN|TN|7) runs through the site and forms part of the Northamptonshire Round walking route.

3.2.36 The site is adjacent to Sywell Aerodrome, the approach to grass runway 23 is taken directly over the western half of Green Hill C, with An approximate distance of 120m between the boundary of Green Hill C and the runway end. William Pitts Airstrip is located 900m east of Green Hill C.

3.2.37 Green Hill C lies entirely within Flood Zone 1, indicating a very low risk of fluvial flooding.

3.2.38 The nearest Conservation Area is in Sywell, 1 km south west of Green Hill C.

3.2.39 Sywell Wood, an ancient woodland, borders the site to the north of Green Hill C.

3.2.40 Green Hill C is located within one NCA's as illustrated on Volume 2, Figure 8.5 **[EN010170/APP/GH6.4.8.5]**, and defined by Natural England as NCA Profile: 89 Northamptonshire Vales (NE527). Green Hill C is located at the southeastern edge of the NCA Profile: 89 Northamptonshire Vales and borders NCA Profile: 91 Yardley Whittlewood Ridge.

3.2.41 Green Hill C is located within one LCT, LCT 5 Clay Plateau which contains one LCA, LCA 5b Sywell Plateau, as defined by Northamptonshire Council Current Landscape Character Assessment 2010 and illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**.

3.2.42 The nearest nationally designated site is Hardwick Lodge Meadow SSSI, located 1.5 km north of Green Hill C. The closest LWS is Hardwick Wood, also 1.5 km north of Green Hill C, which consists of ancient woodland that has been replanted with oak and spruce.

Green Hill D

3.2.43 Green Hill D is located within the parish of Mears Ashby in North Northamptonshire, immediately to the north of the village of Mears Ashby. The site consists of agricultural fields separated by hedgerows and scattered trees, with a more established tree belt along the western boundary.

3.2.44 Green Hill D is bordered to the east by Highfield Road, which connects with Moonshine Gap and Wellingborough Road, the latter also forming part of the northern boundary. A public footpath (NN|TN|3) runs north–south through the centre of the site, continuing north as NN|TG|4 toward Hardwick.

3.2.45 Sywell Aerodrome lies 1.1km west, and William Pitts Airstrip is 400m east of Green Hill D.

3.2.46 Most of Green Hill D lies within Flood Zone 1, indicating low fluvial flood risk, though a small area on the southwestern boundary falls within Flood Zone 3.

3.2.47 The Mears Ashby Conservation Area is located 115m south west of Green Hill D, with 29 listed buildings, including Manor Farmhouse (Grade II, 175 m away) and two Grade II* buildings: Church of All Saints and Mears Ashby Hall.

3.2.48 The closest ancient woodland is Sywell Wood, 770m northwest of Green Hill D.

3.2.49 The nearest nationally designated ecological site is Hardwick Lodge Meadow SSSI, located 1.7 km northwest of Green Hill D. The closest locally designated ecological site is Sywell Reservoir and Country Park LWS, situated 1.2 km south of Green Hill D.

3.2.50 Green Hill D is located within one NCA as illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]** and defined by Natural England as NCA Profile: 89 Northamptonshire Vales (NE527). Green Hill D is located within one LCT, LCT 5 Clay Plateau which contains one LCA, LCA 5b Sywell Plateau, as defined by Northamptonshire Council Current Landscape Character Assessment 2010 and illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**.

Green Hill E

3.2.51 Green Hill E is located within the parish of Mears Ashby in North Northamptonshire, approximately 900m north of Earls Barton. The site features agricultural fields separated by hedgerows and scattered trees, with some woodland parcels, including Wilby Spinney along the eastern boundary of Green Hill E.

3.2.52 Mears Ashby Road forms the western boundary of Green Hill E. This road meets the A4500 Main Road near the southern boundary of Green Hill E.

3.2.53 Several footpaths pass through or near Green Hill E. Footpath NN|TN|1 runs north from Mears Ashby Road to Mears Ashby village and, along with NN|TN|2, provides access to Sywell Country Park and Reservoir. Footpath NN|TU|3, which connects to NN|UL|24, links Wilby Hall to Cromwell Spinney at the northern edge of Green Hill E. A byway, NN|TN|10, extends 200m from Mears Ashby but ends before reaching Green Hill E.

3.2.54 The William Pitt Airstrip, a grass airstrip, is located west of Green Hill E.

3.2.55 The majority of Green Hill E lies in Flood Zone 1, but parts of fields EF23, EF33, EF9, and EF10 fall within Flood Zone 3.

3.2.56 The Mears Ashby Conservation Area is 67m west of Green Hill E, and the Earls Barton Conservation Area is around 700m to the south of Green Hill E. Mears Ashby has 29 listed buildings, including the Grade II* Church of All Saints and Mears Ashby Hall. The nearest listed buildings are The Old Farmhouse (50m west) and 5, Duchess End (60m south). Earls Barton has 35 listed buildings, including the Grade I Church of All Saints. Sandpit Barn, a Grade II listed building, is 450m east of Green Hill E.

3.2.57 The Scheduled Monument of Earls Barton motte castle is located 1.5km south of Green Hill E. The nearest Registered Park and Garden is the Castle Ashby Estate, situated 3.6km to the south.

3.2.58 The nearest block of Ancient Woodland to Green Hill E is Sywell Wood, an ancient, replanted woodland located 1.5km to the north west.

3.2.59 The nearest nationally designated site is Hardwick Lodge Meadow SSSI, located 2.5km north west, comprising diverse permanent pasture that supports rare flora and invertebrates. The closest locally designated sites are Sywell Reservoir and Country Park LWS, 350m west, which includes a reservoir and a mosaic of habitats; and Wilby Meadows Stream LWS, 700m east, which encompasses a section of Wilby Brook flowing through farmland habitats connected to the watercourses along the southern boundary of Green Hill E.

3.2.60 Green Hill E is located within one NCA as illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]** and defined by Natural England as NCA Profile: 89 Northamptonshire Vales (NE527).Green Hill E is located within two LCTs and two LCAs. These include LCT 5 Clay Plateau which contains LCA 5b Sywell Plateau, and LCT 4 Rolling Ironstone Valley Slopes which contains LCA 4c Ecton and Earls Barton Slopes as defined by Northamptonshire Council Current Landscape Character Assessment 2010 and illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**.

Green Hill BESS

3.2.61 Green Hill BESS is located within the parish of Grendon, North Northamptonshire, approximately 600m northwest of Grendon. Green Hill BESS is adjacent to the existing National Grid Substation at Grendon.

3.2.62 The two agricultural fields of Green Hill BESS are bounded by substantial hedgerows and tree belts, located entirely within the parish of Grendon. The site is dominated by the Grendon electrical substation, which has a large footprint in the landscape. The substation is formed by a collection of primary power lines, transformers, circuit breakers, control buildings, security fencing and secondary power lines.

3.2.63 Station Road runs along the southwestern edge of Green Hill BESS, connecting the site to Grendon. It provides access to the Grendon Substation and agricultural land at Pastures Farm.

3.2.64 Footpath NN|TF|3 runs adjacent to the northern side of Green Hill BESS, starting near the bridge over the River Nene on Station Road. It passes north of the site and continues toward Lower End in Grendon.

3.2.65 A direct rainfall modelling methodology was undertaken in January 2024 to assess the fluvial flood risk to the Green Hill BESS from neighbouring sections of the River Nene and Grendon Brook, given the small size of the catchment. Given the locations of the proposed BESS developments, excluding the north-east of BESS1, the site is considered to be at Low risk of fluvial flooding.

3.2.66 Grendon Conservation Area lies approximately 530m southeast of Green Hill BESS. Within the village of Grendon, there are 29 listed buildings. The nearest is the Grade II listed Gates and Gatepiers near Grendon Hall, located 590m east of the site. Grendon Hall and the Church of St Mary are both Grade II* listed. Additionally, Station Lodge, a Grade II listed building, is situated approximately 200m west of the site.

3.2.67 A Scheduled Monument, the Medieval Cross near Hall Farm, is located 770m east of Green Hill BESS. Furthermore, the Grade I Registered Park and Garden of Castle Ashby is approximately 30m southwest of Green Hill BESS.

3.2.68 The site is located within one NCA as illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]** and defined by Natural England as NCA Profile: 89 Northamptonshire Vales (NE527).The site is located at the southeastern edge of the NCA Profile: 89 Northamptonshire Vales and borders NCA Profile: 91 Yardley Whittlewood Ridge. The site is located within two LCTs as defined by Northamptonshire Council Current Landscape Character Assessment 2010 and illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**.

3.2.69 The Upper Nene Valley Gravel Pits SPA and Ramsar site shares its northern boundary with Green Hill BESS. This internationally designated site comprises a 35 km stretch of former sand and gravel pits along the River Nene floodplain. It supports over 20,000 wildfowl and wading birds, including species such as bittern, golden plover, and gadwall, making it a site of major ecological importance. The closest locally designated sites are Grendon Lakes LWS and Grendon Lakes North LWS, situated 200m and 500m north of the site

respectively. Grendon Quarter Pond LWS, is located 500m south, is a fishing lake with marginal vegetation.

3.2.70 Green Hill BESS lies within a Minerals Safeguarding Area for sand and gravel, as designated in the Northamptonshire Minerals and Waste Local Plan (2017).

Green Hill F

3.2.71 Green Hill F is located within the parishes of Easton Maudit and Bozeat in North Northamptonshire, close to the village of Easton Maudit and approximately 300m west of the village of Bozeat. Green Hill F consists of agricultural fields in the parishes of Easton Maudit and Bozeat, entirely within North Northamptonshire. The area features irregularly shaped fields bounded by hedgerows and scattered trees, with gently rolling hills separated by small streams.

3.2.72 Green Hill F is split by Grendon Road, which connects Grendon to Easton Maudit. This road continues as Easton Lane, running between Easton Maudit and Bozeat, crossing the site again. The A509 borders Green Hill F in three places along its eastern side.

3.2.73 There are several footpaths crossing Green Hill F. Footpaths NN|TA|1, NN|TA|4~1, NN|TD|2, NN|TD|3, NN|TF|5, all cross the northern extent of Green Hill F. To the south, NN|TD|5 and NN|TD|7 cross Green Hill F. A bridleway, NN|TD|8, also crosses Green Hill F.

3.2.74 Easton Maudit Airfield is a private grass strip associated with Home Farm, immediately adjacent to the boundary of Green Hill F. The runway is situated approximately 50m north-north west of fields FF29 and FF30. Due to the runway orientation and the shape of Green Hill F, the approach to the runway from either direction involves flying over Green Hill F.

3.2.75 The majority of Green Hill F lies within Flood Zone 1, indicating a low risk of flooding. However, sections of several fields, particularly in the north are indicated to be within Flood Zone 3.

3.2.76 Easton Maudit Conservation Area is approximately 10m east from the site, and Grendon Conservation Area is approximately 850m north west. Nearby villages, Easton Maudit, Grendon, and Bozeat have clusters of listed buildings. The closest is Home Farmhouse, 10m from the site. A Scheduled Monument, Easton Lodge, is 25m south of Green Hill F. Castle Ashby, a Grade I Registered Park and Garden, is 750m west of the site.

3.2.77 Horn Wood, an ancient and semi-natural woodland, lies directly next to the southeastern edge of Green Hill F.

3.2.78 The site is located within one National Character Area (NCA) as illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]** and defined by Natural England as NCA Profile: 54 Yardley-Whittlewood Ridge (NE501).The site is located at the northern portion edge of the NCA Profile: 54 Yardley-Whittlewood Ridge and borders NCA Profile: 89 Northamptonshire Vales and NCA Profile: 88 Bedfordshire and Cambridgeshire Claylands, both within 2km of the site. The site is located within three LCTs which contain three LCAs as defined by Northamptonshire Council Current Landscape Character Assessment 2010 and illustrated on Figure 8.5 Landscape Character Areas

[EN010170/APP/GH6.4.8.5]. These include; LCT 12 Limestone Valley Slopes, which contains LCA 12a Wollaston to Irchester; LCT 6 Undulating Claylands which contains 6c Bozeat Claylands; and LCT 8 Low Wooded Clay Ridge, which contains LCA 8b Salcey Forest and Yardley Chase.

3.2.79 The Upper Nene Valley Gravel Pits SPA and Ramsar site is located 2.13km northwest of Green Hill F. The closest nationally designated ecological site is Bozeat Meadow SSSI is 70m east of Green Hill F, and features species-rich grassland on medieval ridge and furrow. Several locally designated ecological sites lie within 1km of Green Hill F; these include species-rich grasslands such as Bozeat Cemetery (280m east), Bozeat Glebe Meadow (510m east), and Bozeat Verge (15m south), as well as woodlands like Bozeat Wood (620m southeast) and Cold Oak Copse (310m west). Several county wildlife sites and LWS are located within 1km, including Horn Wood (adjacent to Green Hill F), Long Furlong and Old Pastures (490m southwest), and Yardley Brook Field (590m west).

Green Hill G

3.2.80 Green Hill G is located within the parishes of Warrington and Lavendon in Milton Keynes, approximately 500m northwest of Lavendon. Green Hill G lies entirely within the City of Milton Keynes, near the tripoint of North Northamptonshire, Milton Keynes, and Bedford Borough. It features open agricultural fields separated by hedgerows and scattered trees, with substantial woodland (Threeshire Wood) to the northeast.

3.2.81 Green Hill G is bordered by two major roads: the A509 to the west and the A428 to the south. These roads meet at Warrington Toll Bar Roundabout and continue southeast toward Lavendon. The A428 connects Bedford and Northampton, while the A509 links Wellingborough and Milton Keynes. Tinick Lane, a smaller access road, branches off the A428 and enters Green Hill G 750m along its southern edge.

3.2.82 Several bridleways and footpaths run through and around Green Hill G. Bridleways MK|Lavendon|002 and MK|Lavendon|015 follow the eastern boundary and form part of the Three Shires Way. Other bridleways connect to Castle Road along the northern edge. A footpath from Northey Farm crosses the centre of the site and links to Lavendon, forming part of the Milton Keynes Boundary Walk.

3.2.83 Easton Maudit Airfield is the nearest airfield, located 2.4 km northwest of Green Hill G.

3.2.84 Most of the site is in Flood Zone 1, but a small area along the southern boundary is in Flood Zone 3.

3.2.85 Lavendon Conservation Area is 575m south east of Green Hill G. The village of Lavendon contains 13 listed buildings, including the Grade I Church of St Peter and St Michael. Lavendon Grange, with five Grade II listed buildings, is 845m southeast. Other nearby listed buildings include Home Farmhouse and Warrington House Farm to the southwest. Three Scheduled Monuments are located within 1km of Green Hill G: Lavendon Castle (300m east), The Bury

(600m southeast), and Lavendon Abbey (550m south), the nearest registered park is Turvey House (Grade II), located 2.6 km south east.

3.2.86 Green Hill G is directly bordered to the northeast by two ancient and semi-natural woodlands: Three Shire Wood and Nun Wood.

3.2.87 The site is located in two NCAs as illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**:

- 91 Yardley-Whittlewood Ridge; and
- 88 Bedfordshire and Cambridgeshire Claylands.

3.2.88 The site is located within two LCTs as defined by Milton Keynes Landscape Character Assessment 2022 as illustrated on Figure 8.5 Landscape Character Areas **[EN010170/APP/GH6.4.8.5]**. These include;

- Milton Keynes LCT 1 Wooded Wolds; and
- Milton Keynes LCT 2 Undulating Valley Slopes

3.2.89 The closest locally designated site is Nun Wood County Wildlife site, which lies adjacent to the northeastern boundary of Green Hill G. Threeshire Wood, is also adjacent to Green Hill G and is an ancient semi-natural woodland with a rich ground flora. Additional sites within 1km include The Slipe County Wildlife site (500m north east), a broadleaved, semi-natural ancient woodland; Bozeat Wood (300m north), a small oak-ash woodland likely of ancient origin; and Long Furlong and Old Pastures (900m west), a large area of replanted ancient woodland.

3.2.90 The southern edge of Green Hill G lies within two Mineral Safeguarding Areas for sand and gravel and limestone, as defined in the Milton Keynes Minerals Local Plan (2017).

Additional Areas within the Order Limits

3.2.91 The Order limits contain the land area required to develop, operate, maintain and decommission the Scheme. As such, these also include all access points and visibility splays.

3.2.92 The Order Limits also include the Cable Route Corridor which connects the sites to the Point of Connection at Grendon Substation, further detail on the routeing and environmental sensitivities is detailed in Chapter 3: The Development site **[EN010170/APP/GH6.2.3]**.

3.3 Renewable Energy Constraints and Opportunities

3.3.1 The characteristics of the land and the scheme location are well suited for the generation of renewable solar energy. The land is predominantly gently sloping, and predominantly (or capable of being) well screened from short- and long-range views. The Scheme is located in an area of the UK with good levels of solar irradiance, allowing the Scheme to efficiently produce energy. The Sites are well connected to the local highway network, allowing suitable construction and maintenance access. The Scheme is also located favourably close to a National Grid connection point with sufficient capacity.

3.3.2 The Scheme encompasses a number of design practices which are detailed within Section 8 of this document, which identifies a series of design commitments to be secured as part of the DCO.

3.4 Context Mapping

3.4.1 The Scheme has been subject to a desk-based review of constraints and features in the local context.

3.5 Landscape Character and Green Infrastructure

3.5.1 There are no national landscape designations such as National Parks or National Landscapes, contained within the Order Limits or within 5km of the Scheme.

3.5.2 The Sites are located within four of the NCAs as defined by Natural England (Ref.22) and as illustrated on Volume 2, Figure 8.5 **[EN010170/APP/GH6.4.8.5]**:

- NCA Profile: 95 Northamptonshire Uplands (NE565);
- NCA Profile: 89 Northamptonshire Vales (NE527);
- NCA Profile: 91 Yardley-Whittlewood Ridge (NE501); and
- NCA Profile: 88 Bedfordshire and Cambridgeshire Claylands (NE555).

3.5.3 The Scheme is located within eight Regional LCT as defined by Northamptonshire Council Current Landscape Character Assessment 2010 (Ref.23) and Milton Keynes Landscape Character Assessment 2022 (Ref.23) as illustrated on Volume 2, Figure 8.5 **[EN010170/APP/GH6.4.8.5]** :

- Northamptonshire LCT 5 Clay Plateau;
- Northamptonshire LCT 4 Rolling Ironstone Valley Slopes;
- Northamptonshire LCT 18 Broad River Valley Floodplain;
- Northamptonshire LCT 12 Limestone Valley Slopes;
- Northamptonshire LCT 8 Low Wooded Clay Ridge;
- Northamptonshire LCT 6 Undulating Claylands;
- Milton Keynes LCT 1 Clay Plateau Farmland; and
- Milton Keynes LCT 5 Undulating Clay Farmland.

3.5.4 The Outer 5km Study Area is located within a further six LCTs defined by the Northamptonshire Landscape Character Assessment 2010, Milton Keynes Landscape Character Assessment 2022 (Ref.23) and Bedford Borough Landscape Character Assessment 2020 (Ref.24) The Outer 5km Study Area contains areas defined as ‘Urban' which is associated with large settlements including Wellingborough and Northampton.

3.5.5 The Applicant has followed a step-by-step site selection process which confirms the location of the Scheme is suitable for a large-scale solar farm. This has included the avoidance of sensitive landscape and environmental designations in confirming site suitability and consideration of alternative sites. Details of the process are set out within the ES at Appendix 5.1: Site Selection Assessment **[EN010170/APP/GH6.3.5.1]**.

3.5.6 The following priorities have influenced the design of the Scheme:

- Proximity of residential properties – with a proposed minimum 50m offset to curtilage boundary; and
- Identification of key visual receptors and key views.

3.5.7 Taking into account the baseline conditions, a number of opportunities for landscape and green infrastructure enhancement have been identified within the Order limits.

3.5.8 The Scheme offers significant opportunities for tree and hedgerow planting, as well as the enhancement of existing hedgerows, in line with local conservation priorities, national targets and to mitigate minor impacts to hedgerow habitat arising from the Scheme. Strengthening the local hedgerow network will significantly enhance the area for bat species, as well as birds and invertebrates, and contribute to local green infrastructure.

3.5.9 Where hedgerows and field-edge tree belts across the Order Limits are fragmented or of a poorer quality, these can be improved through new supplementary planting and management of existing hedges to improve visual screening and ecological value. Within this, opportunity could be sought to diversify the age and species of the planting, whilst improving the provision of native species.

3.5.10 Whilst care has been given to exclude areas of greater landscape and ecological value from the Order limits, there are a number of valuable landscape features, such as woodland blocks and watercourses, that are within, bordered by, or encircled by the Order limits. The Scheme has therefore sought to avoid and reduce effects on such elements through adherence to minimum offsets and seeks to enhance these where practicable. These offsets have been determined through baseline ecological and landscape assessments and are secured through the Works Plans **[EN010170/APP/GH2.4]**, Concept Design Parameters and Principles **[EN010170/APP/GH7.17]**, and the Outline Landscape and Environmental Management Plan **[EN010170/APP/GH7.4]**.

3.5.11 There are a number of isolated residential properties and farmsteads in proximity to the Order limits, including a very small number that are partially encircled. The Scheme layout has therefore been actively designed to be sensitive to residential views, avoiding or reducing change wherever practicable, and mitigating views of the solar arrays and supporting infrastructure through tailored planting measures. The Applicant and consultant team have been in liaison with residents of these properties throughout the concept design and pre-application stages to understand and seek to respond to their concerns.

3.6 Agricultural Land

3.6.1 The majority of the land area within the Order limits is arable agricultural land. These areas are identified in Figure 20.2 **[EN010170/APP/GH6.4.20.2]**. The matter is reviewed in detail within ES Chapter 20: Agricultural Circumstances **[EN010170/APP/GH6.2.20]**.

3.6.2 In line with the requirements of NPS EN-1, EN-3, EN-5, and the NPPF concerning the use of agricultural land, the Scheme undertook a search for Potential

Development Areas (PDAs) during Stages two to five of its site selection process. This search prioritised the use of lower-quality agricultural land and sought to avoid Best and Most Versatile (BMV) land wherever feasible. Further details on the PDA search and the consideration of agricultural land use are provided in Chapter 5: Alternatives and Design Evolution **[EN010170/APP/GH6.2.5]**.

3.6.3 The following priorities have influenced the design of the scheme:

- The avoidance of development of best and most versatile land where practicable; and
- Embedded construction, operation and decommissioning mitigation measures, including the implementation of a detailed Soil Management Plan.

3.7 Ecology and Biodiversity

3.7.1 The habitats at the Sites are considered to be typical of their surroundings, and as such there is significant opportunity for a high biodiversity net gain through the onsite habitat enhancement.

3.7.2 The Sites generally occupy large, open fields on level or gently undulating ground. In the main, fields comprise arable farmland (both cereal and non-cereal crops and grass leys), with narrow uncultivated margins. Wider margins are, however, present at a number of sites, which are largely associated with environmental stewardship agreements. Permanent grassland is rarer and most prevalent at Green Hill E and F. This is managed via sheep or horse grazing, or else cut for silage. Small areas of grassland at field corners are also present. A network of managed hedgerows and ditches lie at the boundaries of the fields.

3.7.3 Woodland and other habitats are rare within the Sites and limited to small plantation shelter belts or else small sections of larger woodland blocks which chiefly lie outside the Sites. A number of woodland blocks are situated adjacent, including ancient woodland. In terms of wetland habitats, few ponds are present on site, with a small number a short distance away from field boundaries. Watercourses were recorded adjacent to and intersecting the Sites, including both wet and seasonally wet agricultural ditches. Flowing watercourses are present in the form of upstream feeder streams for more significant local watercourses (predominately the River Nene), in addition to other watercourses managed as agricultural drainage ditches.

3.7.4 The Upper Nene Valley Gravel Pits Special Protection Area (Upper Nene Valley GP SPA) comprises a network of exhausted sand and gravel pits extending across approximately 35km of alluvial deposits of the River Nene floodplain. All Sites bar Green Hill A and A.2 fall within the SPA consultation zone. The SPA lies closest to Green Hill BESS (parts of the SPA lie adjacent to the Order Limits).

3.7.5 Habitat creation and management priorities, as set out in the Outline Landscape and Ecological Mitigation Plan **[EN010170/APP/GH7.4]** will be in part driven by the Biodiversity Opportunities Mapping produced by Natural Capital Solutions and Northamptonshire Biodiversity Records Centre and local policies promoting the connection of Green Infrastructure and Nature Recovery Networks.

3.7.6 The following design principles have been fed into the design of the Scheme:

- Avoidance of national ecological designation.
- 8m minimum from ditches and any trees with 'low' suitability for roosting bats.
- 10m minimum from ditches with signs of otter or water vole, or trees with 'moderate' suitability for roosting bats.
- 15m minimum from all hedgerows, minor watercourses (small streams), 'outlying' badger setts and from any tree with 'high' suitability for roosting bats.
- 20m minimum from woodland, ponds and moderate watercourses (depending on ecological value).
- 30m minimum from ancient woodland, major watercourses (e.g. rivers) and 'main', subsidiary' or 'annexe' badger setts.
- Other, bespoke buffers around bat roosts and the nesting sites of Schedule 1 birds will be implemented on a case-by-case basis, taking into account the specific species' requirements.

3.8 Cultural Heritage

3.8.1 Details of the heritage assets in the study area are presented and assessed in full in ES Chapter 12: Cultural Heritage **[EN010170/APP/GH6.2.12]**.

3.8.2 There are no Conservation Areas, Scheduled Monuments, Listed Buildings or Registered Parks and Gardens located within the Order Limits.

3.8.3 The following priorities were identified to be taken forward through the design process:

- Avoidance of national cultural heritage designations;
- Areas of significant archaeology to be avoided;
- Areas of moderate archaeology to be limited to restricted loading and non-penetrative foundations; and
- Context of cultural heritage assets to be considered.

3.8.4 ES Chapter 12: Cultural Heritage **[EN010170/APP/GH6.2.12]** addresses archaeological assessment and discusses the embedded mitigation measures that have been identified and adopted as part of the evolution of the project design at Section 12.7. This includes the removal of panels from especially archaeologically sensitive areas and the use of concrete feet and above ground cabling ducts to avoid ground disturbance impacts to archaeologically sensitive areas. Where assets have been identified as requiring preservation in situ, with standard mitigation in place in the form of placing the panels on concrete feet, impacts would be avoided. In locations with heritage assets that could be impacted by the Scheme through their settings, enhanced screening and offsets are proposed to be embedded into the Scheme. An overarching Archaeological

Mitigation Strategy **[EN010170/APP/GH6.3.12.7]** details the embedded mitigation required to safeguard archaeological assets identified within the Order limits.

3.9 Hydrology

3.9.1 Green Hill A, B and C are situated in Flood Zone 1 and therefore have low probability of flooding. Green Hill D, E, F and G are mostly located within Flood Zone 1, however there are limited areas of Flood Zone 3 across these sites related to unnamed watercourses.

3.9.2 Flood modelling has been completed across Green Hill BESS which has confirmed that the areas identified for development are either located outside of the floodplain or are predicted to experience shallow flood depths of less than 0.3m.

3.9.3 The following priorities were identified:

- Avoidance of flood storage areas; and
- Avoidance of areas of surface water flooding greater than 1m depth.

3.9.4 The design of the Scheme seeks to avoid the construction of vulnerable infrastructure in areas at risk of flooding. Less vulnerable infrastructure will be designed to ensure it can be resilient to flooding, and that its placement in areas of flood risk does not increase the risk of flooding elsewhere. Sustainable drainage systems (SuDS) will be implemented to ensure that the Scheme does not increase the risk of flooding elsewhere. The SuDS will be designed in such a way that they also deliver a biodiversity enhancement.

3.9.5 Inclusion of SuDS measures around any proposed vulnerable infrastructure (substations and batteries) and wildflower planting at the edge of the solar array areas will provide sufficient treatment as well as the attenuation required to maintain existing runoff rates.

3.10 Access and Movement

3.10.1 Each of the Sites has access routes, which will be used for construction, operation, maintenance and decommissioning. The local highway network has been assessed as being suitable for traffic associated with the Scheme at all phases. ES Chapter 13: Transport and Access **[EN010170/APP/GH6.2.13]** further details the local highway network in the vicinity of each site and on the Cable Route Corridor.

3.10.2 The A45 and A14 are both part of the Strategic Road Network and are both dual carriageways. The A43, A428 and A509 form part of the Major Road Network and are A roads designed to accommodate high traffic flows and Heavy Goods Vehicles (HGVs). The A43, A428 and A509 are predominantly single carriageway roads.

3.10.3 A total of 47 access points across the Scheme are proposed for construction and operation purposes for the Sites, Cable Route Corridor and Cable Construction Compounds. The majority of access points will be improved existing field accesses. ES Chapter 13: Transport and Access **[EN010170/APP/GH6.2.13]** details new accesses to be created or upgraded as part of the Scheme.

3.10.4 A series of construction vehicle management measures have been identified and are outlined within the Outline Construction Traffic Management Plan **[EN010170/APP/GH7.9].**

3.10.5 There are 36 Public Rights of Way that are located through the Scheme, the PRoW are detailed in the Public Rights of Way and Permissive Paths Management Plan **[EN010170/APP/GH7.10]**. The Scheme has been designed so that it does not cause a permanent diversion or permanent closure of a Public Right of Way or make it so that the Public Right of Way is unsuitable or undesirable for use.

3.10.6 Where feasible, the design of the Scheme considers where additional accessibility, such as permissive paths or links between Public Rights of Way can be introduced to perform a level of community benefit or to enhance the walking and cycling network in the locality. New permissive paths have been proposed as part of the Scheme further detailed in Chapter 4: Scheme Description and the Outline Public Rights of Way Management Plan and Permissive Paths **[EN010170/APP/GH7.10].**

4 Design Principles

4.1 Vision

4.1.1 The vision for the Scheme is to efficiently deliver low-carbon, renewable energy and make a substantial contribution to the Government's solar deployment target (70GW by 2030) and legal obligations to deliver net zero and achieve energy security whilst being sensitive to, and exploring opportunities to enhance, the surrounding communities.

4.2 Island Green Power Design Principles

4.2.1 The Applicant identified a number of key design objectives in order to achieve the project vision.

4.2.2 These objectives have been formulated to align with guidance published by the National Infrastructure Commission, Solar Energy UK and BRE.

Principle 1: Decarbonisation and Energy Policy: Projects will contribute to energy security and help deliver the UK's 2050 net zero targets, providing secure, reliable, affordable and home-grown energy to the nation.

4.2.3 The Scheme has a total expected generating capacity of approximately 500 MW of renewable solar energy for approximately 60 years for distribution by the National Grid. This will make a significant contribution towards meeting national energy demand.

Principle 2: Biodiversity net gain and nature recovery: Projects create new habitats and include enhancements to deliver a measurable net gain for biodiversity throughout operation.

4.2.4 The area within the Order limits consists of fragmented areas of good quality ecological habitats, with much of the Scheme consisting of low biodiversity agricultural land. The Scheme will support, enhance, and link areas of ecological significance with green infrastructure interventions. The Scheme also will increase local biodiversity through new planting and groundcover where currently under arable agricultural use. The Scheme will deliver Biodiversity Net Gain as set out within ES Chapter 9: Ecology and Biodiversity **[EN010170/APP/GH6.2.9]** and in Appendix 9.13: Biodiversity Net Gain Assessment **[EN010170/APP/GH6.3.9.13]**. This is due to the large-scale reversion of arable to permanent grassland, as well as the adoption of generous ecological buffer zones (including watercourses and marginal habitat) which will be sympathetically managed to maximise biodiversity value (within the Outline Landscape and Ecological Management Plan (LEMP) **[EN010170/APP/GH7.4]**). Furthermore, significant planting of new hedgerows and tree lines will contribute to the enhancement of linear habitats.

Principle 3 Environmentally led design: Projects designed to minimize the potential impact to versatile and high-quality land, always considering landscape and protecting local heritage sites.

4.2.5 The landscape design has incorporated features to reduce the visual impacts on key landscape receptors, residential properties and recreational routes.

4.2.6 The landscape mitigation strategy has evolved to include distance buffers and proposed planting to assist in mitigating visual impact from landscape receptors. Planting typologies have been proposed across the scheme to provide visual mitigation and introduce landscape features which are characteristic of the landscape setting that link existing habitat.

4.2.7 The design of the Scheme ensures that the siting and scale of the development can be contained in the local landscape, with measures included to mitigate against direct impacts, whilst employing planting and landscaping improvements to enhance existing landscape features whilst helping to make the proposals assimilate with the existing working agricultural landscape. These improvements are set out within the Outline LEMP **[EN010170/APP/GH7.4]**, to be secured as part of the DCO.

4.2.8 The Scheme is designed to avoid direct impacts on above and below ground heritage assets and seeks to preserve the setting of heritage assets within the Order limits and in the surrounding context.

4.2.9 Mitigation that has been embedded into the Scheme by design includes the avoidance of archaeologically sensitive areas and the removal of panels and other infrastructure in areas considered to cause an indirect impact to the significance of heritage assets through their setting. In locations with heritage assets that could be impacted by the Scheme through their settings, enhanced screening and offsets are proposed to be embedded into the Scheme.

4.2.10 The Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]** sets out that a number of measures will be taken to ensure impacts on heritage assets are avoided – this includes providing mitigation as follows:

- Provision for archaeological mitigation and monitoring is detailed in the Written Scheme of Investigation (WSI, see ES Appendix 12.7 **[EN010170/APP/GH6.3.12.7**]). The WSI must be adhered to during the construction phase;
- Areas where concrete feet are required will be laid out by a surveyor in line with the requirements of the WSI;
- All archaeological works will be undertaken by suitably qualified and experienced professional archaeological specialists;
- All archaeological works will be undertaken in line with national guidance (i.e. Historic England and CIfA guidance); and
- The Archaeological Project Manager and/or the relevant local planning authority county archaeologist will monitor the completion of works in accordance with the programme set out in the WSI.

Principle 4 Design Flexibility: Projects are functional and fit for purpose, adaptable and able to respond to innovative technologies within built-in resilience to climate change

4.2.11 The Scheme generates electricity through solar energy, which improves national energy resilience by reducing the need for fossil fuel-based energy production, which is influenced to a large degree by international energy market pricing and supply fluctuations, which are often affected by world events beyond the control of infrastructure developers. Solar energy is a method of energy production that is independent of, and not as influenced by, these external factors, which can contribute to creating a resilient supply of energy helping to fulfil domestic energy demand, which is less sensitive to price volatility.

4.2.12 The design of the Scheme includes a battery energy storage system (BESS), which enables energy to be stored from production on the Sites, or from surplus energy on the Grid, so that it can be released back onto the Grid at times of peak demand. The inclusion of BESS on the Scheme has been selected by the developer to meet the predicted needs of the electricity market, and to allow for optionality to respond to advancements in solar panel and battery energy storage technology. This will help to support policy objectives for delivery of renewable energy by reducing demand for non-renewable energy at peak times, and by providing grid balancing services to help increase the resilience of the electricity distribution network.

Principle 5 Social Value and Community: Projects provide additional benefits and opportunities in consultation with the local community, minimizing disruption to Public Rights of Ways during all phases and enhance local walking routes and paths where possible.

4.2.13 The design of the Scheme ensures that Public Rights of Way are safeguarded from unnecessary diversions or closures, with all efforts made to ensure they can be protected, integrated into the Scheme design, and where feasible enhanced by planting and greater connectivity through the introduction of permissive paths. The public highway has also been protected, and as such the design of the Scheme ensures that access to it does not negatively impact on the safety and desirability of the use of the public highway for all users. The Outline CEMP **[EN010170/APP/GH7.1]** and Public Rights of Way Management Plan **[EN010170/APP/GH7.10]** set out how Public Rights of Way will be managed during construction.

Principle 6 Sustainability, durability and reversibility: Designed to deliver reliable sustainable energy, ensure the installation of the projects remain temporary and can be fully reversed, if necessary, with minimal impact to the environment.

4.2.14 The Scheme's principal objective is to efficiently generate a substantial capacity of renewable energy to the National Electricity Transmission System, thereby supporting the delivery of the Government's objectives and commitments for the development of a secure, affordable and low carbon energy.

4.2.15 The Scheme will cease generating in 2089 after 60 years of operation, with the decommissioning phase activities completed by 2091. Upon decommissioning, the above-ground physical infrastructure at the Solar Farm Sites will be removed and each Solar Farm site restored to its current use and returned to the landowner. This will include the areas of agricultural land where the agricultural resource has been maintained (and potentially improved) during operation, and the established habitats.

Principle 7 Efficient infrastructure and ethical supply chain: Designed to maximise operational efficiency, projects ensure consistent energy output and minimal losses through advanced, ethically sourced technologies and an optimized site layout.

4.2.16 A land area of approximately 100 ha (including solar panels, landscaping and ecology mitigation land) is required to provide a solar scheme of 50MW (AC). To supply the grid connection offer of 500MW (AC), a total site size of approximately 1,000 ha (excluding cable route) is needed. The Applicant sought to find a total site which is around 10% larger than is needed for the grid connection offer. Based on Island Green Power's experience of developing utility scale solar projects, a larger site size provides flexibility for the accommodation of additional mitigation measures and other constraints that may become known through the design development process.

4.2.17 As described in Chapter 4: Scheme Description **[EN010170/APP/GH6.2.4**], the parameters of the Application will maintain some degree of design flexibility under the Rochdale Envelope to allow the latest technology to be utilised at the time of construction.

4.2.18 The Scheme achieves added resilience through the inclusion of Battery Energy Storage Systems (BESS), rather than co-locating different renewable generation technologies. BESS provides improved stability and 'on demand' grid resilience functions that wind turbines cannot offer at this time. This approach results in fewer environmental effects, particularly regarding visual impacts.

4.2.19 The inclusion of BESS in the Scheme is important for enhancing grid resilience and stability. BESS provides 'on demand' energy storage and release, ensuring a reliable supply of electricity even during peak demand or unexpected outages. By integrating BESS, the Scheme meets the requirements of NPS EN-3.

Principle 8 Commitment to mitigation: By adhering to the mitigation hierarchy, our Projects reduce potential environmental impacts and control any adverse effects throughout construction, operation, maintenance and decommissioning.

4.2.20 The Scheme is designed to ensure that sensitive onsite infrastructure is not at risk from flooding, and that the development of the Scheme will not increase the risk of flooding elsewhere. This also includes measures to ensure the Scheme is resilient to climate change, and that changes to hydrological systems as a result of climate change, are not exacerbated by the Scheme. This is set out within Sections 10.7 and 10.8 of ES Chapter 10: Hydrology Flood Risk and Drainage **[EN010170/APP/GH6.2.10]** which lists mitigation measures that have been built into the design with regard to flood risk and drainage.

4.3 Delivery of Design Principles

4.3.1 The table below sets how each of the Scheme's design objectives are addressed through the proposed design measures, and how these measures will be secured in the DCO application.

Table 1: Delivery of Design Principles

Design Measure	How measures are secured
Principle 1: Decarbonisation and Energy Policy: Projects will contribute to energy security and help deliver the UK's 2050 net zero targets, providing secure, reliable, affordable and home-grown energy to the nation.	
Construction and operation of photovoltaic panels with a generating capacity over 50 MW.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels.
Use of north-south axis tracking panels or east-west axis fixed panels. This will ensure that energy generation is optimised through the use of the most appropriate technology.	The Concept Design Parameters and Principles **[EN010170/APP/GH7.17]** defines the type of PV panels and mounting structures to be used in the Scheme and is secured by a DCO requirement.
Principle 2: Biodiversity net gain and nature recovery: Projects create new habitats and include enhancements to deliver a measurable net gain for biodiversity throughout operation.	
Include sufficient offsets from ecological receptors to onsite infrastructure	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels, with the offsets detailed in the Outline Landscape and Ecological Mitigation Plan (OLEMP) **[EN010170/APP/GH7.4]** and is secured by a DCO requirement.
Provide planting to enhance linear green infrastructure to aid ecology and biodiversity improvement, and grassland and wildflower meadow planting underneath panelled areas to improve in-field biodiversity from the arable field baseline.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the planting (Works No. 6) and habitat creation areas (Works No. 9 and 10), with the detailed measures set out in the OLEMP **[EN010170/APP/GH7.4]** and is secured by a DCO requirement.
Creation of permanent habitats for wetland, in-field, and field-side ecosystems.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the planting (Works No. 6) and habitat creation areas (Works No. 9 and 10), with the detailed measures set out in the OLEMP **[EN010170/APP/GH7.4]** and is secured by a DCO requirement.
Principle 3: Environmentally led design: Projects designed to minimize the potential impact to versatile and high-quality land, always considering landscape and protecting local heritage sites.	
The layout takes account of the surrounding landscape and respects	The Works Plan **[EN010170/APP/GH2.4]** (Works No. 1) defines the extents of the

Design Measure	How measures are secured
the intrinsic value of the landscape character.	Scheme permitted for the locating of PV panels, and for landscape planting measures.
Electrical and telecommunications cabling associated with the Scheme is to be buried in cable trenches.	The Concept Design Parameters and Principles **[EN010170/APP/GH7.17]** sets out whether cabling will be above ground or below ground as well as the techniques to be used. Where possible, cabling will be below ground in order to minimise impacts.
Proposed planting has been designed to take account of sensitive views; and retain openness where important to key views.	The extents of where planting is proposed, and the nature of the planting proposed are set out in the OLEMP **[EN010170/APP/GH7.4]** and secured by a DCO requirement.
Areas known to be of greatest landscape sensitivity have been excluded from siting of PV panels. This has been established through the iterative design process as detailed in chapter 5 of this document (See 5.4.2-5.4.21)	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels.
Minimum offsets from PV panels and associated infrastructure to woodland, hedgerows, PRoWs and waterbodies are embedded in the Scheme design.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels, including where there are offsets from defined features.
Retaining existing field boundaries and on-site vegetation where practicable.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels, including where offsets from existing field boundaries are located. The extent of where on-site vegetation is proposed to be retained, removed, or enhanced, are set out in the OLEMP **[EN010170/APP/GH7.4]** and secured by a DCO requirement.
Siting energy storage and the onsite substations within visually contained parts of the Order limits. This will help meet the objective to develop the Scheme sensitively to the surrounding landscape, limiting the impact on views for key landscape receptors, residential properties, and recreational routes. This is detailed in parts 5.4 and 5.5 of this Statement.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of energy storage and substation infrastructure. The Concept Design Parameters and Principles **[EN010170/APP/GH7.17]** defines parameters for the component parts of the Scheme and is secured by a DCO requirement.
A baseline 50 m offset has been provided from all residential property	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted

Design Measure	How measures are secured
boundaries to the locating of PV panels.	for the locating of PV panels, including where there are offsets from defined features.
Further bespoke arrangement of the proposed panels close to residential properties as a result of LVIA and resident consultation. Where necessary, bespoke landscaping and planting will be delivered to mitigate impacts on amenity.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels, including where there are offsets from defined features. The extents of where new planting areas are proposed are set out in the OLEMP **[EN010170/APP/GH7.4]** and secured by a DCO requirement.
Refinement of the Order limits and extent of PV arrays and ancillary infrastructure in the vicinity of above and below ground heritage assets so as to reduce direct impact, and visual impact on the setting of the assets. Existing woodland and hedgerows have been used wherever possible to provide screening.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels, including where there are offsets from defined features. Key heritage assets have been identified and the impacts upon them assessed in the ES Chapter 12: Cultural Heritage **[EN010170/APP/GH6.2.12]**. The extents of where new planting areas are proposed are set out in the OLEMP **[EN010170/APP/GH7.4]** and secured by a DCO requirement.
Areas of archaeological interest within the Order limits have been carefully avoided through the removal of PV panel structures or overlaid by PV panel structures with non-intrusive foundations.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels, including where there are offsets from defined features. Areas of archaeological interest requiring non-intrusive foundations have been identified and mapped in the ES Chapter ES Chapter 12: Cultural Heritage **[EN010170/APP/GH6.2.12]**. This is set out within Works Nos. 1.
Principle 4: Design Flexibility: Projects are functional and fit for purpose, adaptable and able to respond to innovative technologies within built-in resilience to climate change	
All onsite infrastructure will be located to be resilient to flooding. Sensitive infrastructure will be located solely in Flood Zone 1 or where able, lifted above maximum flood depths. Only compatible infrastructure will be located in Flood Zone 2 or 3.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of any infrastructure. Areas of greater risk of flooding are identified in the Flood Risk Assessments with mitigation strategies set out in the ES Chapter 10: Hydrology, Flood Risk and Drainage **[EN010170/APP/GH6.2.10]** and Appendices 10.1-10.10 **[EN010170/APP/GH6.3.10.1 - GH6.3.10.10]**.
Flexibility to select the most efficient technology, within defined parameters	The Concept Design Parameters and Principles **[EN010170/APP/GH7.17]** defines parameters for the component parts of the

Design Measure	How measures are secured
	Scheme and is secured by a DCO requirement.
Where electrical cabling is required to cross a major watercourse, these will be buried below the bed of the watercourse and be constructed by directional drilling.	The Crossing Schedule **[EN010170/APP/GH7.18]** sets out the requirements for where directional drilling of electrical cabling is needed to cross major watercourses and is secured by a DCO requirement. The Concept Design Parameters and Principles **[EN010170/APP/GH7.17]** defines parameters for the directional drilling and is secured by a DCO requirement.
The drainage design strategy takes account of the impacts of climate change and will ensure that there is no increase in flood risk.	The drainage and SuDs strategy is set out in the ES Chapter 10: Hydrology, Flood Risk and Drainage **[EN010170/APP/GH6.2.10]** and Appendices 10.1-10.10 **[EN010170/APP/GH6.3.10.1 - GH6.3.10.10]**.
The detailed design of drainage features will consider their potential to enhance biodiversity.	The drainage and SuDs strategy is set out in the ES Chapter 10: Hydrology, Flood Risk and Drainage **[EN010170/APP/GH6.2.10]** and accompanying Flood Risk Assessment and Drainage Strategy set out in Appendices 10.1-10.10 **[EN010170/APP/GH6.3.10.1 - GH6.3.10.10]**. Additional drainage features for biodiversity enhancement are set out in the OLEMP **[EN010170/APP/GH7.4]**.
Surface water run-off rates will be limited to greenfield rates.	The drainage and SuDs strategy is set out in the ES Chapter 10: Hydrology, Flood Risk and Drainage **[EN010170/APP/GH6.2.10]** and accompanying Flood Risk Assessment and Drainage Strategy set out in Appendices 10.1-10.10 **[EN010170/APP/GH6.3.10.1 - GH6.3.10.10]**.
Design Principle 5: Social Value and Community: Projects provide additional benefits and opportunities in consultation with the local community, minimizing disruption to Public Rights of Ways during all phases and enhance local walking routes and paths where possible.	
Existing PRoWs will be retained in all instances with no permanent closures or diversions proposed. Temporary closures and local diversions during construction will be limited to minimum duration required to ensure continued connectivity.	The Public Rights of Way Plan **[EN010170/APP/GH2.6]** and the Access to Works Plan **[EN010170/APP/GH2.7]** show the PRoW and highway network within the Order limits. The Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]** and Public Rights of Way and Permissive Paths Management Plan **[EN010170/APP/GH7.10]** details how construction impacts on PRoW are to be

Design Measure	How measures are secured
	managed and is secured by a DCO requirement.
The safe use of PRoWs and highways will be managed through design mitigation and onsite construction traffic management including dedicated crossing point and banks persons for highway accesses where required.	The safe use of PRoWs and highways has been assessed in the ES Chapter 13: Transport and Access **[EN010170/APP/GH6.2.13]**. Any required mitigation or management measures are set out in the Construction Traffic Management Plan **[EN010170/APP/GH7.9]** and is secured by a DCO requirement.
The new permissive paths will enhance connectivity in the local area.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the proposed permissive paths, with details of planting set out in the OLEMP **[EN010170/APP/GH7.4]** and secured by a DCO requirement.
Proposed points of access have been designed including temporary accesses for construction and decommissioning, permanent access for construction, or maintenance and operation, or for all stages of the development.	The Public Rights of Way Plan **[EN010170/APP/GH2.6]** and the Access to Works Plan **[EN010170/APP/GH2.7]** show the locations and design of accesses associated with the Scheme development, and has been influenced by engagement with stakeholders, including the relevant highway authorities. Following Statutory Consultation, the proposed permissive paths design has been updated in response to consultee comments as set out in as detailed in part 5.5 of this document.
Adequate visibility splays will be provided at all new access points, commensurate with existing vehicle speeds or speed limits.	The Public Rights of Way Plan **[EN010170/APP/GH2.6]** and the Access to Works Plan **[EN010170/APP/GH2.7]** show the locations and design of accesses associated with the Scheme development. Full details of the accesses, traffic counts, and visibility requirements are set out in the ES Chapter 13: Transport and Access **[EN010170/APP/GH6.2.13]** and the Construction Traffic Management Plan **[EN010170/APP/GH7.9]** and secured by a DCO requirement.
Principle 6: Sustainability, durability and reversibility: Designed to deliver reliable sustainable energy, ensure the installation of the projects remain temporary and can be fully reversed, if necessary, with minimal impact to the environment.	
The Scheme has been designed with its 60-year lifespan in mind and allow decommissioning to return the sites to their existing use.	The DCO will set out the 60-year limit on the operational phase for the Scheme.

Design Measure	How measures are secured
Principle 7: Efficient infrastructure and ethical supply chain: Designed to maximise operational efficiency, projects ensure consistent energy output and minimal losses through advanced, ethically sourced technologies and an optimized site layout.	
The generating stations and energy storage will be connected to the National Grid at Grendon National Grid Substation to allow for two-way transmission of electricity.	The Works Plan **[EN010170/APP/GH2.4]** defines the extent of the energy storage system.
A battery energy storage will be included in the Scheme design to help to meet the needs of the electricity market, by reducing demand for non-renewable energy at peak times, and by providing grid balancing services to help increase the resilience of the electricity distribution network.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the energy storage system (24.8 ha in area at Green Hill BESS) permitted for the locating of the energy storage.
Principle 8: Commitment to mitigation: By adhering to the mitigation hierarchy, our Projects reduce potential environmental impacts and control any adverse effects throughout construction, operation, maintenance and decommissioning.	
The Scheme has taken a landscape led design approach with areas marked for biodiversity and ecological enhancements.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme with areas for biodiversity enhancements.
Minimum offsets from PV panels and associated infrastructure to woodland, hedgerows, PRoWs and waterbodies are embedded in the Scheme design.	The Works Plan **[EN010170/APP/GH2.4]** defines the extents of the Scheme permitted for the locating of PV panels, including where there are offsets from defined features.

5 Design Evolution

5.1 Introduction

5.1.1 The design and extent of the Scheme has been subject to an iterative process involving the Applicant, the design team and the environmental consultant team. The design has also been informed by considering feedback from various forms of consultation including with stakeholders and statutory consultees, host authorities, local communities, local residents and through the EIA scoping process.

5.1.2 This section presents a summary of the design evolution of the Scheme since the first round of non-statutory consultation in March and May 2024 to the point of submission in May 2025. It describes the main design changes associated with the solar array sites, supporting landscaping and ecological mitigation design, substation design, and the development of the cable routes. A more detailed description of these stages is set out in ES Chapter 5: and Alternatives and Design Evolution **[EN010170/APP/GH6.2.5]**.

5.2 Design Champion

5.2.1 The Overarching National Policy Statement for Energy (NPS EN-1,January 2024) at paragraph 4.7.5. suggests that '*to ensure good design is embedded within the project development, a project board level design champion could be appointed'*. (Ref.5)

5.2.2 The Applicant considered it important to appoint a design champion to lead the design process through all stages of the Scheme, ensuring a multi-disciplinary approach from the outset. The appointed design champion was the Scheme's landscape architect. The Applicant considered this appointment appropriate given the landscape architect's prior experience in successfully leading the design of other DCO solar schemes and role in informing the Schemes design and site layouts.

5.2.3 The landscape architect was responsible for leading the development of the indicative masterplans presented at the Preliminary Environmental Information Report (PEIR) stage and subsequent iterations following feedback received during statutory consultation, resulting in the Landscape and Ecological Mitigation Plans submitted with this DCO. These plans outline the site layout and proposed mitigation for the Scheme, which has been developed in close coordination with the Applicant's design team.

5.2.4 From the offset, the design champion led the development of plans showing key constraints and led the development and the site layout. They organised and led multi-disciplinary workshops to review site layouts and drove forward the design, taking into account the views of planning professionals, the technical design team, the Applicant, transport professionals, consultation, the land referencing team and all other technical disciplines that contributed to the ES.

5.2.5 The design champion is considered a core member of the team and became the 'go to person' when queries were raised around scheme changes, design iterations and layout. They have sufficient influence to ensure multi-disciplinary approaches were taken and the ability to listen to all perspectives and

recommend a way forward. The design process is iterative and continuous. The design champion is a member of the core team, not remote from it, enabling dynamic decision making where opportunities are identified to enhance design, deliver additional benefits, reduce or avoid environmental impacts or respond to requests for changes to the design from landowners, residents, local authorities and consultees. They are supported by a collaborative team working towards the best possible outcomes.

5.2.6 A design champion will continue to perform the same functions through the post-consent detailed design stages, including in the preparation of the documents and plans secured through the requirements of the draft Development Consent Order **[EN010170/APP/GH3.1]**.

5.3 Green Hill Design Principles

5.3.1 The Scheme specific design principles set out below were initially developed during the early stages of the design process. These principles have informed the design process of the Scheme and been expanded upon as the design has progressed, ensuring their integration throughout the evolution of the Scheme. The principles have been developed and informed by Island Green Powers eight design principles:

- The design of the Scheme will be landscape led exploring the intrinsic character and beauty of the surrounding countryside.
- Adherence to the mitigation hierarchy to reduce impacts and control any adverse effects on the environment throughout the lifecycle of the project from construction through to operation and maintenance and decommissioning.
- The Scheme will deliver a minimum 10% net gain for biodiversity through strategic habitat creation and enhancement measures.
- The Scheme's design will retain a degree of flexibility to enable it to adapt over time, be functional and fit for purpose, and respond to innovative and new technologies as well as building resilience to climate change.
- The Scheme will be carefully designed to minimise where practicable impacts on amenity from air quality, traffic and noise effects and safeguard the health and safety of local residents by securing suitable control measures during construction, operation and maintenance and decommissioning of the Scheme.
- The design of the Scheme will be sensitive to above and below ground heritage assets and their setting, by locating infrastructure at a suitable distance and through appropriate landscape screening.
- The Scheme will be sensitive to existing land uses where practicable and maximise opportunities to strengthen green and blue infrastructure.
- The Scheme will seek to minimise the effects of the development on PRoW by incorporating measures to maintain, and where practicable, explore opportunities to improve the local PRoW network.

Landscape-led Design

5.3.2 The design development of the Scheme recognises the need for careful siting, design and mitigation, and the importance of an iterative approach to design to ensure appropriate design solutions are reached. This iterative approach will lead to a layout that minimises harm to the landscape through the appropriate siting and layout of infrastructure, design (including colours and materials), and through the development of Landscape and Ecological Mitigation Plans that utilises, retains and enhances existing natural features such as hedgerows, woodland, watercourses and terrain to help screen the proposed infrastructure, minimise adverse landscape and visual effects and provide Biodiversity Net Gain. The Landscape and Ecological Mitigation Plans have been designed to build upon and positively respond to the aims and management guidelines of published Landscape Character Assessments to provide a Scheme that is sympathetic to local character and setting, helping to protect and enhance the landscape through design. The Scheme will provide net gains for biodiversity, including the establishment of coherent ecological networks.

Mitigation Hierarchy

5.3.3 Adherence to the mitigation hierarchy to reduce impacts and control any adverse effects on the environment throughout the lifecycle of the Scheme from construction through to operation and maintenance and decommissioning. The Scheme design will follow the mitigation hierarchy, seeking firstly to avoid impacts to sensitive receptors. Where this is not practicable, unavoidable impacts will be mitigated or, as a last resort, compensated for. Adherence to the mitigation hierarchy as a fundamental principle will reduce the potential for the Scheme to result in significant adverse effects on sensitive receptors where practicable.

5.3.4 Multipurpose mitigation measures, such as landscape planting that will screen the Scheme, and provide a net gain in biodiversity, will be embedded into the scheme design. Modifications to the scale and layout of the Scheme will also be considered together with the introduction of appropriate mitigation measures in order to reduce likely significant adverse effects and comply with planning policy.

5.3.5 Where appropriate, additional mitigation will be identified during the design process to further protect, enhance or record any receptors where residual effects remain. Furthermore, opportunities for enhancement will also be maximised within the Scheme, additional to any requirement for avoidance, mitigation and compensation.

Net Gain

5.3.6 The Scheme will deliver a minimum 10% net gain for biodiversity through strategic habitat creation and enhancement measures across the Sites. Net gain will be calculated and demonstrated through the use of the most up-to-date Biodiversity Metric tool. As is typical for ground-mounted solar projects, the Scheme can be expected to deliver biodiversity net gain, through the reversion of intensively managed agricultural land to a grassland habitat underneath and around solar panels, which is sensitively managed to maximise ecological value. As part of the design process, a range of additional habitat creation and enhancement measures will also be identified. Measures will seek to strengthen existing habitat networks and maximise benefits to local wildlife, with a focus on protected species and those targeted for conservation action. This will ensure the

Scheme will deliver the minimum target of 10% biodiversity net gain, which is expected to become a legal requirement for NSIPs from November 2025.

Flexibility, Resilient Resources, Climate Change

5.3.7 The Scheme's design will retain a degree of flexibility to enable it to adapt over time, be functional and fit for purpose, and respond to innovative and new technologies as well as building resilience to climate change. Flexibility is an important part of good design as it allows the Scheme to adapt over time. Retaining a degree of flexibility will ensure there is sufficient scope to undertake value engineering and take account of innovation and technological advancements, given the pace of development in the solar industry. Development of the scheme design will take account of local conditions, thereby contributing to building climate change resilience, by addressing the potential effects of temperature changes, increased flood risk and more frequent and extreme weather events.

Site Layout Design

5.3.8 The layout of the Scheme will be carefully designed to minimise impacts where practicable to amenity from air quality, traffic and noise effects and safeguard the health and safety of local residents by securing suitable control measures during construction, operation and maintenance and decommissioning of the Scheme. The design of the Scheme will be informed by the process of environmental assessment and the inclusion of mitigation measures to minimise, where practicable, any impacts to the amenity of the local communities located nearby. Control documents will be prepared to control and manage the environmental and transport impact to communities during construction, operation and maintenance and decommissioning of the Scheme.

Heritage

5.3.9 The design of the Scheme will be sensitive to above and below ground heritage assets and their setting, by locating infrastructure at a suitable distance and through appropriate landscape screening. The Scheme's design will include suitable setbacks and buffers, such as screening and planting, in appropriate locations between solar infrastructure and heritage assets, in order to minimise harm to heritage assets and their setting. The Scheme will seek to minimise harm through the avoidance of below ground archaeological assets where practicable which will be identified through geophysical surveys and targeted trial trenching.

Land Use

5.3.10 The Scheme will be sensitive to existing land uses where practicable and maximise opportunities to strengthen green and blue infrastructure. Reinforcement and enhancement of existing green and blue infrastructure is a key objective of Landscape and Ecological Mitigation Plan including for example, improved tree line connections, reinforced native tree and hedgerow planting, improved ecological corridors, and connecting isolated trees to existing features and proposed planting areas.

Recreation and Access

5.3.11 The Scheme will seek to minimise the effects of the development on Public Rights of Way by incorporating measures to maintain and, where practicable, explore opportunities to improve the local footpath network. The Scheme design will recognise and consider local priorities for recreation and access, including measures to minimise disruption to PRoW during construction and operation and maintenance and decommissioning where practicable. Enhancement measures for walkers, cyclists and horse riders will be explored. This may include enhancements to local walking routes, including permissive paths to provide longer and circular walks.

5.4 Design Evolution

5.4.1 The Scheme Design has gone through several iterations. A detailed description of the design stages and the changes made to the design of the evolving scheme at each stage is set out in ES Volume 2, Chapter 5: Alternatives and Design Evolution **[EN010170/APP/GH6.2.5].** This includes details of the changes in terms of the extent of the Order limits and the layout of the land within the Order limits.

5.4.2 The Sites which make up the Scheme have been identified through a site search exercise undertaken by the Applicant. The selection of the Scheme's location has followed a five-stage site selection process, that has sought to identify sites that meet the legislative and policy requirements, whilst recognising the need for the Scheme to be commercially viable. A site selection assessment was undertaken **[EN010170/APP/GH6.3.5.1]**. The site selection process and confirmation of the site suitability when considered against potential alternative sites is summarised in the following sections.

5.4.3 A viable grid connection is an essential material consideration for proceeding with a development and is instrumental in defining the search area. A range of technical, environmental and economic factors have to be considered when assessing the suitability of an NSIP scale solar project which include (in no particular order):

Topography and Site Orientation

5.4.4 The Scheme is located predominantly within Northamptonshire, an optimal region within the UK to locate a large-scale solar farm. This is due to good irradiation levels and suitable topography. Land with a gradient of 3% or less is ideal for solar generation. The Sites chosen have gradients under 5 degrees, making them flat and optimal for construction with minimal visual impact. The land is of a suitable size and has excellent topographical characteristics which meet the requirements of the Scheme to generate approximately 500MW(AC) of electricity.

Agricultural Land Classification and Land Type

5.4.5 A review of brownfield land was undertaken; however, no brownfield land met the minimum individual size threshold or the area of approximately 1,100 hectares required for a network of sites in proximity for the Scheme, identified within the 20km search area from the Grendon Substation Point of Connection (PoC).

5.4.6 As set out in the Farming Report **[EN010170/APP/GH7.27]**, the general area within the county as a whole the land is almost all in either the 20-60% BMV, or

>60% BMV. The reality of moving to different sites of similar scale would have similar proportions of BMV as the Scheme does.

5.4.7 Given the high proportion of BMV land within the 20km search area from Grendon Substation, it was not considered possible to avoid the use of BMV land to meet the scale requirements of the Scheme. Additionally, the Applicant recognised the benefits of having a willing landowner and has worked with landowners to develop a collaborative approach that enables farming and solar farms to complement each other. For example, providing a revenue stream to support investment in farming operations and including the ability to continue agricultural activities, such as sheep grazing, during operation.

Designated International and National Ecological and Geological sites

5.4.8 The land is not located within internationally and nationally designated biodiversity sites and can avoid direct impact on locally designated biodiversity sites. It is acknowledged that the Upper Nene Valley Gravel Pits SPA and SSSI are adjacent to the northeast of Green Hill BESS. However, Green Hill BESS is located next to the PoC, which is also adjacent to the SPA and SSSI. Locating the site next to the PoC is preferable for optimal transmission to the substation for connection.

Nationally Designated Landscapes

5.4.9 The land is not located within or adjacent to any national landscape designations such as national landscapes, national parks or designated areas of local landscape value.

Proximity to Sensitive Human Receptors

5.4.10 Consideration was given to the proximity of nearby sensitive human receptors, including residential dwellings and workplaces. The Applicant aimed to limit proximity to residential dwellings, preferring rural agricultural land to minimise impacts on residential areas. Proximity of the Scheme dwellings was further considered during the design evolution process, with the implementation of buffers and screening where practicable to minimise impacts.

5.4.11 Whilst planning policies and environmental constraints are significant factors in site selection, a willing landowner is also a key consideration. In parallel with the process of undertaking an initial review of land within the search area, enquiries were made with landowners and their agents on sites which had been identified as being suitable for solar panels from a technical and constraints perspective. Once a landowner had indicated they would be willing for their land to be included within the Scheme, the Applicant and relevant environmental consultants undertook site visits and further desktop assessments to continue to assess site suitability. Applicant continued to assess any alternatives that are presented to them through the ongoing consultation.

Scheme Design Evolution

5.4.12 Considering the location of the PoC, and having regard to voluntary landowner negotiations, commercial viability, national planning policy and environmental constraints, the sites and the overall scale of the Scheme are considered to be suitable.

5.4.13 Section 5.8 of Chapter 5: Alternatives and Design Evolution **[EN010170/APP/GH6.2.5]** details the design evolution process for the sites, outlining the design iterations following individual stages of the design process following provision of assessment information and stakeholder feedback.

Non-Statutory Consultation: March to May 2024

5.4.14 Early feasibility work including site identification and the consideration of constraints and opportunities took place throughout 2024.

5.4.15 The initial phases of the scheme design were developed through Applicant and landowner parameters, set against desk-based assessment work to determine outline design objectives and identify areas of required preliminary investigation.

5.4.16 On-site options for the locations of substations and battery storage areas were explored in tandem with the non-statutory consultation using a desk-based approach. The proposed locations of these pieces of on-site infrastructure were at an early stage during this Stage 1 Consultation and as such were not included in the consultation materials.

EIA Scoping: August 2024

5.4.17 The EIA scoping stage for the Scheme signified the first formal stage of engagement with statutory bodies. For this stage, the outline design of the Scheme published at non statutory consultation was presented alongside desk-based and initial baseline assessments of the Scheme.

5.4.18 A layout was produced to help the project team scope their topics, through identifying respective study areas and potential receptors. These findings were then presented to the Planning Inspectorate and the notified statutory bodies to comment on the scope of assessment through a formal EIA Scoping Opinion Request.

5.4.19 Following feedback from the Planning Inspectorate and statutory consultees during the EIA Scoping consultation, the design of the Scheme evolved in tandem with further desk-based and field-based environmental assessments. Consultation with neighbouring residential properties was undertaken during this period to determine any direct impacts and suitable mitigation measures.

5.4.20 Updates to the scheme design included the preliminary positioning of panels, substations and BESS as well as implementing buffers and exclusion of areas in response to environmental findings (specifically archaeology and ecology) and consultation responses.

5.4.21 The Cable Route Search Area presented at the statutory consultation stage was based on the initial cable options presented during the EIA Scoping stage. Optionality remained a driving factor in retaining a wide cable route, as constraints and environmental assessments were only progressed to a preliminary stage. The cable routes presented at this time, consisted of entire fields, with any enclaved residential or business premises excluded from further investigation. A number of small amendments to the cable route corridor were made to better align with land ownership boundaries and existing field boundary features. Intra-site cable routing between parts of the Sites were also amended

to reflect landowner feedback and to address onsite constraints such as crossing points for major watercourses and important areas of archaeology.

Statutory Consultation: November to December 2024

5.4.22 The indicative landscape masterplans produced along with the PEIR were presented to the public and statutory consultees for statutory consultation in November to December 2024.

5.4.23 This stage of the design process took into account the feedback received during the statutory consultation, including feedback from members of the public, statutory consultees and final design requirements from landowners. The EIA process had an iterative influence on the design, as mitigation requirements for hydrology, landscape, ecology and other environmental topics were fed back into the overall scheme design. The development of the design has culminated in the design masterplan included in the DCO Application.

5.4.24 On the Sites, the buffer zones to ecological receptors and watercourses have been updated following completion of baseline surveys; and receipt of consultation responses.

5.4.25 The landscaping mitigation set out in the Outline Landscape and Ecological Management Plan (OLEMP) consists of areas of planting for mitigation, such as woodland, tree belt and hedgerow planting, both new and enhancement of existing. On site, landscape planting includes low level planting such as native scrub and wildflower meadow planting. This has the triple purpose of providing biodiversity net gain, providing groundcover to let the soils underneath rest, and allowing for potential grazing options for optioned farm holdings. Within the Sites, low-level growth is proposed to ensure that the landscaping proposals do not conflict with the operational efficiency of the arrays. Furthermore, internal access tracks have been remodelled to ensure they avoid buffers to ecological receptors where possible.

5.4.26 The ecological mitigation set out in the Outline LEMP seeks to provide biodiversity net gain across the Scheme through the supplementation of existing habitats and provision of new species rich planting, whilst providing mitigation for loss of habitat for ground-dwelling bird species.

5.4.27 The design of the cable route corridor has been significantly developed for submission of the DCO application, with a preferred route selected based on landowner requirement, baseline conditions determined through the PEIR and surveyed (where possible) and assessed in full for the ES. That notwithstanding, the routing of the cable through the Cable Route Corridor retains flexibility to be located as required to align with the final detailed layout design of the Scheme.

5.4.28 The final Cable Route Corridor is predominantly 50m in width. This allows for micro siting of the cable route therein to avoid identified archaeology, linear features, and provides sufficient flexibility to include for the micro-siting therein of construction laydown areas, and sections requiring directional drilling. Drilling is required underneath major obstacles such as ditches, major roads, railways, and rivers to avoid ecological and landscape impacts or major disruption to key transport corridors.

Targeted Consultation: March 2024

5.4.29 Targeted consultation was carried out in March 2024 to inform affected landowners and nearby residents to potential increases to the Order Limits as presented during the statutory consultation process. Responses have been considered and used to inform design and assessments for the DCO Application.

6 The Design Approach

6.1 Design Masterplan

6.1.1 The Landscape and Ecological Mitigation Plans are a collective set of plans showing how the site may be developed as part of the DCO application. This information is indicative, as opposed to the information within the Works Plan which is fixed.

6.1.2 The Landscape and Ecological Mitigation Plans **[EN010170/APP/GH6.4.4.10 to GH6.4.4.20**] submitted with the DCO Application consists of the illustrative layouts.

6.1.3 The Landscape and Ecological Mitigation Plans represents the completion of an extensive exercise as described within Section 5 of this document, from development concept to DCO application submission. The design addresses the findings of a multi-disciplinary baseline study and environmental assessment, with input from the local community, stakeholders and technical consultants.

6.1.4 The Landscape and Ecological Mitigation Plans demonstrates how the Applicant has pursued the development of an exemplar scheme that meets the design objectives set within Section 4 of this document; is sensitive to its receiving environment, mitigates impacts, provides benefits to local communities whilst making a significant contribution to renewable energy generation.

7 Access

7.1 Overview

7.1.1 The access strategy developed for the Scheme has been formulated to ensure safe access to and from the Order limits through the construction, operational, and decommissioning phases of the Scheme. Access and accessibility are addressed and secured through the DCO application in the following documents which should be read in conjunction with this document:

- Public Rights of Way Plan **[EN010170/APP/GH2.6]**;
- Access to Works Plan **[EN010170/APP/GH2.7]**;
- Construction Traffic Management Plan (CTMP) **[EN010170/APP/GH7.9]**;
- Outline Construction Environment Management Plan (OCEMP) **[EN010170/APP/GH7.1]**; and
- Outline Decommissioning Statement **[EN010170/APP/GH7.3]**.

7.1.2 The Access to Works Plan and Public Rights of Way Plan together provide a visual representation of the location of the access and egress points for all vehicular, cycling, and pedestrian movements within and associated with, the Order limits, whilst the Outline CTMP, Outline CEMP and Outline Decommissioning Statement set out the detailed measures required to ensure the feasibility of construction traffic movements and the safety of the public and workers on the site is maintained at all phases of the development of the Scheme. These documents are secured as requirements of the DCO.

7.2 Construction Access

7.2.1 Traffic movements generated by the construction of the Scheme can be broken into three main groups:

- Construction worker traffic movements;
- Construction heavy goods vehicles (HGV) movements; and
- Abnormal Indivisible Loads.

7.2.2 It can be approximated that the movements and locational requirements for construction access will be the same for decommissioning on the solar array sites.

7.3 Maintenance Access

7.3.1 All the Sites will need to retain access routes throughout the operational lifetime of the Scheme. However, the number of vehicles required is anticipated to be small and will consist predominantly of light goods vehicles or vans for landscaping management, site management and inspection, and operational maintenance purposes. Larger vehicle movements would only be required in the event of a replacement piece of equipment being required, and as such would be ad hoc and limited in nature. This is assessed within ES Chapter 13: Transport and Access **[EN010170/APP/GH6.2.13]**, specifically within Section 13.7.

7.4 Access Locations

7.4.1 The location of access points to the Sites for construction, operation, and decommissioning are listed in **Table 2** below (and shown on the Access to Works Plan **[EN010170/APP/GH2.7]**).

Table 2: Accesses to the Scheme

Access Ref.	Location	Description	Use
Green Hill A			
Access-A-1	Broughton Road	Improved existing field access	• Construction • Operation • Cable Route Corridor
Access-A-2	Broughton Road	Improved existing field access	• Operation
Crossing-A-1 (E)	Newland Road	New access	• Construction • Operation
Crossing-A-1 (W)	Newland Road	Improved existing field access	• Construction • Operation
Green Hill A.2			
Access-A.2-1	Kettering Road	Improved existing field access	• Construction • Operation • Cable Route Corridor
Green Hill B			
Access-B-1	Sywell Road	Improved existing field access	• Construction • Operation • Cable Route Corridor
Access-B-2	Moulton Road	Existing farm access	• Operation
Green Hill C			
Access-C-1	Sywell Road	Existing access to solar farm	• Construction • Operation • Cable Route Corridor

Access Ref.	Location	Description	Use
Green Hill D			
Access-D-1	Highfield Road	Improved existing field access	• Construction • Cable Route Corridor
Access-D-2	Highfield Road	Improved existing field access	• Construction • Operation
Access-D-3	Highfield Road	Improved existing field access	• Construction
Access-D-4	Highfield Road	Improved existing field access	• Operation
Access-D-5	Highfield Road	Improved existing field access	• Construction
Green Hill E			
Access-E-1	Highfield Road	Improved existing field access	• Construction • Operation • Cable Route Corridor
Access-E-2	Earls Barton Road	Improved existing field access	• Construction • Operation
Crossing E-1 (N)	Wilby Road	New access	• Construction • Operation
Crossing-E-1 (S)	Wilby Road	Improved existing field access	• Construction • Operation
Green Hill BESS			
Access-BESS-1	Station Road	Improved existing field access	• Emergency
Access-BESS-2	Station Road	Improved existing field access	• Construction • Operation • Cable Route Corridor
Access-BESS-3	Station Road	Improved existing field access	• Construction • Operation

Access Ref.	Location	Description	Use
Access-BESS-4	Station Road	New access	• Emergency
Green Hill G			
Access-G-1	A428	Improved existing field access	• Construction • Operation
Cable Route Corridor			
CR1	Kettering Road	Improved existing field access	• Cable Route Corridor
CR2	Kettering Road	Improved existing field access	• Cable Route Corridor
CR3	Red House Lane	Improved existing field access	• Cable Route Corridor
CR4	A43	Improved access to Northampton Shooting Ground	• Cable Route Corridor • Construction Compound
CR5	Sywell Road	Improved existing field access	• Cable Route Corridor
CR6	Moonshine Gap	Improved existing field access	• Cable Route Corridor
CR7	Sywell Road	Improved existing field access	• Cable Route Corridor
CR8	Mears Ashby Road	Improved existing field access	• Cable Route Corridor
CR9	Mears Ashby Road	Improved existing field access	• Cable Route Corridor
CR10	A4500	Improved existing field access	• Cable Route Corridor
CR11	A4500	Improved existing field access	• Cable Route Corridor
CR12	Doddington Road (B573)	New access	• Cable Route Corridor • Construction Compound
CR13	Doddington Road (B573)	New access	• Cable Route Corridor

Access Ref.	Location	Description	Use
CR14	Doddington Road (B573)	Improved existing field access.	• Cable Route Corridor
CR15	Station Road	Improved existing field access.	• Cable Route Corridor
CR16	Station Road	Improved existing access to quarry	• Cable Route Corridor
CR17	Station Road	Existing access to Grendon Sub-Station	• Cable Route Corridor
CR18	Station Road	Improved existing field access.	• Cable Route Corridor • Construction Compound
CR19	Yardley Road	Improved existing field access.	• Cable Route Corridor
CR20	Yardley Road	New Access	• Cable Route Corridor
CR21	Yardley Road	Improved existing field access.	• Cable Route Corridor
CR22	Yardley Road	Improved existing field access.	• Cable Route Corridor
CR23	Easton Lane	Improved existing field access.	• Cable Route Corridor
CR24	A509	Improved existing field access.	• Cable Route Corridor

7.5 Public Rights of Way and Highways

7.5.1 The Order limits encompass a large geographic area, and as such a number of PRoW and local highways will be directly and indirectly impacted by the Scheme. The Public Rights of Way Plans **[EN010170/APP/GH2.6]** and Access to Works Plans **[EN010170/APP/GH2.7]** submitted with the DCO application show those PRoWs that fall within or immediately adjacent to the Order limits.

7.5.2 As detailed in the preceding section, the scheme has been designed to avoid the need to close or divert a PRoW unless this is unavoidable. The Transport Assessment provides details of the PRoW and local highway network in the vicinity of the Scheme.

7.5.3 An Outline Public Rights of Way and Permissive Paths Management Plan **[EN010170/APP/GH7.10]** has been prepared and provides a framework for the management of routes throughout the Scheme. The key objective is to ensure that PRoWs and Permissive Paths remain open, and safe at all times throughout the Scheme's construction, operational and decommissioning phases.

7.5.4 An Outline Construction Traffic Management Plan (OCTMP) **[EN010170/APP/GH7.9]** and Outline Operational Traffic Management Plan (OOTMP) **[EN010170/APP/GH7.25]** have been developed which sets the framework for a CTMP and OTMP which will be implemented during the construction and operational phase of the Scheme, with the requirement to provide a detailed management plan secured through the DCO. The OCTMP and OOTMP provide a framework for the management of vehicle movements to and from the site during the construction and operational phase, to reduce, as far as practicable, impacts of the Scheme on the local highway network.

7.6 Permissive Paths

7.6.1 The Scheme incorporates new permissive paths, defined in Work No. 10 of the draft DCO [**EN010170/APP/GH3.1]** and further described in Chapter 4: Scheme Description **[EN010170/APP/GH6.2.4]** of the ES. The inclusion of permissive paths will contribute to the wider network of footpaths in the area and facilitate greater public access to the Countryside. Permissive paths will be provided with certain paths designated exclusively for pedestrian use, and others designed for shared use by both pedestrians and equestrian users. Permissive paths have been designed following feedback at statutory consultation and engagement with various stakeholders.

7.6.2 The design and implementation of the permissive paths is set out in the **Landscape and Ecology Mitigation Plans [EN010170/APP/GH6.4.4.10] to [EN010170/APP/GH6.4.4.20] and Outline LEMP [EN010170/APP/GH7.4]** and secured by a Requirement in the draft DCO **[EN010170/APP/GH3.1].** The Outline Public Rights of Way and Permissive Paths Management Plan **[EN010170/APP/GH7.10]** provides a framework for the management of PRoWs throughout the Order Limits. ES Figure 22 **[EN010170/APP/GH6.4.4.22]** outlines the permissive paths proposed as part of the Scheme.

8 Commitments

8.1 Project Flexibility and Concept Design Parameters

8.1.1 National Policy Statements acknowledge that with NSIPs there will be some uncertainty regarding the exact design, layout and technology to be used given their timescales.

8.1.2 The Scheme has employed a maximum design scenario approach (the 'Rochdale Envelope'). This provides a maximum build out scenario approach to the assessment of environmental impacts. It allows for the project to be framed within set parameters, for these parameters to be assessed in order to provide flexibility, while ensuring all potentially significant effects (positive or adverse) have been considered. The use of a Rochdale Envelope is acknowledged by Energy Statement EN-1.

8.1.3 The maximum design scenarios are identified from the range of potential options for each design parameter for the Scheme. These have been determined through baseline surveys and analysis of the existing physical and environmental constraints relating to landscape, ecology, flooding, cultural heritage, built environment, and utilities and telecommunications infrastructure. The maximum design scenario assessed is that which would give rise to the greatest potential impact. These maximum design scenarios define the parameters set out in the Concept Design Parameters and Principles **[EN010170/APP/GH7.17]** document which is secured by a requirement in the Draft DCO.

8.1.4 The DCO process enables flexibility to be built into the Scheme (through the definition of the authorised development as set out in Schedule 1 of the Draft DCO **[EN010170/APP/GH3.1]** and the Works Plan **[EN010170/APP/GH2.4]**). Key areas of optionality that have been included in this application are:

1. PV panel type – 'trackers' and 'fixed'. The DCO application seeks consent for the Applicant to be able to utilise either tracker or fixed panels in order to allow use of tracker technology if this becomes feasible. Tracker panels have a maximum height of 4.5m, whereas fixed panels are up to 3.5m. The tracker panels have been assessed as a worst-case option for most environmental disciplines, with both tracker and fixed panels being considered where relevant to ensure all impacts are assessed.
2. Energy Storage. The application proposes that the energy storage for the Scheme will be located within the Green Hill BESS or alternatively Green Hill C. This will help meet needs of the electricity market, support policy objectives for delivery of renewable energy at peak times, and by providing grid balancing services to help increase electricity distribution network.
3. Fire suppression water storage. Each BESS container will be fitted within an automatic sprinkler or water mist system for fire suppression in the event of a fire. The water supply for this system will be integrated into the design of each BESS container and located either internally or externally (centralised or decentralised) to each BESS.

8.1.5 The DCO Works Plans show the maximum extents of different types of elements within the development (i.e. panels, substations, cabling etc.). The Works Plans show the parameters within which each Works Package comprising the authorised development may be constructed. These parameters have been assessed within the ES.

8.1.6 Whilst the Landscape and Ecology Mitigation Plans have been included in the DCO application, this represents one way in which the Sites could be developed. The ability of the Applicant to micro-site during construction is an important consideration and is necessary in order to incorporate any technological advancement or changes in plant design or shape. The Draft DCO **[EN010170/APP/GH3.1]** submitted with the application includes pre-commencement DCO Requirements for the submission and approval of detailed design proposals prior to construction. These Requirements are intended to, and would have the effect of, clarifying the construction and operational sequencing of the Scheme.

8.1.7 Demonstrating that the final detailed design remains within the parameters set out in the Concept Design Parameters and Principles **[EN010170/APP/GH7.17]** and therefore the Rochdale Envelope assessed in the ES. The requirements must be approved by the LPAs, meaning they retain a degree of control over the final design for the Scheme, to ensure it is acceptable and within the limits of what was assessed in the DCO application.

8.2 The DCO

8.2.1 Development consent for the Scheme is granted by the DCO. Schedule 1 to the DCO defines the “authorised development” for which development consent is granted.

8.2.2 The development listed in Schedule 1 comprises the Scheme in its entirety. The key elements of the Scheme are allocated specific Work Numbers. Schedule 2 to the DCO sets out the Requirements in accordance with which the Scheme must be constructed, operated, maintained and decommissioned. This includes a requirement that the Scheme is developed in accordance with the Concept Design Parameters and Principles **[EN010170/APP/GH7.17]** and that the detailed design of the Scheme will be required to be submitted to and approved by the relevant planning authorities.

8.2.3 As part of the DCO application, a draft DCO **[EN010170/APP/GH3.1]** and accompanying Draft Explanatory Memorandum **[EN010170/APP/GH3.2]** have been prepared by the Applicant. The draft DCO sets out the intended scope of the DCO powers applied for, whilst the supporting memorandum provides and explains how the provisions of the draft DCO secure and control how the Scheme can be built and operated.

8.3 Works Plan

8.3.1 The Works Plans **[EN010170/APP/GH2.4]**, define the locations and extents of each of the works numbers set out in Schedule 1 to the DCO within the Order limits. The DCO, if granted, would not permit any work number outside the land in which it is shown to be located by the Works Plans.

8.4 Environmental Commitments

8.4.1 Chapter 27: Commitments Register **[EN010170/APP/GH6.2.27]** outlines the environmental mitigation measures to be adopted during the construction, operation and maintenance, and decommissioning phases of the Proposed Scheme, and identifies where that mitigation is secured in Schedule 2 Requirements of the Draft Development Consent Order (DCO) **[EN010170/APP/GH3.1]**.

8.4.2 The DCO requirements, secure the following plans, the outlines of which are submitted with the application:

- Construction Environmental Management Plan (CEMP) **[EN010170/APP/GH7.1]**;
- Operational Environmental Management Plan (OEMP) **[EN010170/APP/GH7.2]**;
- Decommissioning Statement (DS) **[EN010170/APP/GH7.3]**;
- Landscape Ecological Management Plan (LEMP) **[EN010170/APP/GH7.4]**;
- Ecological Protection and Mitigation Strategy (EPMS) **[EN010170/APP/GH7.5]**;
- Soil Management Plan (SMP) **[EN010170/APP/GH7.6]**;
- Battery Storage Safety Management Plan (BSSMP) **[EN010170/APP/GH7.7]**;
- Skills Supply Chain and Employment Plan (SSCEP) **[EN010170/APP/GH7.8]**;
- Construction Traffic Management Plan (CTMP) **[EN010170/APP/GH7.9]**;
- Public Rights of Way and Permissive Paths Management Plan (PRoWPPMP) **[EN010170/APP/GH7.10]**; and
- Operational Traffic Management Plan (OTMP) **[EN010170/APP/GH7.25]**.

8.4.3 Other control mechanisms include the Works Plan **[EN010170/APP/GH2.4]** and the requirement for approval of detailed design which secures the Concept Design Parameters and Principles **[EN010170/APP/GH7.17]**.

8.4.4 Delivery of the commitments set out in these documents will also be secured by requirements of the DCO. These will commit the Applicant to developing a detailed landscape and ecology management plan and a detailed surface water drainage scheme which accord with the relevant outline plans referred to above.

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